



Exploring Children's Career Interests and Knowledge Based on Holland's Theory

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This research aims to explore children's career interests and knowledge based on Holland's Theory, and to test the fit of the model of lower-grade primary school students' career knowledge using the same theory. The research sample was 576 lower-grade primary school students in Daerah Istimewa Yogyakarta. Quantitative descriptive technique was employed to describe children's career interests and knowledge, while Confirmatory Factor Analysis was used to test the model fit of the data. The results show that the social dimension of Holland's theory becomes the students' highest orientation in career interests and knowledge. The five careers most preferred by the children are teacher, principal, doctor, singer, and police officer while the five careers least preferred by the children are administration employee, salesperson, counselor, sculptor, and model. Moreover, the careers whose knowledge is mostly learnt by the students are teacher, principal, driver, police, and doctor. On the other hand, the five careers whose knowledge is the least learnt by the students are administration employee, counselor, salesperson, sculptor and agriculture engineer. Finally, the research reveals that the career knowledge of the children fits to Holland's concept. It implied that Holland's theory is suitable used for improving children's career interests and knowledge in guidance and counseling program.

Keywords: career interest, career knowledge, children, Holland's theory, career

INTRODUCTION

Career development is crucial for children to achieve success in the future. Thus, their career interest and knowledge should be investigated. The words of Career Development,

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Vocational Development, and Occupational Development are often used synonymously. They refer to a lifelong process of developing work values, crystallizing a vocational identity, learning about opportunities and trying out part-time work situations (Dhillon & Kaur, 2005). Reviews of research on children's career development reveal that early childhood is a very important stage for children to start knowing about their career interests (Brown-Huston & Wilkerson, 2014; Dhillon & Hartung, Porfeli, & Vondracek, 2005; Magnuson & Starr, 2000; Pofarli & Vondracek, 2009; Super, 1954). Cahill and Furey (2017b) argue that career development in early childhood will develop children's competencies and healthy sense of self that enable them to reach their full potential. For adults, career development is about the past (their childhood), the present, and the future because they will often reflect back to their own childhood as the early beginnings of their interests and abilities; on the other hand, career development for children is about their present lives and dreams for the future (Cahill & Furey, 2017a). Therefore, the responsibility of adults in children's life is to provide many and varied developmentally appropriate opportunities for career awareness, career exploration, and the development of life career planning skills (Magnuson & Starr, 2000).

According to Hartung, Porfeli, and Vondracek (2005), childhood is a vital period in which children should obtain an awareness and understanding of career as in this stage they have had the capacity of thinking about their future career by using their imagination and knowledge. Not only that, this childhood stage will play a pivotal role in helping them find suitable careers as they grow older. The fact that children have already been familiar with the world of career in terms of interest and knowledge is also believed by Amstrong & Crombi (2000). They explicate that more realistic and gradually consistent career aspirations have been cultivated in children's imagination. Based on Wagner's theory (2003), children's early career development is influenced by cultural contexts. Prior to this theory, Gottfredson (1996) claimed that social stereotypes can affect children's views on particular fields of work as the society's judgment on a certain career can make children change their positive or negative attitudes. In this regard, talent and interest are frequently not taken into consideration when people decide what career they might want or have, which then may result in unhappiness or even frustration in their work-life. In relation to this phenomenon, Bandura (1977) believe that harmony in an individual's family life is also shaped by his or her work-life contentment. Owing to this fact, career guidance and counseling program definitely needs to be developed for children in their early childhood period because it helps children develop their career maturity and lead to choosing suitable careers for their lives (Spokane, 1991).

That career guidance is notably needed for children can be noticed from the results of Bidyalakshmi's research (2016) which clearly indicated that the majority of students expressed their need of a counselor, besides their parents and teachers, who can extend a program of guidance and counselling in their schools; they wished to seek help from the counselor in order to overcome their period of dilemma in career choice decision. Thus, career guidance and counselling are required for appropriate career development as they help student in making the best possible adjustment to the current situations in educational institution and occupational world, home and community (Bidyalakshmi,

2016; Obiunu & Ebonu, 2010). As a strategic domain, this kind of service has been seriously expanded, Super, Savickas, and Super (1996) argue that career is not stagnant in an adult's mind when he or she chose a subject or major in their schools, but it has been growing since an individual was still very young. When an individual has not been familiar with any information about work-field since childhood, he or she may face problems in choosing appropriate careers as they grow older. Indeed, there are many graduated students who still do not know what to do even in their maturity period. Hence, it is true that information about career interest and knowledge is very essential to be given to children as early as possible.

In Indonesia, transferring ideas related to career interest and knowledge into children's mind is certainly not an easy mission. The main difficulties lie in the lack of human resources and knowledge since the number of counselors in primary schools is inadequate. The responsibility for giving information to increase children's career awareness is then given to class teachers who are of course not professional in this field due to their lack of formal education about such issues. In that way, it is urgent to design a program for primary school teachers in relation to how to give proper information about career to their students as early as possible. Based on the problems described, in the first period of this multi-year research, with the main target of designing career guidance program for the 1st until 3rd year primary school children through developing game media, this research was conducted in order to find out: (1) the career interests of children regarding the six career dimensions in Holland's theory; (2) the career knowledge mentioned in Holland's six career dimensions that children mostly learn; (3) the five careers that most or least preferred by children; and the five careers whose knowledge is the most or the least learnt by the students; and (4) to test the fit model of lower grade primary school students' career knowledge according to Holland's theory.

Considering the East culture, especially Indonesia, this research needs to be conducted to make sure that the guidance and counselling service programs in elementary schools can be given to increase students' career awareness so that in the future they can have opportunities to choose careers based on their interests and abilities. Moreover, this research can help provide information (the results of the need-assessment research) which hopefully will assist the implementation of these programs in the following year research. With these programs, the risks of having difficulties and failure in career development in adulthood can be reduced.

