

## **Improving Students' Career Decision Making through Organization Development Interventions—A Course Design of Career Exploration in the International College of Zhejiang Yuexiu University of Foreign Languages**

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### **Abstract**

The research aims to improve students' career decision making in terms of career decision making self-efficacy (CDMSE) through organization development interventions (ODI) based career exploration course. The course content was developed based on the cognitive information processing model, and a five-stage CASVE cycle (communication, analysis, synthesis, valuing, and execution) ODI was applied to assist with students' career decision making. An application of organization development tools—Appreciative Inquiry, team building, goal setting, and plan making—was utilized together with self-assessments, occupation interviews and periodical reflection reports. A comparison between an experiment group (N=64) and a control group (N=64) was investigated, and mixed research methods of qualitative and quantitative data collection were employed to compare two groups' pre-ODI and post-ODI performance in light of career exploration and career decision making self-efficacy, which were measured by Career Exploration Scale and Career Decision Making Self Efficacy Scale respectively. The research findings revealed that students who took the career exploration course had statistically significant gains in career exploration and career decision making self-efficacy, whereas no significant improvement was observed in the control group. The results can be concluded that ODI-based career exploration course is effective in improving students' career decision making self-efficacy.

**Keywords:** career exploration course, career decision making self-efficacy, organization development interventions (ODI)

### **Introduction**

#### **Background and Rationale**

Compared with the traditional notion of “linear, hierarchical, predictable, organization-centric careers”, career patterns nowadays are less predictable and more flexible considering the sweeping changes in information technology, globalization, demographic and immigration (Lent, 2013). In face of a new realm of workplace, how do

college students in their school-to-work transition better prepare themselves to face the upcoming challenges as well as opportunities?

As for university students, career exploration is of great importance to their career development process (Super, 1990; Blustein, 1997) especially considering the instability of today's work settings, the need for an on-going career appraisal in terms of oneself and one's career by taking the form of career exploration is necessary in career development. When encountered with career transitions in different life stages, career exploration appears to be a coping strategy that helps with extensive learning about oneself and other alternative careers (Greenhaus & Callanan, 2006).

Also, it is of great meaning to reduce students' career decision making difficulties and keep them on track of their career development. It is vital and constructive to have informative and practical career guidance in school before they enter the labor market; with a solid foundation of self-knowledge and informative occupational knowledge presented in career guidance, students will be more ready and adaptive for job satisfaction and later a sustainable and long-term development in the career path as their career choice is made based on a compatible match with their personal traits and work requirements. As for college students, they need to understand that career choice is not a merely particular decision they make upon graduation, it has far-reaching effects on their future life. Hence, what matters is how to make informed career decision out of various options.

#### Organization Background

The research is based on the third-year students in the International College of Zhejiang Yuexiu University of Foreign Languages. Based on a preliminary study, most students only had a vague plan of what they were going to do upon graduation—either furthering education undecided on a major or seeking employment without a decided occupation; only a few students thought about occupations they were going to pursue and made career decisions in accordance with their career goals. Given the reported demand for career decision making guidance, the research designed and conducted a career course focusing on career exploration to assist with students' career decision making, and emphasis was placed on self-appraisal and overall environmental exploration to help students make informed and proper career decisions and develop their confidence and beliefs in their ability to successfully navigate the tasks necessary to make a career decision, i.e., career decision making self-efficacy (CDMSE).

#### Research Objectives

- (1) To assess students' career exploration and career decision making self-efficacy at pre-ODI and post-ODI stage;
- (2) To design and implement effective organization development interventions (ODIs) to improve students' career exploration;
- (3) To measure the differences of students' career exploration and career decision making self-efficacy at pre-ODI and post-ODI stage between the control group and the experiment group.

## Research Hypothesis

Ha1: There is a significant difference of the experiment group's career exploration and career decision making self-efficacy between pre-ODI and post-ODI stage.

Ho1: There is no significant difference of the experiment group's career exploration and career decision making self-efficacy between pre-ODI and post-ODI stage.

Ha2: There is significant increase in experiment group's career exploration and career decision making self-efficacy after ODI compared with the control group.

Ho2: There is no significant increase in experiment group's career exploration and career decision making self-efficacy after ODI compared with the control group.

## Literature Review

### Career Exploration

Career exploration can be generally defined as self-appraisal activities and external search activities that provide individuals with information to foster progress in the selection of, entry into, and adjustment to an occupation (Jordaan, 1963; Stumpf, Colarelli, & Hartman, 1983). As a major scholar in the current study of career exploration, Blustein (1992) defined career exploration as activities aiming to "enhance the knowledge of the self and the external environment that an individual engages in to foster progress in career development".

