

Factors Affecting the Student Career Decision-Making of Junior High School Students in Central Taiwan Area

Ming-Shang Su, Ta-Chun Chang, Chin- Chang Wu, and Chin-Wen Liao

Abstract—This study intends to investigate the factors affecting students' career decision-making for technique arts education program in junior high schools in central Taiwan areas.

Based on the results, the findings are as follows:

- 1). The main factor affecting the student career decision is “personal factors”.
- 2). Students studying in a school of a larger scale and enrolled in homemaking courses are most prone to the influence of “personal factors” in educational decisions.
- 3). For students with parents with mid-to high educational attainment, “family factors” are the most influential factors of student career decisions.
- 4). For students enrolled in homemaking courses, “school factors” are the most prominent factors of student career decisions.
- 5). For students of Junior High Schools in Taichung City and enrolled in homemaking courses, career-exploration factors are the most significant factors of student career decisions.

Index Terms—Vocational technical education program, educational career decisions, career counseling.

I. INTRODUCTION

A. Research Background and Motivation

1) Research background

Implementation of education projects is mainly focused on students' needs for somatopsychic and career development, in terms of students, schools are the key factor affecting students' career decision-making because school education can assist students in carrying out the career exploration, the motivation of looking for jobs, and the reflection of their own career goal [1].

Super [2] pointed out that 0-14 years old is the preferences, to think of several factors, such as interest, requirement, ability, value and opportunity, as well as try to select a certain profession to be a long-term career development goal.

Ministry of Education (MOE) hopes that each public junior high school can make good use of the career development education promotion to assist students in making decisions on self-awareness, career-awareness, life planning and advanced

education, in order to achieve the life goal of adaptive preparation, development and choice, so as to be self-actualized and self-realized in the process of learning development, further to create a valuable life [3].

2) Research motivation

In 1993, Department of Secondary Education, Ministry of Education implemented the trial “Technique Arts Education Plan in Junior High Schools”; in 2001, enacted the technique arts education policy by the letter of “Technique Arts Education Reform Plan”, and to expect to guide students with lower performance or willingness for further study who can take the technique arts education program according to their interests and willingness [4], and then assist them in obtaining basic skills and practical knowledge [5]. Therefore, this study is tended to understand the current status of junior high schools students with taking the technique arts education program that their career decision-making after graduation, which is also the first research motivation of this study.

Ching-Wen Lin [6] also indicated that factors affecting career plan are: personal factor, environmental factor, group factor, school factor and social factor. Therefore, this study is investigated these related personal, group, school and career exploration factors that affecting junior high school students of technique arts education program for their career decision-making, and this is the second research motivation of this study.

In recent years, the research contents of technique arts education are mostly contained: the exploration of current status for its implementation; students' learning motivation, learning satisfaction, learning outcome, and vocational maturity; however, there're only few researches on students' career planning after their participation in such program [7].

B. Research Purpose

This study is mainly adopted those junior high school students in Taichung City, Changhua County and Nantou County who participated in academic year 2013 cooperative technique arts education program as the research object, and tended to use related literature and practical questionnaire to make further survey in order to understand their career decision-making and related affecting factors for their career decision-making, and the research purposes are described as follows:

- 1) To understand the current status of junior high schools students' career decision-making who participated in the technique arts education program.
- 2) To investigate the affecting factors of junior high schools students' career decision-making who participated in the technique arts education program.
- 3) To analyze the difference in career decision-making for

Manuscript received April 20, 2015; revised June 29, 2015.

M.-S. Su, T.-C. Chang, and C.-C. Wu are with the Department of Industrial Education, National Changhua University (NCUE), Taiwan, R.O.C. (e-mail: zacd1234@yahoo.com.tw, jackncue@gmail.com, wsh1102@yahoo.com.tw).

C.-W. Liao is with the Department of Industrial Education and Technology, National Changhua University of Education (NCUE), Taiwan, R.O.C. (e-mail: tcwliao@cc.ncue.edu.tw).

those junior high schools students with different background variables and participated in the technique arts education program.