LITERATURE REVIEW

Career Development Based on the Theory of Super

Career development process is unique to every person as many factors such as psychological, sociological, educational, socioeconomic status (Obiunu & Ebonu, 2010), and vocational interventions (Southern & Walters, 1990) play an important role in the development of one's career path. One of the initiators of career development theory is Super. Super's theory is a combination of stage development and social role theory (Super et. al, 1996). He formulated the theory of career development which includes five stages: (a) growth stage (ages around 4-13 years old); (b) exploration stage

(ages around of 14-24 years old); (c) establishment stage (ages around 25-44 years old); (d) maintenance or management stage (ages around 45-65 years old); and (e) disengagement stage (ages of 66 years old-above) (Super, Savickas, & Super, 1996).

Based on the theory of career development proposed by Super, elementary school children are in the growth stage. In this stage, children get initial information about career from their parents and teachers. With this information, they learn how to understand the values of achievement in career and how to develop and maintain effective and meaningful habits of working. Thus, they can have more considerations about their future careers. If children are physically and psychologically developed, according to Gies (1990), they can have more extensive concepts and knowledge about a variety of choices in career. This is important because, as Super (as cited in Brown & Lent, 2005) claims, career choice is an individual's way of manifesting his or her concept of career.

Career adaptability and maturity are important aspects in career development as they denote the status achieved by individuals along the continuum of vocational development and their readiness for coping with current and imminent vocational development tasks, occupational transitions, and personal traumas (Super, 1957). Spokane (1991) and Sciarra (2004) state that career maturity based on direct assistance given to an individual to promote more effective decision-making, intensive counselling to help resolve career difficulties, enhancement of person's career development to enable him make more effective career decisions can be signified by increasing the ability of planning, having responsibilities, and having career awareness of career interest and knowledge. Primary schools need to facilitate children to gain all these characteristics by holding career development programs in their schools. Thus, the research focuses on children's career interests and knowledge. The following sub sections discuss both.

Career Interest and Knowledge

Career interest

Vocational or career interests are central to one's identity and can be conceptualized as disposition-like attitudes (Deniz, Türe, Uysal, & Akar, 2014; Su, Rounds, & Armstrong, 2009; Low, Yoon, Roberts, & Rounds, 2005). Much research has indicated that the role of career interests in one's life is very crucial because it can predict educational and career choices, job performance, career success, subjective well-being in the future (Rounds & Su, 2014), and persistence in work and academic contexts (Nye, Su, Rounds, & Drasgow, 2012). Individuals' abilities, attitudes, and values could be expressed well in their jobs; when the circumstances in jobs fit to individuals' personalities, then satisfaction, stability, and positive performance in their jobs will easily be achieved.

Lent, Brown, & Hackett defined career interest (1994) as the pattern of likes, dislikes, and indifferences regarding career-relevant activities and occupations. Meanwhile, Holland (in Brown, 2002) is more interested in discussing individuals' personality and their interests in career. Further, Holland proposes that people choose vocational environments which are compatible with their needs, values, and general traits (Chason,

Bullock-Yowell, Sampson Jr, Lenz, Reardon, 2013). The theory's core idea is that most people resemble in a combination of six personality types commonly abbreviated with the acronym RIASEC (Kidd, 2006; Rounds, McKenna, Hubert, & Day, 2000):

Realistic: realistic jobs such as mechanics, surveyors, farmers, and electricians are preferred by this kind of people. Commonly people with this type of career interest possess more mechanical than social abilities.

Investigative: jobs related to research, like in the fields of biology, chemistry, physics, anthropology, are mostly preferred by this kind of people. They have more abilities in thinking, collecting data, and making careful analyses.

Artistic: jobs related with arts such as composers, musicians, stage directors, writers, or painters, are more preferred. People with this type of career interest are considered more emotional, independent, esthetic, expressive, intuitive, extrovert, and imaginative, but they are also people with less well-organized thoughts.

Social: jobs such as teachers, librarians, counsellors, or psychologists are more preferred by people with social ability and talent.

Enterprising: jobs such as sellers, managers, television producers, and buyers are most preferred by people who love being self-employed. These people do not enjoy scientific or intellectual tasks because they prefer activities which control others in an attempt to reach organizational goals or achieve economic gain.

Conventional: jobs such as finance analyst, bankers, and tax officers are more preferred as strong precision, accuracy, clerical and arithmetical abilities become their main values. This kind of people, however, do not really have artistic abilities.

Career interest, personality, and congruence between personalities and environments

Holland's theory of vocational personality is proven to be applicable in broad practice (Nauta, 2010), of which are those on the practice of counseling and career intervention which undoubtedly has a strong influence (Rayman & Atanasaff, 1999). Empirical data has provided strong support that in between the types of Holland's RIASEC, there is a congruence between personality and environment. According to Holland (1997), the congruence between personality types of RIASEC and work environment types is able to determine job satisfaction, stability, and performance. Therefore, in the practice of counseling psychology, many experts apply Holland theory, specifically about the assessment of interests (Nauta, 2010).

Based on his research on personality that is associated with several individual differences construct, Holland concluded that personality has a very close relationship with vocational interest. Even in one of his statements, Holland said that one's vocational interest was a manifestation of his/her personality (Holland, 1997).

Although Holland acknowledged the influence of gender, race and ethnicity, age, and social class on career development (1997), the effect of age is relatively small (Fouad, 2002).

Based on these descriptions, it is concluded that people's interest is a reflection of their personality without significantly being influenced by their age. This is strengthened by the statement of Holland (1997) that the interest and personality models have several points in common with Holland's RIASEC type. Therefore, in this research, the instruments of interest and career knowledge are composed based on the RIASEC of Holland's theory.

