

How Career Interventions and Digital Career Counselling Affect Students' Career Maturity

(A Systematic Review)

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Abstract—Career maturity is a reflection of an individual's career development process to increase capacity in making future career decisions. This study analyses how career intervention and digital career guidance can affect the development of career maturity of high school students. This study uses a systematic literature review research design, where the author tries to find relevant articles to answer research problems. The article search process uses 3 search strategies with 6 inclusion and exclusion criteria. In the end, the author got 9 articles in 8 different journals published by 3 international journal publishers. The findings in this study indicate that career intervention has a significant influence on the development of career maturity, especially in the aspect of students' career knowledge. Meanwhile career counselling that is built in digital version is very effective in helping students to make career decisions.

Keywords—career maturity, career intervention, digital career counselling

I. INTRODUCTION

The development of career maturity is a long individual process including physical, cognitive and emotional which is influenced by psychological and social factors [1]. Savickas [2] describes career maturity as attainment of the overall development of a vocational task. Career maturity is a reflection of an individual's career development process to increase the capacity to make career decisions [3]. In fact, career planning and individual decision making must begin when students are in school because school is a place to develop talents, abilities, interests, and personality [4]. Besides, career maturity is an important element for students in school environment to find knowledge about their profession in the future [5] so that having a good level of career maturity will help them in planning the right career in the future. In Super career development theory [6], individuals develop vocationally as one aspect of their overall development which is influenced by the conditions around them. The internal factors of career development for students include the values of life that they follow, level of intelligence, special talents possessed, interests, nature, gender, physical condition [7,8].

While the external factors are family, society (socio-cultural environment), information technology, socio-economic status, influence and expectations from families, education, friendship, and the demands attached to each job [9].

The ability of students to obtain information on the field of work will also be a challenge in the development of career maturity [10]. The current rapid flow of digital information has had positive and negative effects on students' career choices [11]. This is because so far students are also moving smoothly in the online space for their school and social life [12], so the information available on the internet also has an important role in the formation of students' knowledge of the world of work. Levine' research [13] shows that the internet actively provides various types of information *vocational anticipatory socialization* as a source of career information. Meanwhile, Poh Li [4] found that the exploration system and career intervention in schools had a positive effect on students' career maturity. Another studies on the effect of career exploration on students' career maturity showed a very significant positive relationship [14].

Career maturity development is a research topic that has been widely carried out in recent years and is an initial provision in developing students' careers in the future. This study tries to reveal the effect of career intervention and online career counselling on the development of students' career maturity by conducting a literature study of articles from 2015 to 2020. This paper also provides summaries and criticisms of the topics and research methods used. Furthermore, researchers use this information to identify and answer research problems and provide guidance on future career maturity research.

II. LITERATURE

Maturity is the readiness of one's soul in the process of development [15]. Career maturity is an aspect that needs to be owned by the students for a better career in the future. John O. Crites [16] defines career maturity as an individual's ability to make career choices, which include making career decisions, realistic and consistent. Career maturity is also defined as an

adolescent's success and readiness to fulfill organized tasks contained in each stage of career development [17]. According to career maturity theory of *Super*, each individual age level has a role that must be carried out according to the stage of development [18]. So that career maturity can be interpreted as an individual's ability to make career choices by completing tasks and roles that are in accordance with the stage of development. Donald E. Super [19] developed 6 dimensions of adolescent career maturity as follows:

A. *Career Planning*

This dimension measures the level of planning through the attitude towards the future to make a choice as a description of the final stage of the career development process.

B. *Career Exploration*

This dimension measures attitudes towards sources of information about the world of work as well as use the opportunity and the potential resources such as parents, friends, teachers, and counselors.

C. *Career Decision Making*

This dimension measures knowledge about the principles and ways of making decisions in the process of choosing a job path.

D. *World of Work Information*

This dimension measures knowledge about the types of work, ways to obtain and succeed in work and roles in the world of work.

E. *Knowledge of Preferred Occupational Group*

A good career is formed through a good career selection process. In this case, students are given the opportunity to choose one of several job options, then ask questions related to the job.

F. *Realization*

Realization career decision is a comparison between the ability of individuals to career options realistically work.