II. RESEARCH DESIGN AND IMPLEMENTATION

A. Research Framework

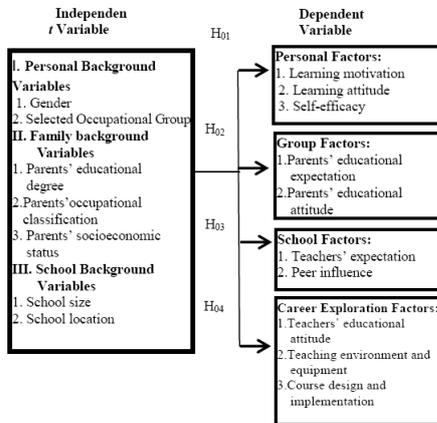


Fig. 1. Research framework.

Research Framework of this study is composed of the research purposes and related literature review as shown in

TABLE I: FAMILY'S SOCIOECONOMIC STATUS LEVEL AND SCORESHEET

Education degree	Education Index Weight	Occupational Classification	Occupational Index Weight	Socioeconomic Status Level	Socioeconomic Status Level	Scoring Method
I	5x4	I	5x7	55-52	I	5
II	4x4	II	4x7	51-41	II	4
III	3x4	III	3x7	40-30	III	3
IV	2x4	IV	2x7	29-19	IV	2
V	1x4	V	1x7	18-11	V	1

Data source: Sheng-chuan Lin (2005)

D. Research Implementation

1) Pre-test phase

After completed the questionnaire draft of this study, the pre-test questionnaire is made after contents reviewed by experts and scholar. To understand the suitability and applicability of questionnaire, this study is selected 3 junior high schools from the population of cooperative technique arts education program according to cities and counties, then carried out the pre-test with sending out questionnaire in accordance with the percentage of students that occupied in the total population. In addition, after collected pre-test questionnaire, it analyzed question items, factors and reliability, and screened out invalid or low related questions to edit into an official questionnaire then.

2) Official questionnaire survey

After official questionnaire edited, this study used the stratified random sampling to sample students from total 16 junior high schools in central Taiwan areas (including Taichung City, Changhua County and Nantou County) who participated in cooperative technique arts education program, with sending out 600 copies of questionnaire, and 568 copies returned with a questionnaire return rate of 94.67%. After eliminating 51 invalid copies, there're 517 valid copies with a valid return rate of 86.17%.

Fig. 1.

B. Research Object

Main research object of this study the those junior high schools students in Taichung City, Changhua County and Nantou County who participated in academic year 2013 cooperative technique arts education program. There are 108 junior high schools within these 3 cities and counties that joined to the cooperative technique arts education program with establishing 215 classes and total 5,483 participants as the population of survey.

C. Research Tools

This study is adopted the questionnaire survey and revised according to Research Framework to edit and make the "Factors Affecting Students' Career Decision-making of Technique arts education Program in Junior High Schools Questionnaire" as a research tool of this study.

In terms of parents' socioeconomic status, this study applied the research result made by domestic scholar Sheng-chuan Lin [8] with referring to social reality weight education degree and occupation and combine together later, where the high and low indexes of education degree multiply by "Four", and occupational indexes multiply by "Seven", then the total sum will be the socioeconomic indexes, and divided into 5 levels, as shown in Table I.

III. RESEARCH SCOPE AND LIMITATION

A. Research Scope

1) Research object

This study is adopted grade 9 students in Taichung City, Changhua County and Nantou County who participated in academic year 2013 cooperative technique arts education program as the research object (without specialized class students).

2) Research area

According to the open admission program of Twelve-year National Fundamental Education Implementation Policy, and due to the joint open admission areas, such as Chung-Nantou area and some villages and townships in Changhua area that can enter schools in these areas mutually, thus this study is tended to use these 3 central Taiwan cities and counties, including Taichung City, Changhua County and Nantou County, as the research area and location.

3) Research contents

This study is investigated factors affecting those Grade 9 students' career decision-making who participated in cooperative technique arts education program of public junior high schools in Taichung City, Changhua County and Nantou

County.

B. Research Limitation

- 1) Research Object: this study is regarded those junior high schools students as the research object and research limitation who participated in cooperative technique arts education program in Taichung City, Changhua County and Nantou County.
- 2) Research Method: this study is adopted questionnaire survey which its may have the following limitations: during filling in such questionnaire, students may discuss those questions to each other, thus their opinions may be affected by peers and teachers or personal experience, awareness and self-defense, thus the results may be deviated; in addition, it also needs to suppose that those participants can fill in the questionnaire according to their actual recognition and awareness.
- 3) Research Document: the source of document analysis for this study is provided from the information and data of Education Bureau of Taichung City Government, Department of Education of Changhua County Government and Education Bureau of Nantou County Government in academic year 2013, and the researcher organized them with the statistical method, however, it may still exist statistical errors, thus the research result of this study truly has its own limitation of making

inference.