Similarly, according to Greenhaus & Callanan (2006), career exploration is referred to as "a way of gathering information about self and the environment, with a goal of fostering progress and career development". It is also elaborated that there are two ways of career exploration: self-exploration and environmental exploration. In regard to self-exploration, it emphasizes "defining and exploring one's own interests, values, previous experiences and career goals". It is a way for individuals to have a deeper understanding of themselves. Individuals are expected to have a clearer picture of their interests, personality, abilities and work environment they are not interested in based on self-exploration. With respect to environmental exploration, it refers to "the investigation of various career options that an individual may consider pursuing at any point in his or her career". During environmental exploration, individuals are expected to collect information on jobs, organizations, occupations, or industries via online search, prints or other personal research so that they can make more informed career decisions. In terms of its measurement, Career Exploration Survey (CES) developed by Stumpf and his colleagues developed (Stumpf, Colarelli, & Hartman, 1983) is widely used in the field to measure different dimensions in career exploration.

### Career Decision Making Self-Efficacy (CDMSE)

The concept of career decision making self-efficacy (CDMSE), an extension of social learning theory (Hansen & Pedersen, 2012), was developed by Taylor and Betz (1983) and it specifically relates to how much one believes in his or her ability to successfully navigate the tasks necessary to make a career decision (Betz, 2001). Taylor and Betz also used the concept to create career decision making self-efficacy to assess students' self-

efficacy in term of career decision making after receiving a career intervention such as a career exploration course (Hansen & Pedersen, 2012). The scale consists of five sub dimensions to measure individual's self-appraisal, goal selection, occupational information gathering, plan making for the future, and problem solving (Betz & Hackett, 1983; Betz & Luzzo, 1996).

According to Taylor and Betz (1983), self-appraisal refers to receiving an accurate assessments of one's career interests, skills, personality and values; gathering occupational information involves exploratory and information search of occupations and job market; goal selection emphasizes on choosing career goals which can parallel with one's personal traits such as career interests, personality and values; plan making illustrates preparatory activities that assist individuals ready with job search and job application; problem solving assesses one's resilience when faced with occupational frustrations. The five subscales were based on Crites' (1978) work who pointed out that there are five necessary ingredients for good career decision making: accurate self-appraisal, gathering occupational information, goal selection, making future plans and problem solving (Reese & Miller, 2006). Based on Crites' research findings, Brown and Krane (2000) continued their research on critical ingredients of career decision making and concluded that effective career choice interventions should cover the following five areas: written exercise to record one's career goals, plans and occupational analysis, individualized feedback and interpretation of assessments from counselors, occupational information exploration, modeling or vicarious learning of career exploration and career decision making, and support building for career choice and planning.

### Cognitive Information Processing Model

Cognitive information processing model, proposed by Peterson, Sampson and Reardon (1991), is built on the thought and memory processes that are engaged in career problem solving and career decision making. The theory has three domains—knowledge, decision making skills and executive processing—which includes a hierarchical pyramid. The base part is knowledge domain which consists of self-knowledge and occupational knowledge and this part serves as the foundation for the upper ladder of domain. The middle part is called decision making skills which involve CASVE cycle referring to communication, analysis, synthesis, valuing and execution. In the apex of the pyramid is the executive processing domain, where meta-cognition such as self-control and self-talk is engaged (Peterson, Sampson, Reardon, & Lenz, 1996).

### Appreciative Inquiry

There have been many definitions of appreciative inquiry (AI), and according to one of the most frequently cited definitions, AI is referred as the “cooperative co-evolutionary search for the best in people, their organizations, and the world around them” (Cooperrider, Whitney, & Stavros, 2008, p.3). The explanation can also be illustrated as that human organizing and change is a relational process of inquiry, which is grounded in affirmation and appreciation (Whitney & Trosten-Bloom, 2010). As the simplest and the most commonly used visual when depicting AI process (Stavros, Godwin, & Cooperrider, 2015), the 4D cycle includes four phases: discovery, dreaming, designing, and destiny. In

specific, discovery phase refers to the determination of “what is the best”; dream phase indicates the imagination of what it could be; the phase of design means co-construction of what should be; and the last phase of destiny relates to empowerment, adjustment and innovation that brings the design into reality (Ludema & Mohr, 2003). Figure 1 depicts the relationship of each phase.

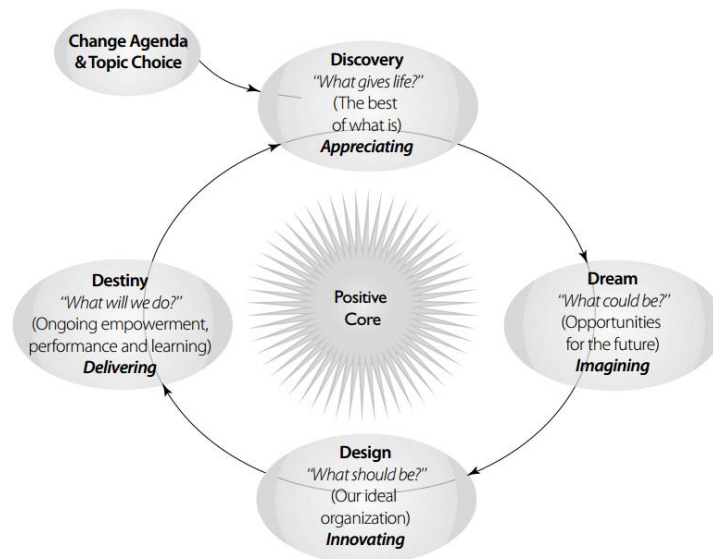


Figure 1. The Appreciative Inquiry 4-D Cycle. Source from Whitney, D. K., & Trosten-Bloom, A. (2010). *The power of appreciative inquiry: A practical guide to positive change* (2<sup>nd</sup> ed.). San Francisco, CA: Berrett-Koehler Publishers.