According to Naidoo [20] there are several factors that affect individual career maturity. They are: educational level (higher education shows higher career maturity), race ethnicity (minority ethnic indicates lower career maturity), locus of control, social economic (high level of social economic improve career maturity), work salience and gender (women shows a better career maturity than man).

III. METHODOLOGY

A. *Search Strategy*

In identifying eligible articles, the author uses three strategies. Firstly, the author searches for articles on the top three publishers in the field of education (Elsevier, Taylor and

Francis and SAGE Publications). The search used keywords "career maturity", "career interventions" and "online career counseling" in any field and limited the search to the period January 2015 to December 2021, this yielded 354 articles. Secondly, the author conducted searches using different keywords but have the same meaning. This is to ensure that there are articles which relevant to the research objectives. The author uses keywords such as "career information" or "career services". This search resulted in 6 articles. The last one author tried to find articles citing the theory of career maturity by Donald E Super in 1955. The search yielded 49 articles. The use of these various strategies was helpful in ensuring that all studies entered were eligible.

B. *Inclusion / Exclusion Criteria*

The author identified 6 inclusion criteria that will be used in this research. This criterion was inspired by a previously conducted systematic literature review [21,22].

- Centrality of topic: Career maturity and career interventions should be the main focus of the article, meaning that the author will exclude studies that put career intervention and career maturity not as the main topic.
- Respondents: The research subjects must be students of secondary education (SMA and SMK). This means that the author excludes studies where the respondents in the study are not students in the high school group.
- Design of study: The authors included empirical and theoretical studies, as the authors were interested in seeing how the concept of career maturity was defined in both types of research.
- Year of publication: The authors included all studies published in the period of January 2015 to December 2020.
- Language: Authors only include studies written in English;
- Publication status: The has been reviewed and published in reputable journals.

C. *Selection Process for Inclusion of Articles*

The authors systematically screened 409 studies, which were identified using three search strategies described above. Based on the inclusion/exclusion criteria, a study was finally obtained in the final analysis. The selection process is depicted in Figure 1.

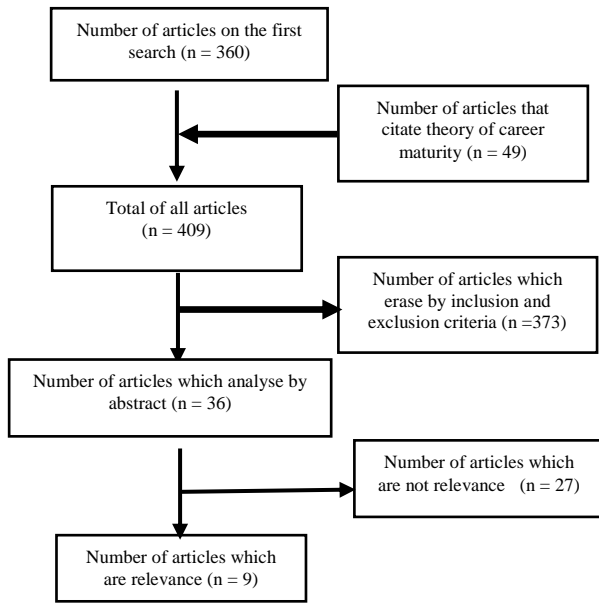


Fig. 1. Selection process.

Firstly, the author found as many as 409 articles using the three search strategies. Then the authors filtered all the titles of the articles using the diagram selection stages above and excluded 373 studies that did not suitable as criteria based on the title of the article. This process leaves a total of 36 articles. Next, the author screened the studies by reading the complete abstracts of all the articles. In this step, the author excludes 27 articles mainly because the concept of career maturity is not the main topic and the respondents used are not from high school students. This is to ensure the focus of this study on the effect of career interventions and digital career counselling on the development of career maturity of high school students. So that this selection process resulted in 9 articles which would then be analyzed in this study.

IV. RESULTS AND DISCUSSION

A. Journals and Publishers

The selection process of articles carried out by the author resulted in 9 studies. Referring to the inclusion and exclusion criteria, all articles in this study raised the topic of career maturity in secondary education as the focus of research. The article data that became the author's findings are presented in the following table.