- 4) Research Inference: this study is adopted the current implementation of cooperative technique arts education program in junior high schools of Taichung City, Changhua County and Nantou County, and the investigation of the factors affecting those students' career decision-making as the research subject, thus the inference of this research result may have the limitation or areas.

IV. DATA ANALYSIS AND DISCUSSION

According to the data and information collected by using the "Factors Affecting Students' Career Decision-making of Technique arts education Program in Junior High Schools Questionnaire", this study is carried out the statistical analysis and discussion for the research purpose and hypothesis.

A. Basic Data Analysis of Research Samples

- 1) Current analysis of students' personal background variables. As shown in Table II:

TABLE II: STUDENTS' PERSONAL BACKGROUND VARIABLES DATA ANALYSIS SHEET

Background variables	Items	Population	Occupational cluster	Population	Percentage (%)
Gender	Male	190			36.8
	Female	327			63.2
Occupational Group	Electric Machinery & Electronics / Power Machinery Group	80	Industrial Class	155	30
	Chemical Engineering Group	17			
	Civil Engineering and Architecture Group	18			
	Design Group	40	Commercial Class	225	43.5
	Hospitality Group	121			
	Commerce and Management Group	104			
	Home Economics Group	88			
	Food Science Group	49	Agricultural Class	49	9.5

N=517

TABLE III: STUDENTS' FAMILY BACKGROUND VARIABLES DATA ANALYSIS SHEET

Background Variables	Items	population	Combination Level	Population after combination	Percentage (%)
Parents' educational degree	Graduate institute graduated or in progress	9	High	12724.56	
	Junior college, university graduated or in progress	118			
	Senior high (vocational) schools graduated or in progress	294	Medium	29456.87	
	Junior high schools graduated or in progress	77	Low	9618.57	
	Elementary school graduated or in progress, including those without education	19			
Parents' occupational classification	High-level professionals, high-level administrators	13	High	7815.09	
	Professionals, mid-level administrators	65			
	Semi-professionals, regular public servants	96	Medium	9618.57	
	Technicians	198	Low	34366.34	
	Semi-technicians, non-technical workers	145			
Parents' socioeconomic status	I	54	High	32262.28	
	II	268			
	III	139	Medium	13926.89	
	IV	54	Low	5610.83	
	V	2			

2) Current analysis of students' family background variables

In this study, students' family background variables include the parents' educational degree, parents' occupational classification and parents' socioeconomic status, as shown in Table III.

3) Current analysis of students' school background variables

In this study, students' school background variables include the school size and school location as shown in Table IV:

TABLE IV: STUDENTS' SCHOOL BACKGROUND VARIABLES DATA ANALYSIS SHEET

Background Variables	Items	Population	Percentage (%)
School Size	Large (51 classes above)	178	34.4
	Med-Large (36-50 classes)	112	21.7
	Medium (21-35 classes)	119	23.0
	Small (less than 20 classes)	108	20.9
School Location	Taichung City	258	49.9
	Changhua County	168	32.5
	Nantou County	91	17.6

N=517

B. Analysis of Current Status for Factors Affecting Students' Career Decision-Making

1) Analysis of current status for affecting students' career decision-making by personal factor

Personal factors affecting students' career decision-making on the overall and these three aspects, such as "learning motivation", "learning attitude" and "Self-efficacy", the average scores are between 4.25 to 3.88, which showed a "most deeply affected" level.

2) Analysis of current status for affecting students' career decision-making by group factor

Group factors affecting student s' career decision-making on the overall and two aspects, such as "parents' educational expectation" and "parents' educational attitude", the average scores are between 4.14 to 4.05, which showed a "most deeply affected" level.

3) Analysis of current status for affecting students' career decision-making by school factor

School factors affecting students' career decision-making on the overall and two aspects, such as "teacher expectation" and "peer influence", the average scores are between 4.02 and 3.58, which showed a "most deeply affected" level.

4) Analysis of current status for affecting students' career decision-making by career exploration factor

Career exploration factors affecting student s' career decision-making on the overall and three aspects, such as "teachers' educational attitude", "teaching environment and equipment" and "course design and implementation", the average scores are between 4.12 to 4.09, which showed a

"most deeply affected" level.