Theoretical Framework

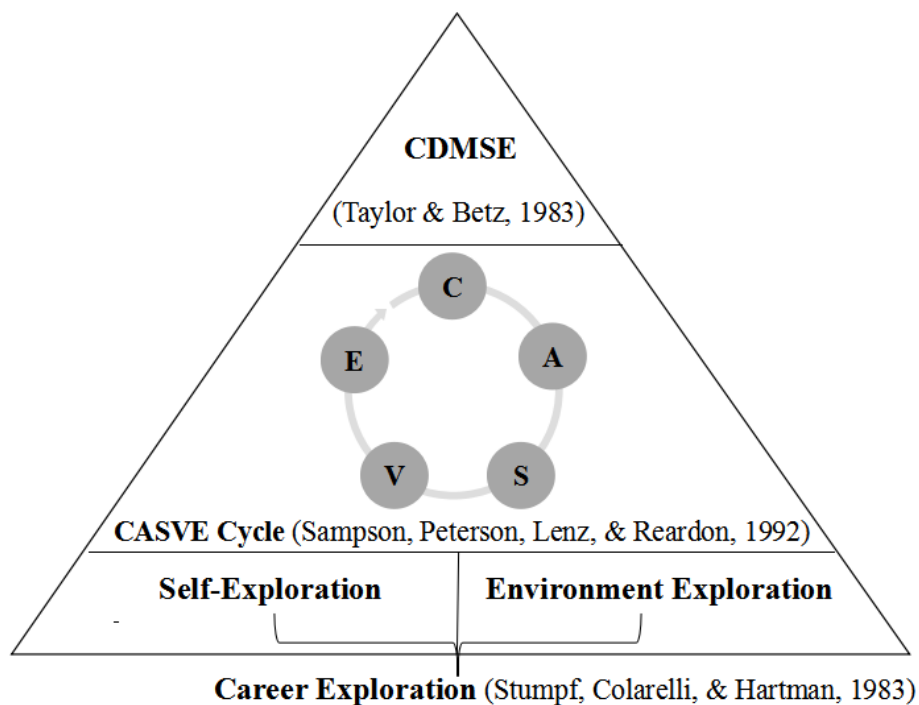
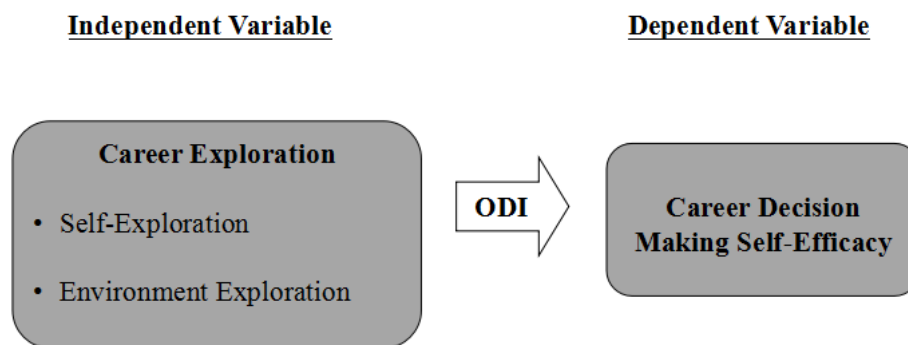


Figure 2. Theoretical Framework. Adapted from “A Cognitive Approach to Career Services: Translating Concepts into Practice,” by Sampson Jr, J. P., Peterson, G. W.,

Lenz, J. G., and Reardon, R. C. 1992, *The Career Development Quarterly*, 41(1), p.70.

Figure 2 indicates that the theoretical framework was adapted from cognitive information processing model (Sampson et al., 1992). The framework illustrates that career exploration, which includes self-exploration and environment exploration (Stumpf, Colarelli, & Hartman, 1983), serves as the base of the research. In the middle part, OD interventions follow the pattern of CASVE cycle (communication, analysis, synthesis, valuing and execution; Sampson et al., 1992) to assist with students' career decision making skills, and an application of OD tools, such as appreciative inquiry, Johari Window, team building, goal setting and plan making, is utilized during interventions. Career decision making self-efficacy (Taylor & Betz, 1983) lies in the apex of the pyramid.

### Conceptual Framework



*Figure 3. Conceptual Framework*

Figure 3 shows that the independent variable of this research is career exploration including self-exploration and environment exploration, and the dependent variable is career decision making self-efficacy. The research aims to improve students' career decision making self-efficacy by employing OD interventions to a career exploration course in terms of students' self-exploration and environment exploration.