Career knowledge

Super (in Sharf, 2000) defines career knowledge as the understood information about job assignments in certain positions and all the manners and behavior in doing jobs. For example, one way of giving career education and knowledge in primary schools is holding a school activity such as Career Day. It is strengthened by the results of research conducted by Brown-Huston and Wilkerson (2014) indicating that career days increased students' basic knowledge about the career concept of occupation or job path. In the career day program, children that cannot efficiently find a career as they are simply unaware of what they want to do are introduced to many kinds of career options which will expose their passions and interests (Kaskey, 2012). They can learn how to differentiate individual work from team work. They can also be familiar with what is meant by indoor and outdoor jobs. In another school activity like Workwear Day, for example, children can learn more things about jobs such as the working period, the benefits of certain kinds of job, the devices people use for doing their jobs, and the subjects people major in for having such jobs. They can learn all these by interviewing some invited practitioners. In this kind of activity, children can also increase their knowledge of fields of work by creating pictures of certain jobs they can easily see at schools (such as teachers, administration staff, waiters in school cafeteria, bus drivers, school guards, and librarians). Through the pictures, children can imagine what people exactly do when finishing their jobs (Beale & Williams, 2000).

The activities previously mentioned can teach children to gain more information about careers. In this research, the term "career knowledge", in line with the explanation of Beale and Williams (2000) about various characteristics of career, is more closely observed. They involve the following characteristics: (1) activities conducted in certain jobs; (2) the place of activities, either indoor or outdoor; (3) the workwear; (4) the working time (day or night); and (5) the devices used. The categorization of the kinds of jobs for exploring and measuring children's career knowledge in this research is based on Holland's theory of career classification. It is therefore expected that the data of children's career knowledge will fit to the concept of career classification of Holland's theory.

Based on the afore-mentioned elaboration, some research questions can be drawn and some hypotheses can be proposed: (1) Which career dimension among the six proposed by Hollands is the children's highest orientation in their career interests? (2) Which

career dimension among the six proposed by Hollands is the children's highest orientation in their career knowledge? and (3) What are the five careers that children most or least interested in; and what are the five careers whose knowledge is the most or the least learnt by the children?

Hypothesis 1: The empirical data of children's career knowledge in RIASEC dimension fit to Holland's concept of six career classifications in each dimension.

Hypothesis 2: The empirical data of children's career knowledge in DIY, Indonesia fit to Holland's concept of six career classifications (as a whole).

METHOD

Techniques or Modes of Inquiry and Source of Data

This study was the first-year of multi-year research which applying Research and Development approach as a whole. Preceding the development step as the goal of second-year research, this first-year study which aims to perform need assessment, applied survey design with quantitative approach. The instruments are a checklist employed to measure the level of children's interests of certain kinds of jobs, i.e., Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC) of Holland's Theory and a test on career knowledge as a self-constructed instrument employed to measure children's career knowledge. Five indicators of career covered in the test are work activity, place, wear, time, and device. The instrument validation was conducted by using content validity, and Alpha Cronbach formula was used to test the instruments' reliability. The results of reliability coefficients were .935 for the career interest check list and .891 for the career knowledge test. Quantitative descriptive technique was employed to analyze the data in order to determine the children's career interest and knowledge level. Further, to test the fit model of children's career knowledge as mentioned in Holland's theory, Confirmatory Factor Analysis (CFA) was also employed.

The research data were collected from 576 students of public and private primary schools in Daerah Istimewa Yogyakarta (DIY), Indonesia. They were 236 first-grade students, 197 second-grade students, and 143 third-grade students. To be able to obtain the representative sample, this research used multi-stage cluster stratified random sampling. The first step was randomly determining the students of the first, second, and third grade from three sub-districts of each district in DIY province. In the second step, two schools of each sub-district were also determined randomly. Finally the research obtained the sample of 576 students taken from 30 classes.

Procedure

The first thing to do in the research procedure was formally informing and asking for permission to the local government and the school headmasters so that they can prepare themselves to give the necessary data. The second step of the research procedure was providing 16 assistants, students of Educational Psychology and Counselling Study Program, to help the participants fill the checklist and test. All the assistants were well-

trained in data collection technique so that the participants can give the data expected. In the data collection, three students were helped by one assistant.

FINDINGS

The research results were presented based on each research question and each hypothesis proposed.

which career dimension from the six dimensions proposed by hollands is the children's highest orientation in their career interests?

Based on data analysis, it was found that the highest to the lowest percentage of children's career interests covering Social Dimension (71.29%), Realistic Dimension (67.42%), Artistic Dimension (60.48%), Investigative Dimension (58.48%), Conventional Dimension (55.54%), and Enterprising Dimension (54.20%). From that order, social dimension becomes the highest orientation in the children's career interests.

which career dimension from the six dimensions proposed by holland whose knowledge is the most learnt by the children?

Based on data analysis, it was found that the highest to the lowest levels of the percentage of children's career knowledge covering Social Dimension (82.78%), Realistic Dimension (82.30%), Investigative Dimension (68.69%), Artistic Dimension (68.29%), Enterprising Dimension (65.19%), and Conventional Dimension (64.35%). From that order, it can be clearly seen that social dimension is the domain whose knowledge is mostly learnt by the children.

what are the five careers that children most or least interested in; and the five careers whose knowledge is the most or the least learnt by the children?