C. Difference Analysis of Personal Factors Affecting Students' Career Decision-Making with Different Background Variables

1) Difference analysis of personal factors affecting students' career decision-making with different background variables

1) Personal factors affecting students with different genders for their career decision-making that have not reached the significant difference ($t=-1.373, p>.05$) for overall aspects.

2) Personal factors affecting students with different occupational clusters for their career decision-making that have reached the significant difference ($F=5.189, p<.01$) for overall aspects.

2) Difference analysis of personal factors affecting students' career decision-making with different family background variables

1) Personal factors affecting students with different parents' educational degree for their career decision-making that have not reached the significant difference ($F=2.990, p>.05$) for overall aspects.

2) Personal factors affecting students with different parents' occupational classification for their career decision-making that have not reached the significant difference ($F=.012, p>.05$) for overall aspects.

3) Personal factors affecting students with different parents' socioeconomic status for their career decision-making that have not reached the significant difference ($F=.256, p>.05$) for overall aspects.

3) Difference analysis of personal factors affecting students' career decision-making with different school background variables

1) Personal factors affecting students with different school size for their career decision-making that have reached the significant difference ($F=4.385, p<.01$) for overall aspects.

2) Personal factors affecting students with different school location for their career decision-making that have reached the significant difference ($F=3.059, p<.05$) for overall aspects.

D. Difference Analysis of Group Factors Affecting Students' Career Decision-Making with Different Background Variables

1) Difference analysis of group factors affecting students' career decision-making with different personal background variables

1) Group factors affecting students with different gender for their career decision-making that have not reached the significant difference ($t=-.475, p>.05$) for overall aspects.

2) Group factors affecting students with different occupational cluster for their career decision-making that have reached the significant difference ($F=2.643, p<.05$) for overall aspects.

2) Difference analysis of group factors affecting students' career decision-making with different family background variables

- 1) Group factors affecting students with different parents' educational degree for their career decision-making that have reached the significant difference ($F=5.420, p<.01$) for overall aspects.
- 2) Group factors affecting students with different parents' occupational classification for their career decision-making that have not reached the significant difference ($F=1.019, p>.05$) for overall aspects.
- 3) Group factors affecting students with different parents' socioeconomic status for their career decision-making that have not reached the significant difference ($F=1.077, p>.05$) for overall aspects.

3) *Difference analysis of group factors affecting students' career decision-making with different school background variables*

- 1) Group factors affecting students with different school size for their career decision-making that have not reached the significant difference ($F=1.058, p>.05$) for overall aspects.
- 2) Group factors affecting students with different school location for their career decision-making that have not reached the significant difference ($F=.032, p>.05$) for overall aspects.

E. *Difference Analysis of School Factors Affecting Students' Career Decision-Making with Different Background Variables*

1) *Difference analysis of school factors affecting students' career decision-making with different personal background variables*

- 1) School factors affecting students with different gender for their career decision-making that have not reached the significant difference ($t=-1.700, p>.05$) for overall aspects.
- 2) School factors affecting students with different occupational cluster for their career decision-making that have reached the significant difference ($F=3.460, p<.05$) for overall aspects.

2) *Difference analysis of school factors affecting students' career decision-making with different family background variables*

- 1) School factors affecting students with different parents' educational degree for their career decision-making that have not reached the significant difference ($F=1.407, p>.05$).
- 2) School factors affecting students with different parents' occupational classification for their career decision-making that have not reached the significant difference ($F=.271, p>.05$) for overall aspects.
- 3) School factors affecting students with different parents' socioeconomic status for their career decision-making that have not reached the significant difference ($F=.992, p>.05$) for overall aspects.

3) *Difference analysis of school factors affecting students' career decision-making with different school background variables*

- 1) School factors affecting students with different school size for their career decision-making that have not reached the significant difference ($F=2.341, p>.05$) for

overall aspects.

- 2) School factors affecting students with different school location for their career decision-making that have not reached the significant difference ($F=1.317, p>.05$) for overall aspects.

F. *Difference Analysis of Career Exploration Factors Affecting Students' Career Decision-Making with Different Background Variables*

1) *Difference analysis of career exploration factors affecting students' career decision-making with different personal background variables*

- 1) Career exploration factor affecting students with different gender for their career decision-making that have not reached the significant difference ($t=-.989, p>.05$) for overall aspects.
- 2) Career exploration factor affecting students with different occupational cluster for their career decision-making that have reached the significant difference ($F=4.945, p<.01$) for overall aspects.