### Action Research Framework

Figure 4 depicts the specific action research framework in this research and it shows that students' career exploration including self-exploration and environment exploration would increase after the implementation of ODI. In addition, students' career decision making self-efficacy would also enhance consequently.

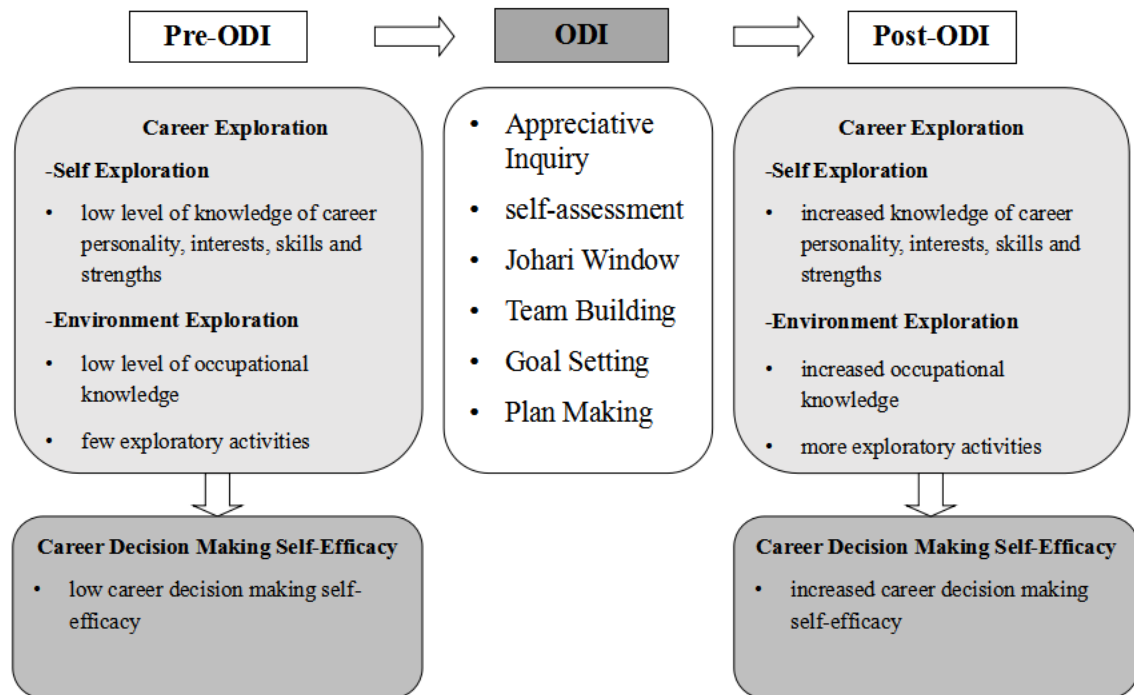


Figure 4. Action Research Framework

### Research Design and Methodology

Figure 4 depicts the action research framework demonstrating that the research process consists of pre-ODI, ODI and post-ODI stages.

#### Population

A control group (N=64) and an experiment group (N=64) were engaged in the research, and the participants from both groups were the third-year students in the International college. The experiment group took a one-hour non-credit career course once a week for 12 weeks; for comparison, the control group was not required to take the course and interventions.

#### Methods

Both qualitative and quantitative approaches were used for data collection and analysis in terms of students' career exploration and career decision making self-efficacy. Qualitative data were collected from 1) students' semi-structured periodical reports recording their progress in pre-ODI, ODI and post-ODI stages, 2) semi-structured interviews with head teachers, and 3) occupation interviews conducted by students. In addition, Quantitative data were collected from 1) a Chinese version of Career Exploration Scale (Xu, 2008) modified based on Career Exploration Survey (Stumpf, et al., 1983) and 2) a Chinese version of Career Decision Making Self Efficacy (CDMSE) Scale (Peng & Long, 2001) modified based on CDMSE (Taylor & Betz, 1983).

#### Pre-ODI Stage

In the pre-ODI stage, mixed methods were used to assess students' career exploration and career decision making self-efficacy.

In terms of qualitative data:

- Interview with head teachers—four head teachers (two from the experiment group and two from the control group) were interviewed to help the researcher have an overview of students' career exploration as well as career decision making self-efficacy at pre-ODI phase.
- Reflection report #1—it was assigned to the experiment group to write about their current knowledge in terms of career exploration and career decision making self-efficacy.

As for quantitative data:

- Questionnaires—students from both groups were asked to complete the online questionnaires of Career Exploration Scale and Career Decision Making Self Efficacy (CDMSE) Scale to reflect their pre-ODI state of career exploration and career decision making self-efficacy.

With respect to the introduction of the course:

- Course introduction lecture—a lecture was held to introduce the course content and help students have a better idea of the significance of taking the course.

