

## The Model of ICT-Based Career Information Services and Decision-Making Ability of Learners

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### ABSTRACT

One of the impacts of information technology in guidance counseling is in the implementation of the support system. Entering the world of globalization and rapid technological breadth of information requires counseling to adjust to the environment in order to meet the needs of learners. Therefore, cyber-counseling is now developing. It is one of the utilization of information technology in the world, especially the provision of counseling services of career information for the learners. The issue that need to be answered in this research is "how is the model of ICT-based career information service that is interesting, acceptable, based on the accuracy, feasibility, and utility to improve career decision-making ability of the learners developed?" This research aims at finding out a model of ICT based-career information services that can be used to help learners in improving their carrier decision-making. The method used was the Research and Development (R & D) through several steps. Techniques and data collection instruments were questionnaires, observations, and tests. Data analysis technique used was qualitative and quantitative analysis. Based on the data analysis, it is found that t value is 40.79 with df = 149. The t table value is 1.645 with the significance level (P) = 0,000 <  $\alpha$  = 0.05. Therefore, the hypothesis stating that "there is a significant effect on improving career decision-making of the learners after the implementation of the service model of ICT-based career information to the Senior High School students in Parepare" is accepted.

### KEYWORDS

career information; ICT; decision-making; learners

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## Introduction

ASEAN Economic Community (AEC) in 2016 has been occurred. It means that the Indonesian labor force must also be prepared to face global competition. The issue of labor force in Indonesia is still a major problem that is unresolved. Therefore, a right solution to solve the problem is still needed. The highest level of education that is most experienced

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unemployment is the learners who graduated from senior high school. Therefore, a special handling is needed to reduce unemployment. The results of Young Workers Indonesia conducted by ILO-IPEC (2006) shows that in the Eastern part of Indonesia, 88 percent of respondents have never received career guidance, while 80 percent of the respondents feel that guidance is useful in finding a job. The data illustrate that the implementation of the guidance and career counseling among students is very important. Ginzberg (Brothers, 2004) states that senior high school students are at a tentative stage where students have been able to think or plan their careers based on their interests and values or their potential. In fact, many learners experience confusion and difficulty in determining their career. Through Career Information (CI) and implementation of counseling programs in the school, the students are expected to gain inspiration and insight into the world of work in the community. Sharf, (1992: 58) argues that students are given the opportunity to choose one of several job options, and they are then questioned about the matters related to the job. Leksana, Wibowo, & Tadjri (2013) note that the problem of a career in adolescence is usually associated with the choice of education, which leads to the selection of the type of job in the future, career planning, and decision making about careers for the future, as well as information about the job and the requirement that must be owned. Planning incorporates the self-knowledge and work knowledge in making career choices. Career information can be used as an important component of the career decision-making (Patton and McCrindle 2001: 32). Ummah (2008) found that the application of career information services can improve the ability for effective career planning at second grade students in SMAN I Krembung Sidoarjo.

Prayitno and Erman Amti (2004: 269) found that the provision information to the learners can be performed in various ways, such as lectures, discussions, and field trips, guidebooks, and conferences career. Career information service is not only conducted face to face directly, but also can take advantage of media or information technology. Implementation of cyber-counseling is commonly called guidance and counselling Internet-based, so that the implementation is not limited in space and time. Interviews and surveys conducted by researchers toward counselling and guidance teachers in senior high school in Parepare explain that the implementation of the provision of ICT-based career information (CI) has not been run. Therefore, it has not been implemented, and it is still comprehensive.