2) *Difference analysis of career exploration factors affecting students' career decision-making with different family background variables*

- 1) Career exploration factor affecting students with different parents' educational degree for their career decision-making that have not reached the significant difference ($F=1.697, p>.05$) for overall aspects.
- 2) Career exploration factor affecting students with different parents' occupational classification for their career decision-making that have not reached the significant difference ($F=.056, p>.05$) for overall aspects.
- 3) Career exploration factor affecting students with different parents' socioeconomic status for their career decision-making that have not reached the significant difference ($F=1.025, p>.05$) for overall aspects.

3) *Difference analysis of career exploration factors affecting students' career decision-making with different school background variables*

- 1) Career exploration factor affecting students with different school size for their career decision-making that have not reached the significant difference ($F=2.421, p>.05$) for overall aspects.
- 2) Career exploration factor affecting students with different school location for their career decision-making that have reached the significant difference ($F=4.921, p<.01$) for overall aspects.

V. CONCLUSIONS AND SUGGESTIONS

A. Conclusions

1) *Students' career decision-making is most deeply affected by "personal factor"*

This study is divided "factors affecting career decision-making" into 4 variables, such as "personal factor", "group factor", "school factor" and "career exploration factor", to analyze and investigate. The research results showed that students' career decision-making is most deeply

affected by “personal factor”, next are “group factor” and “career exploration factor”, and “school factor” has the lowest affecting level to them.

2) Students of large-sized schools with taking household affairs courses who will be easily affected by “personal factor of career decision-making”

This study is divided personal factors affecting career decision-making into three aspects: “learning motivation”, “learning attitude” and “self-efficacy”; among which, students of large-sized schools with taking household affairs courses whose “overall” affecting level of personal factors for their career decision-making will be greater than students of medium-sized schools with taking industrial and commercial courses; students of large-sized schools with taking household affairs courses whose affecting level of “learning motivation” will be greater than students of small-sized schools with taking commercial courses; female students of medium/large-sized schools with middle-level education degree parents and taking household affairs courses whose affecting level of “learning attitude” will be higher than male students of medium-sized schools with lower education degree parents and taking industrial and commercial courses; and students with taking household affairs course whose affecting level of “self-efficacy” will be greater than students with taking commercial courses.

3) Students with middle-level education degree parents who will be most deeply affected “group factor affecting career decision-making”

This study is divided the group factors affecting career decision-making into 2 aspects: “parents’ educational expectation” and “parents’ educational attitude”, students with middle/above parents’ educational degree whose affecting level of group factor “overall” and “parents’ educational expectation” for career decision-making will be higher than students with lower parents’ educational degree; students with middle parents’ educational degree will have higher affecting level of “parents’ educational attitude” than students with lower parents’ educational degree.

4) Students with taking household affairs courses are most significantly affected by “school factor affecting career decision-making”

This study is divided school factors affecting career decision-making into 2 aspects: “teacher expectation” and “peer influence”, where students with taking household affairs courses whose affecting level of school factors “overall” and “peer influence” for their career decision-making will be higher than students with taking industrial courses; students of medium/large-sized schools whose affecting level of “teacher expectation” will be greater than students of medium-sized schools.

5) In Taichung City, junior high schools students with taking household affairs courses are most significantly affected by “career exploration factor affecting career decision-making”

This study is divided career exploration factors affecting career decision-making into “teachers’ educational attitude”, “teaching environment and equipment” and “course design and implementation”, among which, junior high school

students of Taichung City with taking household affairs courses whose affecting level of career exploration factor of “overall” and “course design and implementation” or their career decision-making will be higher than junior high school students of Changhua County with taking industrial and commercial courses; students of large-sized junior high schools in Taichung City with taking household affairs courses whose affecting level of “teachers’ education expectation” will be higher than small-sized junior high school students of Changhua County with taking commercial courses; junior high school students in Taichung City with taking household affairs courses whose affecting level of “teaching environment and equipment” will be higher than junior high school students of Changhua County with taking commercial courses [9].