### ODI Stage

The OD interventions consisted of two parts—self-exploration and environment exploration.

#### Self-Exploration

The following interventions were designed to help students improve their confidence in their strengths and discover their career personality and interests.

- Positive retrospection—Appreciative Inquiry was employed to help students reflect on their positive past experiences. It aims at boosting students' self-efficacy through their mastery experience and helping them discover their strengths and skills in certain areas.

Self-assessment tools were employed to enhance students' self-knowledge of career personality, interests and strengths.

- MBTI Test and Holland SDS Career Interest Inventory—students were asked to take the online assessments to assess their personality types and career interests. The results offered an overview of their personal traits and a list of recommended jobs or occupations compatible with their traits.
- Johari Window—students were asked to take an online Johari Window model to map out their personality in terms of their self-awareness and others' feedback. The results were presented in four areas: open area, blind area, hidden area and unknown area. Based on the window results, students were expected to gain a better perspective of how they were perceived in other people's eyes.



After self-exploration, it was designed to have students evaluate their progress in terms of self-knowledge.

- Reflection report #2—students were required to write about their self-knowledge in terms of personality, strengths and interests as well as the feedback from their classmates' perspectives. In general, students were expected to record their new perceptions about themselves based on the feedback from self-assessments and classmates' comments.

### Environment Exploration

During environment exploration, students were expected to explore a wide array of career options that they would like to consider in the near future. By collecting occupational information on jobs, organizations, occupations, or industries, they were encouraged to conduct an in-depth exploration and narrow down their career options so that they were able to make more informed and effective career decisions. The following interventions were involved.

- Team building—students with different personality types were arranged to build teams. Team building is an effective approach to help students navigate more career options within groups.
- Information gathering—each team member was responsible for collecting occupational information based on assignments within groups.
- Information sharing—each team member shared what he/she researched within groups, and all groups were required to make a group presentation in class to share their integrated knowledge and information about occupations.
- Goal setting—based on the group presentations, students had various feedback of career options. It was time to narrow down their options and set occupational goals to reach their final decisions.
- Plan making—each team member was required to make plans about how to achieve their goals and what they were going to do to narrow down their choices.
- Occupation interview— during the in-depth environment exploration, students were required to conduct an occupation interview with someone in the profession they had interests in. Afterwards, an interview report was required to describe occupational information they gathered and new knowledge they learned from the interviewee.
- Reflection report #3— students were required to write a report about their current knowledge about their preferred occupations based on self-assessments, group discussions and presentations.
- Evaluation—when students reached their career decisions for the near future, they were required to evaluate whether the choice fit their strengths, needs and interests overall. If satisfaction did not occur, they should restart the exploration cycle and continue the exploration until they reached their satisfactory choice. OD is a process of reflective learning (Lu, 2015).

### Post-ODI Stage

In the post-ODI stage, qualitative and quantitative data were collected again in terms of students' career exploration and career decision making self-efficacy.

In terms of qualitative data:

- Interview with head teachers—interviews with head teachers from both groups were conducted to obtain information about students' exploratory activities and career decision making self-efficacy after ODI. It served as secondary data to help the researcher gain knowledge of students' progress after ODI.
- Reflection report #4—students in the experiment group were assigned a report after ODI to comment on the course and record their gains and progress in career exploration and career decision making self-efficacy.

As for quantitative data:

- Questionnaires—students from both experiment and control groups were asked to complete the online questionnaires of Career Exploration Scale and Career Decision Making Self Efficacy (CDMSE) Scale to reflect on their post-ODI state of career exploration and career decision making self-efficacy.

#### Data Collection and Analysis

The primary data in this research were collected via online questionnaires, periodical reflection reports, and occupation interviews. Secondary data from head teacher interviews served as supportive evidence considering students' improvement in career exploration and career decision making self-efficacy.

The data analysis in the research was divided into two parts—qualitative analysis and quantitative analysis. In terms of qualitative analysis, a qualitative analysis program was employed to compute qualitative data to show the progress in students' career exploration and career decision making self-efficacy. Considering quantitative analysis, the results from the online questionnaires before and after ODI were analyzed by the statistical analysis tool. Students' career exploration and career decision making self-efficacy were measured in terms of frequency, percentage, means and standard deviation. A paired samples t-test was employed to find statistical differences between pre-ODI and post-ODI.

### **Findings**

**Research Objective One:** To assess students' career exploration and career decision making self-efficacy at pre-ODI and post-ODI stage

Qualitative data from head teacher interviews and students' reports are presented as follows.

As for the feedback from headteacher interviews, pre-ODI and post ODI results presented that there was an increase for the experiment group with respect to career exploration and career decision making. Before ODI, there were no students from both groups attending career activities before ODI, while two students in the control group and six students in the experiment group attended job fairs after ODI. In addition, there was only one student in the experiment group asking about job openings, by contrast, there

were two students in the control group and three students from the experiment group asking for job positions after ODI. In terms of students who were taking actions for their career goals, there was one student in each group before ODI, while there were four students in the experiment group who were taking actions pursuing for his career goals and none in the control group.