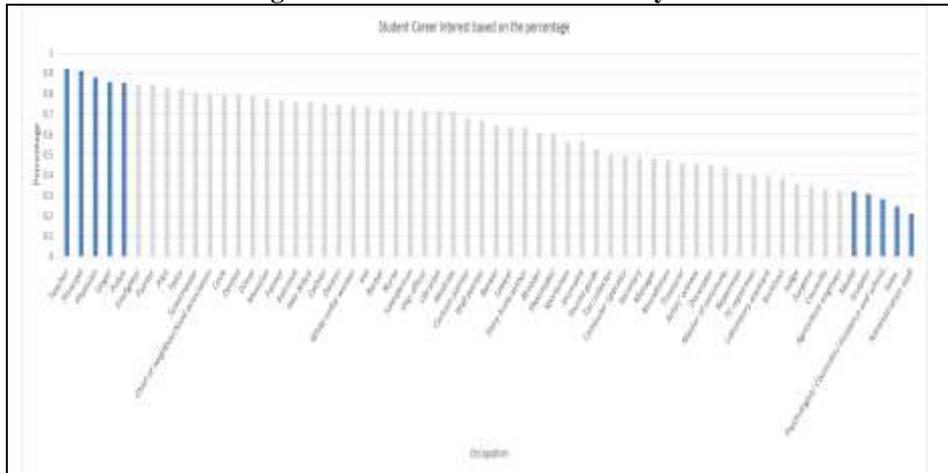


Figure 1
Children's Career-Interest Level based on the Percentage

Figure 1 shows that teacher, principal, doctor, singer, and police are the five careers that children most interested in, while administration employee, salesperson, counsellor, sculptor, and model are the five careers that children least interested in.

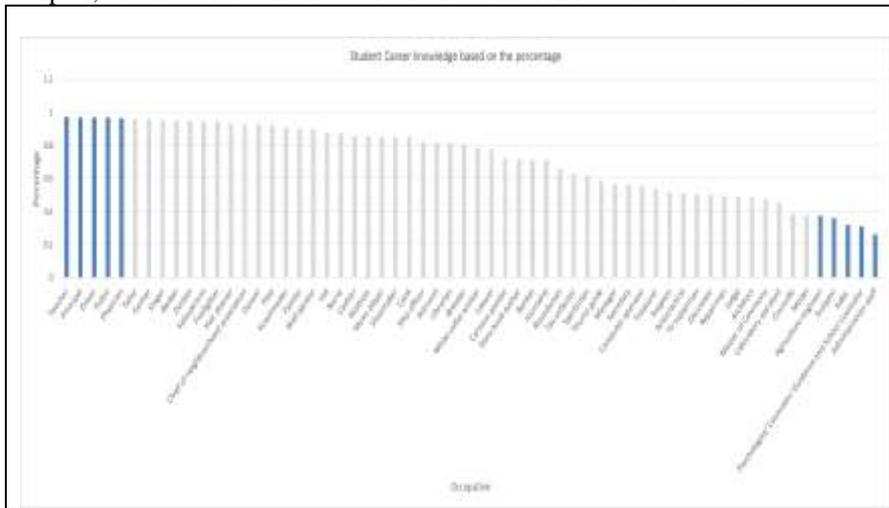


Figure 2
Children’s Career-knowledge Level based on the Percentage

Figure 2 shows that teacher, principal, driver, police, and doctor are the five careers whose knowledge is the most learnt by children, while administration employee, counsellor, salesperson, and sculptor and agriculture engineer are the five whose knowledge is the least learnt.

Findings on Hypotheses Testing

H1: The empirical data of children’s career knowledge in RIASEC dimension fit to Holland’s concept of six career classifications in each dimension.

Table 1

The Outcome of Chi-Square Test between Empirical Data and Holland’s Model

Dimension	R	I	A	S	E	C
Chi-Square	42.28	31.05	30.02	38.55	43.91	39.05
Df	31	21	21	30	34	28
P	.08517	.07278	.09157	.13613	.11881	.08009
RMSEA	.025	.029	.027	.022	.023	.026

In confirmatory factor analysis, a dimension is regarded as fitting with the model if it has p-value of $\chi^2 > .05$ and RMSEA (Root Mean Square Error of Approximation) $< .08$. Based on the criteria, it can be inferred that the model fits. Thus, it can be concluded that the empirical data of students’ career knowledge in Realistic, Investigative, Artistic, Social, Enterprising, and Conventional dimensions fit to Holland’s concept of RIASEC dimensions.

Table 2

The Result of Item-Fit Test from Dimension Realistic, Investigative, and Artistic to Holland's Model

No	R			No	I			No	A		
	λ	T	p		λ	T	p		λ	T	p
1	.43	7.58	> .05	2	.25	4.92	> .05	3	.37	7.05	> .05
7	.21	4.57	> .05	8	.44	6.73	> .05	9	.43	7.35	> .05
13	.01	.18	< .05	14	-.11	-2.30	> .05	15	.50	9.76	> .05
19	.31	6.25	> .05	20	.50	8.27	> .05	21	.36	6.72	> .05
25	.35	7.30	> .05	26	.42	8.46	> .05	27	.07	1.29	< .05
31	.45	9.84	> .05	32	.39	7.15	> .05	33	.03	0.63	< .05
37	.54	11.92	> .05	38	.36	7.20	> .05	39	.63	12.01	> .05
43	0.57	12.12	> .05	44	0.69	12.12	> .05	45	0.50	9.78	> .05
49	0.62	12.99	> .05	50	0.42	8.73	> .05	51	0.10	1.94	< .05
55	0.37	7.91	> .05	56	0.39	7.69	> .05	57	0.37	6.87	> .05

Note. λ = Factor loading

The instrument of children's career knowledge contains the RIASEC dimensions. Each dimension consists of 10 items. Thus, there were 60 items in the instrument. An item is considered misfit to the model if its loading factor (λ) of $t < 1.96$. In contrast, an item is considered fit to the model if its loading factor (λ) of $t > 1.96$.

Table 2 shows the results of item fit test of Realistic, Investigative, and Artistic Dimension. The only dimension with all items fit to the model is Investigative Dimension as the (λ) of t is more than 1.96. Meanwhile, in Realistic Dimension, there was 1 misfit item (item number 13), and 3 misfit items in Artistic Dimension (item number 27, 33, and 51).

Table 3 shows the results of item fit test of Social, Enterprising, and Conventional Dimensions. All items of the Social and Conventional Dimensions fit to the model as the (λ) of t is more than 1.96. Meanwhile, there was 1 misfit item in the Enterprising Dimension (item number 59).