B. Suggestions

1) For education administration authority

For education administration authority, this study proposes several suggestions as follows:

a) Establish well-developed regulations

In order to make technique arts education program in junior high schools to be progressed and promoted successfully, education administration authority shall continuously amend related laws and regulations and handle those questions and administrative barriers that yielded from policy promotion, and study and draft the corresponding measures to look for the best solution.

b) Budgetary slack on school’s subsidy

Hope the education administration authority to be a budgetary slack on school’s subsidy as well as supporting the implementing funds; in addition, assess conditions of school operation, including the quality of instruction faculty, teaching environment, equipment and sources etc., so as to assist each school in developing its own characteristics for occupational group and build a good partnership and interaction between occupational group and enterprises that of improving teaching environment and quality.

c) Enhance the promotion and survey for the technique arts education in junior high schools

Various propaganda and visiting activities of technique arts education program in junior high schools will be depended on related assistance and support from corresponding education administration authority to make successful progress and promotion then, by means of activity propaganda, which can make students and their parents to further know and understand the technique arts education.

d) Set well-functioned inquiry website

After a series of career exploration for technique arts education, students may have many doubts about those student career methods and choices; therefore, the education administration authority shall collect and handle the first-hand information and set a well-developed website as an exchange platform, as well as publish and update timely and complete information of education advancement which can provide teachers, parents and students with a convenient inquiry channel of career.

2) For these cooperative senior high (vocational) schools this study proposes several suggestions as follows

a) Employ professional instruction teachers

Teachers' professional ability and educational attitude are really the key points to education development and implementation. In each senior high (vocational) school, while planning to implement the technique arts education program, they have to carefully select their faculty, so as to make them to have counseling ability and patience in the teaching process, as well as understand students' ability and requirement.

b) Build a well-developed learning environment and equipment

Establishment of campus space for teaching environment will have solid influences on course development, teaching innovation and students' learning achievement, in order to improve students' learning outcome, each senior high (vocational) school shall devote themselves to set and build comfortable and well-developed learning spaces; in addition, work spaces with connecting to the industrial circle to give students actual experiences to satisfy students' learning requirement.

c) Plan courses that meet social and students' requirements

Along the continuous innovation and change in industrial culture for our society, schools' planning of technique arts education courses shall be cooperated with the social industrial requirement and the fashion trend, then guide students from easy tasks to difficult knowledge, assist them in learning related knowledge and skill that they learned from the occupational group.

3) For junior high schools

This study herein proposed following suggestions for junior high schools:

a) Implement the promotion of career development education

Practically establish the career development task force, promote the integration of career education courses into each disciplinary teaching, establish education characteristics for school development, mainly focus on integrated teaching activities to integrate with community and parents resources, and handle various workshop and professional sharing courses.

b) Plan well-developed counseling system

Plan to build a well-developed counseling system, implement the vocational aptitude test, interesting test system and career counseling system, in order to understand students' real requirement and promptly give them with necessary information and counseling.

c) Continuously promote the technique arts education program

Schools shall actually cooperate with senior high (vocational) schools and plan technique arts education learning courses that conform to current requirement for our society, proper skill exploration and learning for students, and focus on those grade 9 students who are interesting in skill learning and their school performance tended to fall behind, and after assisting them in career exploration, they may have certain career decision-making after graduation from junior high.

d) Actively propagandize the practical skills courses

It suggested that schools can actively promote senior high (vocational) schools to implement the year-based practical skill courses and job-oriented course design to encourage junior high school students in prior to take the technique arts courses.

4) For junior high school teachers

This study herein proposed following suggestions for junior high school teachers:

a) Teach in line with the student's ability and adaptive counseling

Most students participated in the technique arts education program who may tend to learn the technique arts courses and have lower willingness of regular disciplinary learning, teachers shall focus on students with different abilities and aptitudes and give them prompt and adaptive counseling, so as to make students to incubate their fundamental ability of career development in order to enroll the most adaptive senior high (vocational) schools for them.

b) Parent-teacher cooperation and break the myth of credentialism

Along the official implementation of Twelve-year National Fundamental Education program, the graduation performance is no longer the only basis of advancing higher education, thus, in addition to make self-adjustment, junior high school teachers shall assist students and parents in braking the myth of "elite schools" and "performance first".