In regards to feedback from students' reports at pre-ODI and post-ODI stage, it showed that 57 students (89.1%) confirmed their progress in self-exploration and 44 students (68.8%) recognized their improvement in environment exploration after ODI. In addition to occupational decisions, 40 students (62.5%) confirmed their occupational choices after ODI compared with 27 students (42.2%) before ODI. In terms of overall evaluation of the course, 55 students (85.9%) confirmed the positive significance of the course.

Quantitative feedbacks of students' career exploration and career decision making self-efficacy at pre-ODI and post ODI stage are displayed as follows.

Table 1

*Career Exploration from Control Group and Experiment Group at Pre-ODI stage*

Dimension	Control Group (N=64)			Experiment Group (N=64)		
	Mean	SD	Interpretation	Mean	SD	Interpretation
Environment Exploration	2.41	0.79	Low	2.13	0.69	Low
Self-Exploration	2.86	0.81	Moderate	2.73	0.78	Moderate
Total	2.61	0.73	Moderate	2.40	0.70	Low

Table 2

*Career Exploration from Control Group and Experiment Group at Post-ODI stage*

Dimension	Control Group (N=64)			Experiment Group (N=64)		
	Mean	SD	Interpretation	Mean	SD	Interpretation
Environment Exploration	2.55	0.77	Moderate	2.91	0.71	Moderate
Self-Exploration	2.93	0.81	Moderate	3.35	0.70	Moderate
Total	2.72	0.74	Moderate	3.11	0.67	Moderate

Table 1 and Table 2 present students' level of career exploration in terms of environment exploration and self-exploration before and after ODI. In terms of pre-ODI stage, it is concluded that the control group reached a moderate level of 2.61 whereas the experiment group received a low score of 2.40 in career exploration. Considering post-ODI stage, the control group got 2.72 while the experiment group reached 3.11 in career exploration. In terms of environment exploration, the experiment group scored 2.91, which was higher than 2.55 in the control group; similarly, the experiment group also had a better performance in self-exploration, which was 3.35 compared with 2.93 in the control group.

Table 3

*Career Decision Making Self-Efficacy from Control Group and Experiment Group at Pre-ODI stage*

Dimension	Control Group (N=64)			Experiment Group (N=64)		
	Mean	SD	Interpretation	Mean	SD	Interpretation
Self-Appraisal	2.92	0.84	Moderate	2.83	0.77	Moderate
Gathering Occupational Information	2.69	0.68	Moderate	2.56	0.72	Moderate
Goal Selection	2.87	0.84	Moderate	2.91	0.76	Moderate
Planning Making	2.98	0.82	Moderate	3.04	0.77	Moderate
Problem Solving	2.99	0.83	Moderate	3.03	0.77	Moderate
Total	2.88	0.71	Moderate	2.86	0.66	Moderate

Table 4

*Career Decision Making Self-Efficacy from Control Group and Experiment Group at Post-ODI stage*

Dimension	Control Group (N=64)			Experiment Group (N=64)		
	Mean	SD	Interpretation	Mean	SD	Interpretation
Self-Appraisal	2.92	0.83	Moderate	3.26	0.79	Moderate
Gathering Occupational Information	2.91	0.76	Moderate	3.16	0.71	Moderate
Goal Selection	3.08	0.73	Moderate	3.24	0.75	Moderate
Planning Making	3.14	0.75	Moderate	3.27	0.75	Moderate
Problem Solving	3.19	0.73	Moderate	3.29	0.73	Moderate
Total	3.05	0.67	Moderate	3.24	0.68	Moderate

In terms of pre-ODI stage, Table 3 displays that the total mean score of students' CDMSE was moderate for both groups, which was 2.88 in the control group and 2.86 in the experiment group. In terms of overall performance, both groups reached a moderate level for five dimensions, and the highest mean score was 2.99 for problem solving and the lowest was 2.69 for gathering occupational information in the control group, while the highest mean score was 3.04 for plan making and the lowest was 2.56 for gathering occupational information in the experiment group.

In regard to the post-ODI stage, Table 4 shows that two groups remained the same at the moderate level, which was 3.05 for the control group and 3.24 for the experiment group. In terms of overall performance, two groups reached a moderate level for five dimensions, and it applied to both groups that problem solving reached the highest score (3.19 in the control group and 3.29 in the experiment group) while gathering occupational

information received the lowest (2.91 in the control group and 3.16 in the experiment group).

Research Objective Two: To design and implement effective organization development interventions (ODIs) to improve students' career exploration;

Based on the qualitative feedback from students' reports after self-exploration, it revealed that ODI had a positive impact on students' knowledge of personal traits. To be specific, 61 students (95.3%) made positive comments on self-assessments in terms of career guidance, career personality identification, and occupational recommendation. In terms of Johari Window, it showed that 48 students (75%) gained new perspective of their personality from their classmates. By the end of self-exploration, it indicated that 53 students (82.8%) believed they gained a new self-discovery while 11 students (17.2%) reported they did not have any new insights of themselves.