Table 3

The Results of Item-Fit Test from Social, Enterprising, and Conventional Dimensions to Holland's Model

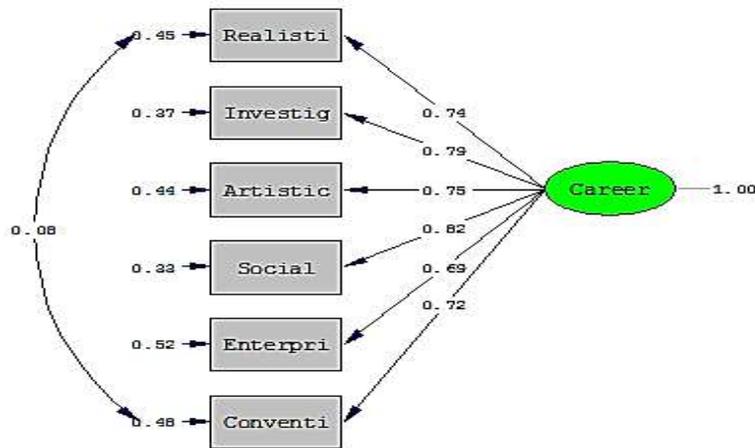
No	S			No	E			No	C		
	λ	T	p		λ	T	p		λ	T	p
4	.30	6.76	> .05	5	.22	4.06	> .05	6	.13	2.67	> .05
10	.57	12.75	> .05	11	.40	7.38	> .05	12	.46	8.41	> .05
16	.41	8.94	> .05	17	.16	2.91	> .05	18	.35	7.14	> .05
22	.73	16.77	> .05	23	.18	3.22	> .05	24	.24	4.82	> .05
28	.46	10.58	> .05	29	.46	8.38	> .05	30	.38	7.58	> .05
34	.45	10.29	> .05	35	.60	10.39	> .05	36	.25	5.07	> .05
40	.28	5.74	> .05	41	.26	4.71	> .05	42	.49	9.74	> .05
46	.43	7.75	> .05	47	.20	3.59	> .05	48	.43	8.86	> .05
52	.51	11.75	> .05	53	.35	6.48	> .05	54	.68	13.30	> .05
58	.32	7.12	> .05	59	.10	1.85	< .05	60	.49	10.33	> .05

Note. λ = Factor loading

Based on the confirmatory factor analysis results, it can be concluded that the null hypothesis is rejected or the research hypothesis (Hypothesis 1) is accepted. It means that the empirical data of children’s career knowledge in RIASEC dimension fit to Holland’s concept of six career classifications in each dimension.

H2: The empirical data of children’s career knowledge in DIY, Indonesia fit to Holland’s concept of six career classifications.

This research also examined whether or not the empirical data of career knowledge of lower grade primary school students as a whole fit to the concept of career classification in Holland’s theory.



Chi-Square=13.91, df=8, P-value=0.08416, RMSEA=0.036

Figure 3

Loading Factors of Dimension R, I, A, S, E, and C of Career Knowledge Model

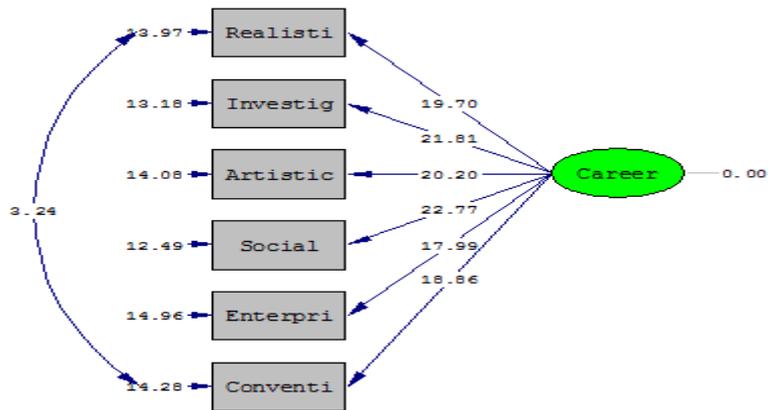


Figure 4

Result of t Tests of Dimension R, I, A, S, E, and C of Career Knowledge Model

Figure 3 shows that the Career Knowledge model has p-value of $\chi^2 > .05$ and RMSEA $< .08$. Furthermore, Figure 4 shows that all dimensions, i.e., R, I, A, S, E, and C have t-value > 1.96 . Thus, Hypothesis 2 is also accepted, or it means that the model fits. It can be concluded that the empirical data of children's career knowledge in DIY, Indonesia fit to Holland's concept of career classification.

DISCUSSION

Career development leads to personal improvement afforded by individuals and organizations to choose a destination and a career path to achieve particular goals (Rande, Rahawarin, Jamaluddin, & Zacharias, 2015). It helps individuals of all age remedy the lack of knowledge, promote personal and educational development, and motivate themselves by providing a connection between educational programs and future careers (Kalchik & Oertle, 2010). Career development issues are closely related to career interest and knowledge, as they are considered the core aspects of career counseling assumed to be important factors in the processes of career decision-making and career development (Holland, 1997; Savickas & Spokane, 1999). Therefore, as explained earlier, this study highlights four points, there are: (1) the career interests of children regarding the six career dimensions in Holland's theory; (2) the careers mentioned in Holland's six career dimensions whose knowledge is the most learnt by the children; (3) the five careers that children most or least interested in; the five careers whose knowledge is the most or the least learnt by the children; among lower grade students of primary schools; and (4) to test the fit model of lower grade primary school students' career knowledge according to Holland's theory.