5) For follow-up researches

This study is adopted questionnaire survey, and proposed the following suggestions for follow-up researches:

a) For research method

This study is adopted questionnaire survey, even it had made every effort to use stratified random sampling to implement the survey, still it couldn't cover students' individuality and uniqueness, and the survey result may also have errors that affected by their subjective perception, awareness and self-defense when assisting and guiding those testees in filling the questionnaire. As a result, it suggested that those follow-up researchers can cooperate with the qualitative methods to make the research outcome to be more deepened into the core question and then analyze and sort out more correct inference.

b) For research object

It suggested that those follow-up researches can focus on students who participated in cooperative technique arts education course in other different school areas, or students who participated in the self-established courses to understand the difference of affecting level among those students in order to make the inference of research outcomes to be more completed and representative.

c) For research content

Since academic year 2014, Twelve-year National Fundamental Education has been implemented officially, thus it suggested that the follow-up researches can include various scoring items of "excess than sequencing project" as the factors affecting career decision-making to investigate and analyze the difference between students with different background variables and factors affecting career

decision-making.

REFERENCES

- [1] D. S. Yeager, M. J. Bundick, and R. Johnson, "The role of future work goal motives in adolescent identity development: A longitudinal mixed-methods investigation," *Contemporary Educational Psychology*, vol. 37, no. 3, pp. 206-217, 2012.
- [2] D. E. Super, "A theory of vocational development," *American Psychologist*, vol. 8, pp. 185-190, 1953.
- [3] H.-G. Hsu, "The research of applying psychological tests on junior high school students while taking technical arts program," *Psychological Testing*, vol. 59, no. 2, pp. 219-246, 2012.
- [4] C.-J. Tien and J.-C. Chang, "Technique arts education policy and prospects," *Ministry of Junior High Schools Technique Arts Education Seed-teacher Training Handbook*, Department of Technological and Vocational Education, MOE, 2002, pp. 8-10.
- [5] L.-L. Lei, "A study in the relationship among the student learning satisfaction and career self-efficacy in the technical education program of junior high school in Taipei city," Master thesis, Dept. Grad. Education, Ming Chuan University (MCU), Extracted from National Digital Library of Theses and Dissertations in Taiwan. (System Code 100MCU05331015), 2012.
- [6] C.-W. Lin, *University Students Career Development and Plan Handbook*, Taipei: Psychological Publishing, 2002.
- [7] W.-D. Huang, "Intergenerational transmission of socio-economic status: health factors on the academic achievement of children," Master thesis, Extracted from National Digital Library of Theses and Dissertations in Taiwan. (System Code 101CCU00324025), 2013.
- [8] S.-C. Lin, *Sociology of Education*, Kaohsiung: Chuliu, 2005.
- [9] C.-J. Huang, *Course Design*, Taipei: Tunghua, 2010.

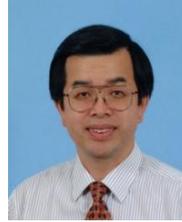


Ming-Shang Su received the M.S. degree at the Department of Industrial Education and Technology from National Changhua University of Education in 2010, and currently is a doctoral student at the Department of Industrial Education from National Changhua University, Taiwan, R.O.C. Since August 2013, he has been a section chief of search in Changhua County Hsiushui Junior High School in Taiwan, R.O.C. Since August 2005, he has taught courses in math in the same school.



study in the same school.

Ta-Chun Chang received the M.S. degree at the Department of Industrial Education from National Changhua University in 2001, and currently is a doctoral student at the Department of Industrial Education from National Changhua University, Taiwan, R.O.C. Since August 2014, he has been a director of student affairs in Taichung Municipal Lishin Junior High School in Taiwan, R.O.C. Since August 2013, he has taught courses in mathematics



education.

Chin-Chang Wu received the M.S. degree in education from National Changhua University of Education, Taiwan, R.O.C. and the Ph.D in industrial education and technology from National Changhua University of Education in 2005. He has been a school principal in Dong Shing Elementary School, Taiwan, R.O.C. and dealt with administrative affairs of the school. His research interests include leading, technology, and vocational



education, course and teaching, organization learning. His research interests include technology and vocational education, energy education of technology, automatic control, and knowledge management.

Chin-Wen Liao received both M.S. and Ph.D. degrees in industrial education from National Taiwan Normal University, Taiwan, R.O.C. in 1994 and 2002, respectively. Since August 2011, he has been a professor in the Department of Industrial Education and Technology at National Changhua University of Education (NCUE) in Taiwan, R.O.C. At the same time. He teaches courses in technology and vocational education, energy education, teacher