Therefore, the use of information technology in Guidance and Counseling particularly through the Video Compact Disc (VCD) should be implemented at the senior high school. Pelling (2002) states that the use of computer or internet can be used to assist students in career selection process at the stage of decision-making for the right career choice. This study used analysis of Research and Development (R & D). The implementation of the results of this study is expected to help school counselors to utilize technological means to strengthen the ability of the

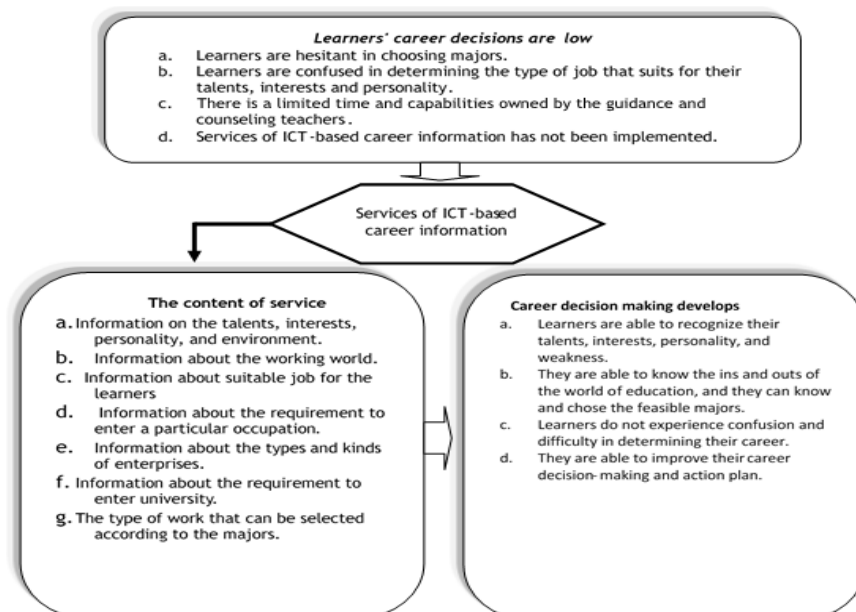
base towards the development of knowledge, attitudes, skills, and creativity that are required by learners in improving the understanding and the adjustment in choosing the type of job in the community by using guidebook that is the product of this research.

In this study, the main problem that is argued, is "how is the model of ICT-based career information service that is interesting, acceptable, and based on the accuracy, feasibility, and utility to improve career decision-making ability of the learners developed?" Planning and preparing for a better future are not an easy thing that can be performed alone. One of the forms of assistance that can be given to the learners is the provision of information relating to their careers (Ramli, M., 2013: 3). Garrison & Carl (1956) describe that every year in this world there are millions of young men and women entering the workforce. The phenomenon of adolescents who enter the workforce is an early experience in working life (career). Super in Sunarto (2008) considers that the career development of adolescents is at the exploratory stage, especially tentative sub-stage and most of them is transitive sub-stage. All of the information will be processed by learners then used as the basis for determining the attitude in making career decisions. Hoppoct (in Winkel & Sri Hastuti, 20010: 318) argues that the information presented to the students and then processed by the students help them to identify alternatives that exist and variations of the prevailing conditions (information use), to investigate all the possibilities in the selection, to form adjustment (exploratory use), to reinforce a decision that has already taken (assurance use), to check the accuracy and appropriateness of prior knowledge (evaluative use), to get insight into the plans, to get ideas and desires that are unrealistic and are not in accordance with an environmental fact of life (readjustive use), and to be associated with learners' data in order to be taken steady provisions (synthesis use). Abdullah Sinring (2008: 166) states that the aspirations of parents directly affects the self-concept, academic achievement, and career maturity. In addition, self-concept has a direct effect on academic achievement and career maturity. Hesitation in making a career choice indicates the inability of the individual to choose or express an opinion on the specific actions that will generate the option to prepare him to enter a specific job (Crites, 1969: 303). According Super in Sharf, (1992: 157) an individual's ability is to perform a searching career information from various sources careers, such as parents, siblings, relatives, friends, teachers, school counselors, and so on. School counselors can take advantage of the technology in the field of services and the development of school counseling programs in order to be better (Backer & Geler, 2003). The guidance and counselling should also synergize with emerging technologies. The rapid spread of computers is not proportional to the development of counseling. There are various issues and challenges in the use of ICT in counseling (Rahardjo in Nurhudaya: 2005). Today, there is a universally accepted fact that ICT is only a strong driving force behind any economy that is driven by knowledge and real world. In order to effectively apply ICT in various fields, there is an urgent need for the availability of appropriate skilled workforce in ICT in a country (Ghufran