Related to the first and second research questions, the results of the analysis as presented in Figure 1 and Figure 2 show that based on the RIASEC dimensions of Holland's theory, careers in social dimension are the ones which mostly capture the children's interests, and career knowledge in the same dimension also becomes the mostly learnt by the children in DIY. As the samples of this research are students whose ages are between 6-8 years, or, according to Berk (2010), students who are children of middle period and school age, the research results are quite logical. In this period, people surrounding the children become their models. These results are also in line with Hewit's (2010, as cited in Nyamwange, 2016) research indicating that mostly children are heavily influenced by the professions of their parents. Families, parents and guardians usually play a significant role in the career goal development of the children. Without parental approval or support, students and young adults are often reluctant to pursue or even explore diverse career possibilities (Taylor, Harris, & Taylor, 2004). Through interactions, such as conversations, reactions (both verbal and nonverbal), degree of separateness or closeness, or expectation, parents convey their influence to children, affecting what children think, say, and perceive about various careers (Dubow, Boxer, & Huesmann, 2009).

Research involving parents' influence on children's career choice shows that father's occupational status is highly correlated with the children's occupations (Friesen, 1981). Research conducted by Hellerstein and Morrill (2011) reveals that about 30% of sons and 20% of daughters are in the same occupation of his/her father. Although it is

obvious that parents' occupations influence children's career choice, children sometimes choose what their parents desire simply to please them (Taylor, Harris, & Taylor, 2004). In addition to the factors mentioned earlier, social support or interaction with their community (Natalie, 2006 in Edwards & Quinter, 2011), school (Bronfenbrenner, 1979; Natalie, 2006 in Edwards & Quinter, 2011), friends, relatives, role models, teachers especially career counselor (Nyamwange, 2016), peers (Bronfenbrenner, 1979; Nyamwange, 2016), religious groups, health services, and the playgrounds in which they play in their neighborhoods (Bronfenbrenner, 1979) are also the important aspects in their microsystem environment. This condition affects children's career knowledge and interests since children normally learn about careers in their environment. This explains why children are mostly interested in careers belonging to the social dimension. For example, since teacher, principal, and counselor are professions found in the microsystem environment of children, these careers tend to be more popular among them. Moreover, those careers are easily embedded in children's thought because those kinds of job are considered as authority characters which have high status in the Asian children's point of view (Yau, Smetana, & Metzger, 2009). Thus, it is not surprising that those jobs are quite appealing for children.

Further, related to the third and fourth research questions, the results of the analysis are presented in Figure 3 and Figure 4. Figure 3 shows that teacher, principal, doctor, singer, and police were the five careers that children most interested in, while administration employee, salesperson, counsellor, sculptor, and model were the five careers that children least interested in. Meanwhile, Figure 4 shows that teacher, principal, driver, police, and doctor are the five careers whose knowledge was the most learnt by the children, while administration employee, counsellor, salesperson, sculptor and agriculture engineer are the five careers whose knowledge is the least learnt. The parallel relation between the five careers that the children most interested in and the five careers whose knowledge is the most learnt by the children indicates that children's knowledge about career may contribute to their career interests. Based on the data of 20 careers chosen by the children, when grouped according to the dimensions, they still dominate children's career choices.

To draw valid inferences from the Confirmatory Factor Analysis, the fit of the model needs to be assessed and evaluated. Model misfit indicates that one or several model assumptions are violated (Kohler & Hartig, 2017). Even though the interpretation results from Table 1 show that the model fits (students' career knowledge in Realistic, Investigative, Artistic, Social, Enterprising, and Conventional dimensions fits to the concept of Holland's theory in each dimension, i.e., R, I, A, S, E, and C), from the 60 items presented in the RIASEC instrument, only 91.67% of the items were included in the fit item, while 8.33% items (item number 13, 27, 33, 51, and 59) were included as misfit ones. Fit items show that the items are able to explain the construct well. On the other hand, misfit items indicate items inconsistent with any of the constructs measured (Bond & Fox, 2001). The practice of removing misfit items has been a debate subject among experts because that seems somewhat rash (Orlando & Thissen, 2000). Misfit items can still be repaired so that the instrument is equitable to all respondents, and reliable (Kamis, 2013).

Related to the items which do not really help develop the models of each dimension, there are some causes for item misfit: inappropriate answer choice (which allows test takers to have an opportunity to cheat and guess), test takers' confusion or anxiousness, language (when test takers have low ability in understanding the questions), and overcreativity (when test takers interpret items unusually or creatively) (Meijer, 1996). Item number 13 is taken as an example. Trying to reveal the knowledge of working hours of a farmer and given the alternative times which are in the morning, in the afternoon, and in the evening, children can probably get confused about whether it is in the morning or in the evening as what they know is that generally farmers work between morning until afternoon, including mid-day. Meanwhile, for item number 27, it reveals that it would be better to explain scarf used as a part of a dancer's costume by using the word "*selendang*" instead of "*slayer*", of which both means "shawl", and the word "*selendang*" might be better known by children who live in DIY. Item number 33 reveals knowledge of what is done by the models by using the term "*memamerkan pakaian di atas panggung*" which is probably less effective than the term "*memperagakan pakaian*"; of which both means "to exhibit clothes on the stage", but "*memperagakan pakaian*" might be better known by children in DIY. For item 51 related to sculptor and item 59 related to lawyers, it is probably difficult to reveal children's knowledge on those words merely through verbal question-answers since lower grade students of primary schools are still in the stage of concrete operational in their cognitive development (Santrock, 2011). Thus, it is expected that the game media, which will be developed in the following-year research, could use pictures and short captions that will be easily understood by the students.