In terms of qualitative feedback after environment exploration, students' reports presented that the top three occupations they would consider were teachers (54.7%), shop owners (21.9%), and foreign trade businessmen (20.3%). With respect to factors students would consider when making occupational choices, their top concerns were salary, interest and location, which had 20 (31.3%), 16 (25%), and 9 (14.1%) respondents respectively. In regard to how students would narrow down career choices, the most common answers were to choose based on interest (32.8%), qualifications (15.63%), and salary (12.5%). In terms of occupation interview, reports indicated that 52 students (81.3%) found it meaningful considering interviewees' suggestions, required personal traits in the profession, and employment qualification. Also, it showed that 53 students (82.8%) saw the relatedness of the occupation to their career interests while the remaining 11 students (17.2%) found it incompatible after the interview.

Based on the research design and students' feedback during ODI, a proposal of effective ODIs for career exploration course is illustrated as follows.

Table 5

*A Proposal of Effective ODIs for Career Exploration Course*

Time	ODI	Objective	Expected Outcome
Week 1	ODI Introduction (Report 1)	*To inform students of ODI introduction and the following ODI activities *To have students record their current state of career exploration and career decision making self-efficacy	*Students understand the process and the significance of ODI. *students record their initial state of career exploration and career decision making self-efficacy.
Week 2	Self-assessments (MBTI, SDS Inventory)	*To explore and identify students' occupational interests, personality and strengths with assessment tools	*Students have clearer perception of their personal traits and career goals.

Week 3	Positive Introspection and Peer feedback (Appreciative Inquiry, Johari Window, Report 2)	*To reflect on positive past experiences and take peer feedback of one's personality and strengths from classmates *To record their gains in self-exploration	*Students are better informed of their strengths and traits from different views. *Students record their progress after self-exploration.
Week 4	Team Building	*To build teams based on different personality types	*Each team has diverse inputs during discussion.
Week 5	Information Gathering	*To discuss and collect occupational information within groups	*Students have a broader idea of certain occupational areas.
Week 6-7	Information Sharing	*To have each team present and share their occupational findings of different professions in class	*Each team has a wider knowledge of different occupations.
Week 8	Goal Setting	*To have students prioritize their options and set up occupational goals	*Students have clearer idea of what suitable areas they can engage in.
Week 9	Plan making	*To have students consider how to narrow down their occupational choices and make plans	*Students make plans of how to achieve occupational goals.
Week 10	In-depth environment exploration	*To have students explore in-depth about more occupational information	*Students have more specific information related to their goals.
Week 11	Occupation interview (Occupation Report, Report 3)	*To have students conduct occupation interview with someone who works in the area that students are interested in *To reflect their gains in environment exploration	*Students have a better insight of employment requirement and trends in this occupation. *Students record their progress after environment exploration.
Week 12	ODI Evaluation (Report 4)	*To have students evaluate their progress in career exploration	*Students reflect their gains in self-knowledge and occupational information.

Research Objective Three: To measure the differences of students' career exploration and career decision making self-efficacy at pre-ODI and post-ODI stage between the control group and the experiment group.

Table 6 and Table 7 demonstrate the difference of career exploration for both groups at pre-ODI and post-ODI stage. It is clearly noted that the control group gained a slight improvement from 2.61 to 2.72 while the experiment group elevated markedly from 2.40 to 3.11, the statistical significance of experiment group could also be confirmed from the p-value of 0.000 in paired t-test.

Table 6  
*Difference of Career Exploration from Control Group between Pre-ODI and Post-ODI stage*

Control Group (N=64)								
Dimension	Pre-ODI		Post-ODI		Paired t-test			
	Mean	SD	Mean	SD	t	df	Sig. (2-tailed)	
Environment Exploration	2.41	0.79	2.55	0.77	-1.278	63	.206	
Self-Exploration	2.86	0.81	2.93	0.81	-.592	63	.556	
Total	2.61	0.73	2.72	0.74	-1.065	63	.291	

Table 7  
*Difference of Career Exploration from Experiment Group between Pre-ODI and Post-ODI stage*

Experiment Group (N=64)								
Dimension	Pre-ODI		Post-ODI		Paired t-test			
	Mean	SD	Mean	SD	t	df	Sig. (2-tailed)	
Environment Exploration	2.13	0.69	2.91	0.71	-6.652	63	.000	
Self-Exploration	2.73	0.78	3.35	0.70	-4.680	63	.000	
Total	2.40	0.70	3.11	0.67	-6.008	63	.000	

Note. Sig. <0.01

Table 8 and Table 9 display the difference of CDMSE for both groups at pre-ODI stage and post-ODI stage. It indicates that two groups improved to different extent. There was a slight improvement from 2.88 to 3.05 for the control group, and a greater progress was noted from 2.86 to 3.24 in the experiment group. The statistical improvement of the experiment group could be interpreted from the p-value of 0.002 in t-test, which is an indicator of high significance. However, two subscales—plan making and problem solving—did not achieve significant improvement in the experiment group.