Hafiz Ali Khan, 2011). Hooley et al, 2009; Watts and Dent, 2008) has been conducted her research that aimed at supporting the meaningful integration of ICT in counseling for the client's interests in the counseling service. The results of Study of Senior High School in Nigeria conducted by Obi M.C. et al (2012) found that students use the service of career information provision for decision-making and career aspirations.

Counselors perform counseling with the help of electronics in which the client or counselee is carefully paying attention to the aired video containing the matters relating to employment issues ranging from the stage of displaying multiple agencies or offices (government and private) to how to apply for a job, requirements and existing work systems including payroll systems, and so on. Wickwire (in Johnson and Johnson (2002) states that counselor in the future is a person who has a vision-based services. The counselor controls system on (1) program, (2) services, (3) content, (4) processes, (5) procedure, (6) assessment, (7) diagnostics, (8) re-evaluation cycle either at the middle evaluation or end evaluation, and (9) having an understanding of high technology to support guidance and counseling services. The progress of the world of work experiences the rapid growth that are all oriented to meet the economic needs of our demanding career toward elections in order to fulfill the life satisfaction of the concerned individual. Through career information services, it is expected that learners can receive and understand a variety of career information that can be used as consideration in the career decision-making. Fuhrmann (1990: 426) argues that the number of jobs with variations in the type and stage of expertise that requires the mastery of knowledge, ability, aptitude, skills and certain attitudes which has also been growing or changing rapidly, often create confusion and problems in adolescents. Schematically, the framework of the development of LIK-ICT model can be seen in the figure 1 as follows.

**Figure 1.** The framework of the Research and Development (R&D)

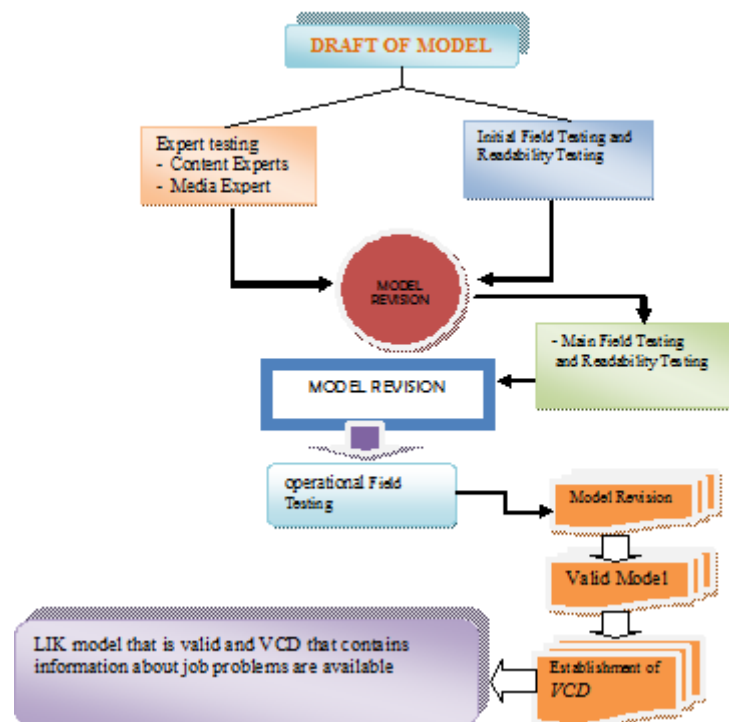


The purpose of this research aims at finding out a model of ICT based-career information service that can be used to help learners in improving their carrier decision-making. The benefits of this research can be viewed from the academic aspects relating to the scientific findings in accordance with the scientific field that is being occupied, especially in the development of science education, particularly the provision of guidance and counseling services based on ICT in solving the problem of learners.