In line with the results of the first hypothesis, the second hypothesis in this study was also accepted (deduced from Figure 5 and Figure 6). It means that the empirical data of career knowledge of children as a whole fit to the concept of career classification in Holland's theory. This goes along with Kidd's findings (2006) that in the East culture, there is a similarity of four to six RIASEC dimensions with Holland's theory. Related to this, Holland (1985, p. 119) stated that "the ordering (RIASEC) of types or occupational categories is similar even when the data, sexes, and cultures vary". It is also strengthened by some reasearch results that most people are similar in the combination of six personality types known as RIASEC (Kidd, 2006; Rounds, McKenna, Hubert, & Day, 2000). The compatibility between data from various countries that adopt the eastern culture and Holland Theory can also be found in the results of research in East China (Long, Adams, & Tracey, 2005), Korea (Tak, 2004), Singapore (Soh & Leong, 2001), Hong Kong (Farh, Leong, & Law, 1998), and India (Leong, Austin, Sekaran, & Komarajju, 1998). A review of cross-cultural studies of Holland Theory usually concludes that the RIASEC concept is suitable for various ethnic and cultural populations (Hansen, 1987; Harrington & O'Shea, 1993; Rounds & Tracey, 1996).

The research results suggest that construct model on Holland's theory which consists of six dimensions can be functioned as the basis of developing game media (in the following-year research) for giving guidance to the primary school students to support their career development. Hopefully, the media can give a significant contribution to career guidance for children based on the individuals' personality as proposed by

Holland's theory. Although children's personality is still in the process of developing and still unstable, it cannot be considered as obstacles in giving guidance to children in their early years so that congruence among their interests, abilities, environment, values and characters, and their future career can be easily achieved

CONCLUSION

Based on the findings and discussion, it can be concluded that social dimension becomes the highest orientation of both career interests and career knowledge for the primary school students in DIY, Indonesia. Since they are still in the school-age period, the children mostly encounter the family and school environment. Thus, it is not surprising that they are familiar with careers belonging to the domain of Social dimension, such as teacher, principal, and doctor, which further become the kinds of career that children most interested in. In addition, the careers whose knowledge is mostly learnt by the children is also in the Social dimension. Meanwhile, the careers that children least interested in and with limited knowledge learnt are in the dimensions of Enterprising and Conventional.

Further, the research also generates the conclusion that the empirical data of career knowledge of lower grade primary school students as a whole fit to the concept of career classification in Holland's theory. However, in the model testing of each dimension, some test items of Realistic, Artistic, and Enterprising dimensions need revision as they lack contribution in constructing the model. The research implicates that efforts for developing game media to support career guidance for the primary school students are necessary. Further, the career classification model of Holland which consists of six dimensions, namely Realistic, Investigative, Artistic, Social, Enterprising, and Conventional is strongly recommended to be the basic framework for developing the media. It is expected that the game media for career guidance can encourage students to explore more the less popular career and the less learnt career knowledge. Finally, it is suggested for future studies to complete the research instruments with pictures to ease the students, especially those who are still at Grade 1, in understanding the questions.

REFERENCES

- Armstrong, I. P., & Crombie G. (2000). Compromises in adolescents' occupational aspirations and expectations from grades 8 to 10. *J. of Vocational Behavior*, 56, 82-98.
- Bandura, A. (1977). *Social learning theory*. New York: Prentice-Hall.
- Beale, A.V., & Williams, J.C. (2000). The anatomy of an elementary school career day. *J. of Career Development*, 26(3), 205-213. <http://dx.doi.org/10.1023/A:1022943232402>.
- Berk, L. E. (2010). *Development through the lifespan*. Boston, MA: Pearson Education.
- Bidyalakshmi, K. (2016). Need of career guidance and counselling among the students. *IOSR J. of Res. & Method in Edu.*, 1(2), 7-8. <http://dx.doi.org/10.9790/7388-06120708>.

- Bond, T. G., & Fox, C. M. (2001). *Applying the Rasch model: Fundamental measurement in the human sciences*. Mahwah, NJ: Lawrence Erlbaum and Associates.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge: Harvard University Press.
- Brown, D. (2002). *Career choice and development*. San Francisco: John Wiley & Sons.
- Brown-Huston, H., & Wilkerson, K. (2014). *Closing the loop: Incorporating program evaluation into an elementary school career day*. Alexandria, VA: American Counseling Association.
- Brown, S. D., & Lent, R. W. (2005). *Career development and counseling: Putting theory and research to work*. Hoboken, NJ: John Wiley.
- Cahill, M., & Furey, E. (2017a). *The early years career development for young children: A guide for parents/guardians*. Toronto, ON: CERIC Foundation House.
- Cahill, M., & Furey, E. (2017b). *The early years career development for young children: A guide for educators*. Toronto, ON: CERIC Foundation House.
- Chason, A. K., Bullock-Yowell, E., Sampson Jr, J. P., Lenz, J. G., Reardon, R. C. (2013). Relationships among career thoughts, career interests, and career decision state. *The Canadian Journal of Career Development*, 12(1), 39-47.
- Deniz, K. Z., Türe, E., Uysal, A., & Akar, T. (2014). Investigation of vocational interest and vocational preference in terms of gender and socio-economic status. *Eurasian Journal of Educational Research*, 57, 91-112. <http://dx.doi.org/10.14689/ejer.2014.57.1>.
- Dhillon, U., & Kaur, R. (2005). Career maturity of school children. *Journal of the Indian Academy of Applied Psychology*, 31(1-2), 71-76.
- Dubow, E. F., Boxer, P., & Huesmann, L. R. (2009). Long-term effects of parents' education on children's educational and occupational success: Mediation by family interactions, child aggression, and teenage aspirations. *Merrill Palmer Q (Wayne State Univ Press)*, 55(3), 224-249. <http://dx.doi.org/10.1353/mpq.0.0030>.
- Edwards, K., & Quinter, M. (2011). Factors influencing students career choices among secondary school students in Kisumu municipality, Kenya. *Journal of Emerging Trends in Educational Research and Policy Studies*, 2(2), 81-87.
- Farh, J. L., Leong, F. T. L., & Law, K. S. (1998). Cross-cultural validity of Holland's model in hong kong. *Journal of Vocational Behavior*, 52(3), 425-440. <http://dx.doi.org/10.1006/jvbe.1997.1631>.
- Fouad, N. A. (2002). Cross-cultural differences in vocational interests: Between-group differences on the Strong Interest Inventory. *J. of Counseling Psychology*, 49, 283-289.
- Friesen, J. D. (1981). Vocational counselling: Help from the social sciences. *Direction*, 10(4), 22-25.