Table 8

*Difference of Career Decision Making Self-Efficacy from Control Group between Pre-ODI and Post-ODI stage*

Dimension	Control Group (N=64)					
	Pre-ODI		Post-ODI		Paired t-test	
	Mean	SD	Mean	SD	t	df Sig. (2-tailed)
Self-Appraisal	2.92	0.84	2.92	0.83	-.058	63 .954
Gathering Occupational Information	2.69	0.68	2.91	0.76	-1.951	63 .055
Goal Selection	2.87	0.84	3.08	0.73	-1.489	63 .142
Planning Making	2.98	0.82	3.14	0.75	-1.201	63 .234
Problem Solving	2.99	0.83	3.19	0.73	-1.460	63 .149
Total	2.88	0.71	3.05	0.67	-1.498	63 .139

Table 9

*Difference of Career Decision Making Self-Efficacy from Experiment Group between Pre-ODI and Post-ODI stage*

Dimension	Experiment Group (N=64)					
	Pre-ODI		Post-ODI		Paired t-test	
	Mean	SD	Mean	SD	t	df Sig. (2-tailed)
Self-Appraisal	2.83	0.77	3.26	0.79	-3.235	63 .002
Gathering Occupational Information	2.56	0.72	3.16	0.71	-4.818	63 .000
Goal Selection	2.91	0.76	3.24	0.75	-2.617	63 .011
Planning Making	3.04	0.77	3.27	0.75	-1.858	63 .068
Problem Solving	3.03	0.77	3.29	0.73	-1.956	63 .055
Total	2.86	0.66	3.24	0.68	-3.251	63 .002

### Hypothesis Testing

Ha1: There is a significant difference of the experiment group's career exploration and career decision making self-efficacy between pre-ODI and post-ODI stage.

Ho1: There is no significant difference of the experiment group's career exploration and career decision making self-efficacy between pre-ODI and post-ODI stage.

Table 7 presents that the performance of career exploration in the experiment group reached a significant progress, which could be shown from the p-value of 0.000. In terms of career decision making self-efficacy, Table 9 indicates that the p-value of significance for the experiment group reached 0.002, which was a positive sign for significant improvement. It could be concluded that there is a significant difference of the experiment group's career exploration and career decision making self-efficacy between pre-ODI and post-ODI stage. Therefore, Ho1 is rejected.



Ha2: There is significant increase in experiment group's career exploration and career decision making self-efficacy after ODI compared with the control group.

Ho2: There no significant increase in experiment group's career exploration and career decision making self-efficacy after ODI compared with the control group.

Table 6 and Table 7 show that the statistical significance of experiment group's career exploration was achieved based on the p-value of 0.000 in paired t-test, while the significance level for the control group only reached at 0.291, which was interpreted as not significant. Considering career decision making self-efficacy in Table 8 and Table 9, the improvement degree of the experiment group was highly significant, which could be interpreted from the p-value of 0.002 in paired t-test, while the control group received 0.139 in t-test. It could be concluded that there is significant increase in experiment group's career exploration and career decision making self-efficacy after ODI compared with the control group Therefore, Ho2 is rejected.

### **Conclusion and Recommendation**

In general, the research found satisfactory improvement in terms of students' career exploration and career decision making self-efficacy after ODI, which lends support to the notion that the course-based OD interventions are successful in increasing students' career exploration and career decision making self-efficacy.

The findings provided useful information for the researcher that the ODI design and implementation assisted with students' CDMSE in general effectively. In terms of distinctive ODI contributions, it can be concluded from students' feedback that self-assessments and Johari Window provided effective information in light of career personality, career interests, job recommendations and self-perception. In addition to occupational knowledge, students' reports demonstrated the significance of occupation interviews in offering required personal traits and employment qualifications in a particular profession. However, it is unclear that which ODI served as the most effective contributor to students' CDMSE, and how other OD interventions may have interacted with students' CDMSE. To address this issue, future studies can introduce career counselling and evaluation after each intervention to known about the actual mechanisms that bring about the change.

With respect to the 12-session career exploration course, both qualitative and quantitative data demonstrated its general effectiveness in career exploration and CDMSE, which can be concluded that the course design is well-reasoned in regard to the components of self-exploration and environment exploration. Despite the significant increase in CDMSE in general, it can be noted that plan making and problem solving, two subscales under CDMSE, did not achieve significant improvement after ODI, which suggests that more emphasis is needed to place on CDMSE-related tasks in the course design, such as empirical methods to help students develop step-by-step plan making procedures together with more detailed instructions concerning job application process. Based on Brown and Krane (2000)'s five critical ingredients in effective career choice interventions that the researcher has stated before, the researcher still needs to introduce professional consultancy to assist with students' individualized feedback and

interpretation. In light of vicarious learning or modeling, more efforts should be spared to connect students with alumni who can serve as career models or mentors as well as interviewees when students conduct occupation interviews.

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