### Method

The procedures of the development in this study can be seen in the schematic in figure 2 below.

**Figure 2.** The procedures of the development



This research and development (R&D) was conducted in senior high schools in Parepare consisting of five schools. Techniques and data collection instruments were questionnaires, observations, and tests. Data analysis technique used was qualitative and quantitative analysis.

## Results and Discussion

### *The Components of the Pre-Development of the Model*

In relation to the pre-development of this model, the researchers conduct the following things:

a. need analysis

Need analysis was conducted because the researchers still need more information on the implementation of career guidance, particularly career information services obtained by the senior high school students in Parepare.

b. Research and the collection of Information

Before researchers made products, it is necessary to know and conduct following activities, namely (a) the study of literature, (b) the characteristics of learners, and the problem formulation.

c. Development planning

In this development planning, several things that can be conducted or made relating to the provision of ICT-LIK should be considered. The first is the type of activity at the planning stage. The second is the provided materials

### *The Component of the Development of Model*

At this stage of developing this model, the researchers prepared several planning and development models that have been made as the product of this research. Therefore, the researchers conducted three activities, namely: (a) the development of the initial model, (b) validation testing conducted by experts, and (c) initial revision I.

### *The Components of after Model is Development*

At this stage, some activities can be carried out. The first is testing small group that involves 50 students. The second is revision II that is conducted based on the data on small group testing. The collected data were used in conducting the final revision of the LIK-ICT product.

### *Testing Large Group*

The implementation of this testing is to determine the effect of the service model of ICT-based career information has been developed. In addition, this testing is also to know the things that need to be revised before determining the final model. The implementation of this large group testing involves 150 second grade students. The results of the data analysis at the level of students' career decisions before and after giving LIK-ICT can be seen in the following table 1.

**Table 1.** The Data on the Level of Students' Career Decisions in Senior High School in Parepare before Giving LIK-ICT

The Category after LIK-ICT is Given

	Frequency	Percent	Valid Percent	Cumulative Percent
< 143.5 (Very Poor)	42	28.0	28.0	28.0
143.6 - 167.4 (Poor)	76	50.7	50.7	78.7
Valid 167.5 - 191.3 (Fair)	29	19.3	19.3	98.0
191.4 - 215.2 (Good)	3	2.0	2.0	100.0
Total	150	100.0	100.0	

The above table shows that the level of career decision-making of the students in senior high school Parepare before the service model of ICT-based career information in general is in the poor category. It is proven by the data that shows that from 150 surveyed respondents there are 76 respondents (50.7%) with poor category. Moreover, 42 respondents (28.0%) are very poor. In addition, 29 respondents (19.3%) are in fair category, and the rest is in good good category that is 3 (2.0 %)

**Table 2.** The Data on the Level of Students' Career Decisions in Senior High School in Parepare after Giving LIK-ICT

The Category after LIK-ICT is Given

	Frequency	Percent	Valid Percent	Cumulative Percent
191.4 - 215.2 (Good)	52	34.7	34.7	34.7
Valid 215.3 - 239.0 (Very Good)	98	65.3	65.3	100.0
Total	150	100.0	100.0	

After the service model of ICT-based career information is given, there is a very significant difference. It means that there is a very high increase in decision making for the students' career. There are 98 respondents (65.3%) who are in the very good category. The level of good category is 52 respondents (34.7%). Based on the table above, it can be concluded that the before the service model of ICT-based career information is provided, many respondents are not able to determine or make decisions for their careers after they graduated from senior high school. Therefore, the application of LIK-ICT in senior high school in Parepare is very necessary to be conducted. The t test that describes the comparison between before and after applying LIK-ICT is as follows:



**Table 3.** Average Similarity Testing before and after Applying the Service

Data	N	Mean	df	T	Sig.
Before applying LIK-ICT	150	153,53	149	40,790	
After applying LIK-ICT	150	219,47	149		0,000

Based on the calculation of the data obtained by using SPSS 21 with paired sample t-test, there are differences in the average value before and after the treatment namely applying ICT-based career information services. Before ICT-based career information services is applied the average value is 153.53, and after applying ICT-based career information services the average value is 219.47.