TABLE I. JOURNALS AND YEAR OF PUBLICATION

Code of Articles	Title of Articles	Journal	Publisher	Year
CM 02	The impact of a career intervention programmed on South African Grade 11 learners' career decision-making self-efficacy	South African Journal of Psychology	SAGE	2017
CM 03	Effects of a Career Exploration Intervention on Students' Career Maturity and Self-Concept	Journal of Career Development	SAGE	2019
CM 04	Outcomes of Career Information System Utilization Among First-Year High School Students	Journal of Career Development	SAGE	2020
CM 06	High school students' educational and career interest (science-technology-mathematics) and career adaptabilities	Australian Journal of Career Development	SAGE	2015
CM 08	Effects of a group coaching for the vocational orientation of secondary school pupils	An International Journal of Theory, Research and Practice	Taylor And Francis	2016
CM 12	How can a relevance intervention in math support students' career choices?	Journal of Applied Developmental Psychology	Science Direct	2020
CM 13	Effectiveness of a web-based acceptance and commitment therapy program for adolescent career preparation: A randomized controlled trial	Journal of Vocational Behavior	Science Direct	2021
CM 14	Design and development of the online career counselling: a tool for better career decision making	Behaviour & Information Technology	Taylor And Francis	2020
CM 15	Main and Moderating Effects of an Online Transition Curriculum on Career Readiness	Career Development and Transition for Exceptional Individuals	SAGE	2020

From the table 1 above, it can be seen that 9 The study was published by 3 reputable and Scopus indexed journal publishers, namely *Elsevier*, *Taylor and Francis* and *SAGE Publications*. The nine studies were published in the journal *South African Journal of Psychology* [23], *Journal of career development* [4,14], *Australian journal of career development* [24], *An International Journal of Theory* [25], *Journal of Applied Developmental Psychology* [26], *Journal of Vocational Behavior* [27], *Behavior & Information Technology* [28] and *Career Development and Transition for Exceptional Individuals* [29].

B. Design, Location and Research Subjects

The following table 2 presents the location, research design used by the authors and the participants involved in the study.

TABLE II. DESIGN OF STUDY AND PARTICIPANT

Code of Articles	Design of study	Country	Participant
CM 02	Quasi-experimental design,	South of Africa	222 High School Students
CM 03	Quasi Experimental Design (pretest and posttest with control group)	Malaysia	139 High School Students
CM 04	Quantitative with a quasi-experimental approach	USA	385 of 9 th grade students
CM 06	Descriptive quantitative.	Turkey	702 High School Students
CM 08	Quasi-Experimental Design	Germany	102 High School Students
CM 12	Quasi-Experimental Design	Germany	1744 High School Students
CM 13	Quasi Experimental Design	Finlandia	High School Students of 9 th grade
CM 14	Quasi experimental with 3 groups (2 treatment groups and 1 control group)	Iran	49 High School Students
CM 15	Respondents were assigned to online counseling, face-to-face groups, and control groups to compare their career decision	USA	816 High School Students grade 9 - 12

Among 9 articles which studied in this paper, 89% of the articles used a quasi-experimental design (n=8) and 1 study used descriptive quantitative design. This illustrates that most researchers want to see the effect of intervention and career guidance on students' career maturity by giving treatment to the experiment class and then comparing the research data with the control class. This type of research design will provide fairly accurate data and will greatly assist researchers in answering research questions. During literature review authors did not find any studies that used qualitative design research design or mixed methods).

Most of the quantitative methods in studies that use test instruments for data collection. As in the study [23], measurements were made on the pretest, post-test of 222 students using a career decision-making effectiveness scale. Then research [4] conducted a study to measure career exploration interventions using multivariate analysis and found a significant difference between career maturity and self-efficacy. Another quantitative study with a quasi-experimental design was also carried out by measuring the effect of career intervention on conditions before and after the intervention [14,27–29]. Meanwhile, the descriptive quantitative research conducted by [24] was carried out by spreading the questionnaire to the respondents and then processing the data using analysis of variance (ANOVA) and then describing the scores to answer the research problem. When viewed from the research location, the most studies on the effect of intervention and digital career guidance were mostly carried out in the United States [14,29] and Germany [25,26], which were 22% each. The other 5 studies were conducted in Turkey, South Africa, Iran, Finland and Malaysia, respectively.