The data analysis showed that the t value is 40.79 with  $df = 149$ , and the  $t_{table}$  value on  $t_{0,05}$  is 1.645 with significant values  $(P) = 0,000 < \alpha = 0.05$ . Therefore, the hypothesis stating that "there is a significant effect on improving career decision-making after the implementation of the service model of ICT-based career information to the Senior High School students in Parepare" is accepted. As a consequence, the LIK-ICT model LIK-worthy ICT is feasible to be applied to the senior high school students in Parepare. This model can help them to improve career decision-making after they graduated.

The hypothesis testing can be confirmed from the testing results involving a large group of 150 learners. After this model is applied, the respondents experienced a development in decision making for their career as much as 75.8%.

#### a. Final revision

Based on qualitative and quantitative data obtained from validation conducted by experts, practicality testing, acceptability testing, and accuracy testing, then the LIK-ICT model to improve career decision-making of the students has been accepted and can be used as guidance in the provision of career counseling and the provision of career information for senior high school students in Parepare. Because this study used inductive research, the results can be generalized to all students in the second grade state or private senior high schools that exist in Parepare.

#### b. The product of LIK-ICT model

Based on the various steps and stages of testing, revision, validation, and feasibility testing conducted in the application of LIK-ICT, the final stage has been reached. It means that this model is feasible to be used by guidance and counselling teachers in providing career information service for the





senior high school students. This is the final model that can be used and being a product of this research.

Jepsen (Mau, 1999) suggests that career decision making is a complex process, in which individuals manage information about themselves and the world of work. Rapid technological developments today can be used as an opportunity for guidance and counselling teachers in schools to involve information technology as one of the efforts to assist students in the selection of their careers. It can be helpful in the selection of advanced studies department at the university. In this part of discussion, three issues can be raised.

a. The development of Model LIK-ICT

The developed LIK-ICT model is a career information service using VCD media. This service contains a variety of materials and information related to employment issues and an overview of university. Based on the content validation with hypothetical model, the obtained results show that all aspects or structures that build models are assessed by experts and specialists on guidance and counselling and the experts on media for educational technology as the validators review that the model already has been had conceptual feasibility. Expert validation is performed by submitting a career information service model that will be developed in two phases. The first stage is interviews with three experts whose name mentioned above to determine the validity of the LIK-ICT model. The second stage is acceptability testing which includes accuracy, feasibility, and utility on the provision of the service model to the senior high school students in Parepare.

*The Effectiveness of LIK-ICT in Enhancing the Career Decision-Making of the Senior High School Students in Parepare*

Based on the testing result of the large group that is obtained to examine the effectiveness of LIK-ICT to improve career decision-making of learners has been reached. By using LIK-ICT, the guidance and counseling teachers feel that they are assisted in the provision of career information services. Even, many guidance and counseling teachers are urged that this product can be applied immediately. Based on the results of questionnaires given to 150 respondents, the results show that 86.0% of the respondents gave a positive response on the implementation of LIK-ICT. This results are supported by the statistical analysis which shows that  $t$  value is 40.79 with  $df = 149$ , and the  $t_{table}$  value on  $t_{0.05}$  is 1.645 with significant values  $(P) = 0,000 < \alpha = 0.05$ . As a consequence, the LIK-ICT model LIK-worthy ICT is feasible to be applied to the senior high school students in Parepare. This model can help them to improve career decision-making after they graduated.

## Conclusion

One of the effects of information technology is the implementation of the support system that requires counseling to adjust to its environment to meet the needs of the wider community. Strategy counseling services should be considered in counseling services in the era of globalization that is the use of information communication technology (ICT) and guidance and counseling that must be collaborated. The application of LIK-ICT can help learners to improve career decision-making, especially in senior high schools in Parepare.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Notes on contributors

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