C. Objectives and Research Findings

The following table 3 presents the author of the article, the purpose and the research findings.

TABLE III. OBJECTIVES AND RESEARCH FINDINGS

Code of Articles	Objectives	Findings
CM 02	Determine the effect of career intervention programs derived from Social Cognitive Career Theory on self-efficacy of student career decision making	Career decision making and self-efficacy in the intervention group significantly improved through the career intervention program.
CM 03	This study investigates the effects of CAREER EXPLORATION INTERVENTION (CEI) on career maturity and self-concept among Malaysian high school students	Career maturity and self-concept of students increase significantly after getting CEI
CM 04	tested the effect of Career Information System (CIS) on ninth graders in improving self-efficacy, students' vocational skills, and overcoming career decision-making difficulties.	Career intervention function is not influenced by gender and socioeconomic status. Career information systems are able to increase students' career expectations and minimize decision making difficulties
CM 06	find out differences in student career interest scores by gender and grade level, and see the relationship between career interest and career adaptation	There is a significant difference in career interest between grade levels but not with student gender. Career interest and career adaptability show a significant positive relationship

Table 3 cont.

CM 08	examine the effects of career coaching programs conducted in groups for the vocational orientation of German secondary school students.	Career coaching programs can be a helpful intervention for youth vocational orientation.
CM 12	investigate the relevance of the usefulness of mathematics to students' lives and career choices	the intervention fosters students' perceptions of the importance of mathematics and physics for their careers
CM 13	Investigating the effects of the Youth Compass Program (an online-based ACT intervention) on youth career preparation	ACT-based online intervention programs have potential to promote youth career preparation.
CM 14	Designs online career counseling tools and provides services and guidance to students in career fields.	Online career counseling can be used as an educational center that treats students to prepare them to make a career
CM 15	examined the main effects of an online transition curriculum intervention on students' career readiness.	All students who received the intervention showed higher career readiness scores compared to those who did not receive the intervention.

Career intervention program designed by Jean [23] has an influence on students' career decision making, because it helps increase students' self-efficacy. The same thing was also investigated by Poh li [4] that students' career maturity also increased after getting a career exploration intervention. The career intervention function is not influenced by gender and socioeconomic status of students [14,29] but is very effective in helping students increase their confidence to make the right career decisions [25]. Online career counseling is one of the most effective breakthroughs in helping students to build career maturity. This counseling can be carried out in the form of online guidance [27] or through integration into the online curriculum [29]. The method can serve as an educational center in assisting students in finding their vocational orientation [26] and preparing for their future career [28].

D. Discussion

John O. Crites [16] defines career maturity as the ability to make career choices, which include making career decisions, realistic and consistent choices. Career maturity is a top priority for adolescents in choosing and preparing to enter the career world well [4] Some of the studies discussed in this study provide a significant picture of the effect of career guidance and intervention in increasing self-efficacy, and fostering student perceptions of the importance of preparing themselves. in facing the world of work so that they are better prepared in making career decisions. Meanwhile career guidance and digitally designed curriculum provide wider and more flexible access for students to build their career knowledge. This is in accordance with the characteristics of today's students, where they spend a lot of time in the digital world for their school and social life [12,14]. Unfortunately, the influence of intervention and career guidance in this study

focuses on the study of students' readiness in making career decisions as a measure of student career maturity. Meanwhile, Donald E. Super [19] developed 6 dimensions of career maturity and one of them is the ability to plan a career (career planning). If the six dimensions can be seen in research on career maturity, of course the findings in the study will be more complete so that it will be very useful for research on student career interventions in the future.

V. CONCLUSION

The development of students' career maturity during secondary education is influenced by career intervention programs and student career guidance. As a *digital native student*, they are well versed in the digital world by frequently engaging in the use of information and communication technology in accessing various sources of job information [30]. The influence of career intervention and career exploration guidance in schools also affects the development of students' career maturity. Spokane and Oliver [31] describe career intervention as any treatment or undertaking intended to enhance an individual's career development or to enable the person to become better at career decision making. The use of information and communication technology in students' career interventions will increase students' understanding in exploring careers which in turn will increase students' career maturity so that it will help them in planning a better career in the future.

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