- Gies, V. (1990). Developing a personal career counseling theory: An overview of the theories of Donald Super and David Tiedman. *Guidance and Counseling, 6*(1), 1–5.
- Gottfredson, L. S. (1996). A theory of circumspection and compromise. In D. Brown & L. Brooks (Eds.), *Career, choice and development: Applying contemporary theories to practice* (pp. 179-232). San Francisco, CA: Jossey-Bass Publishers.
- Hansen, J. C. (1987). Cross-cultural research on vocational interests. *Measurement and Evaluation in Counseling and Development, 19*, 163-176.
- Harrington, T. F., & O'Shea, A. T. (1993). *The Harrington-o'shea career decision-making system revised manual*. Circle Pines, MN: American Guidance Service.
- Hartung, P. J., Porfeli, E. J., & Vondracek, F. W. (2005). Child vocational development: A review and reconsideration. *Journal of Vocational Behavior, 66*(3), 385-419. <http://dx.doi.org/10.1016/j.jvb.2004.05.006>.
- Hellerstein, J. K., & Morrill, S. M. (2011). Dads and daughters: The changing impact of fathers on women's occupational choices. *J. of Human Resources, 46*(2), 333-372.
- Holland, J. L. (1985). *Making of vocational choices: A theory of vocational personalities and work environments*. Englewood Cliffs, NJ: Prentice Hall.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments*. Englewood Cliffs, NJ: Prentice Hall.
- Kalchik, S., & Oertle, K. (2010). *The integral role of career development in supporting programs of study and career pathways*. Champaign, IL: University of Illinois at Urbana-Champaign College of Education.
- Kamis, A., Bakar, Ab. R., Hamzah, R., Asimiran, S. A., & Halim, N. A. (2013). Competency assessment of clothing fashion design: Rasch measurement model for construct validity and reliability. *J. of Technical Education and Training, 5*(21), 1-13.
- Kaskey, V. (2012). An Investigation into a career day on a student's choice of profession. *International Journal of Business and Social Science, 3*(14), 53-58.
- Kidd, J. M. (2006). *Understanding career counseling: Theory, research and practice*. London: SAGE Publication.
- Kohler, C., & Hartig, J. (2017). Practical significance of item misfit in educational assessment. *Applied Psychological Measurement, 41*(5) 388–400. <http://dx.doi.org/10.1177/0146621617692978>.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior, 45*(1), 79–122. <http://dx.doi.org/10.1006/jvbe.1994.1027>.
- Leong, F. T. L., Austin, J. T., Sekaran, U., & Komarraju, M. (1998). An evaluation of the crosscultural validity of holland's theory: Career choices by workers in India. *J. of Vocational Behavior, 52*(3), 441-455. <http://dx.doi.org/10.1006/jvbe.1997.1637>.

- Long, L., Adams, R. S., & Tracey, T. J. G. (2005). Generalizability of interest structure to china: Application of the personal globe inventory. *Journal of Vocational Behavior*, 66(1), 66-80. <http://dx.doi.org/10.1016/j.jvb.2003.12.004>.
- Low, K. S., Yoon, M., Roberts, B. W., & Rounds, J. (2005). The stability of vocational interests from early adolescence to middle adulthood: A quantitative review of longitudinal studies. *Psychological Bulletin*, 131, 713-737. <http://dx.doi.org/10.1037/0033-2909.131.5.713>.
- Magnuson, C. S., & Starr, M. F. (2000). How early is too early to begin life career planning? The importance of the elementary school years. *Journal of Career Development*, 27(2), 89-101. <http://dx.doi.org/10.1177/089484530002700203>.
- Meijer, R. R. (1996). Person-fit research: An introduction. *Applied Measurement in Education*, 9(1), 3-8. http://dx.doi.org/10.1207/s15324818ame0901_2.
- Nauta, M. M. (2010). The development, evolution, and status of Holland's theory of vocational personalities: Reflections and future directions for counseling psychology. *Journal of Counseling Psychology*, 57 (1), 11-22.
- Nyamwange, J. (2016). Influence of student's interest on career choice among first year university students in public and private universities in Kisii County, Kenya. *Journal of Education and Practice*, 7(4), 96-102.
- Nye, C. D., Su, R., Rounds, J., & Drasgow, F. (2012). Vocational interests and performance: A quantitative summary of over 60 years of research. *Perspectives on Psychological Science*, 7, 384-403. <http://dx.doi.org/10.1177/1745691612449021>.
- Obiunu, R. Fr. J. J., & Ebunu, O. R. (2010). Factors affecting career development of senior secondary school students in ethiopia east local government area, delta state, Nigeria. *Educational Research*, 1(11), 594-599.
- Orlando, M., & Thissen, D. (2000). Likelihood-based item-fit indices for dichotomous item response theory models. *Applied Psychological Measurement*, 24, 50-64.
- Porfeli, E. J., & Vondracek, F. W. (2009). *Career development, work, and occupational success*. In M. C. Smith, & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development* (pp. 412-435). New York: Routledge.
- Rande, S., Rahawarin, Y., Jamaluddin, A., & Zacharias, T. (2015). Factors affecting the career development of employees in secretariat office of city Samarinda. *International Journal of Scientific & Technology Research*, 4(3), 93-99.
- Rayman, J. & Atanasoff, L. (1999). Holland's theory and career intervention: The power of the Hexagon. *Journal of Vocational Behavior*, 55, 114-126.
- Rounds, J., & Tracey, T. J. (1996). Cross-cultural structural equivalence of RIASEC models and measures. *Journal of Counseling Psychology*, 43(3), 310-329. <http://dx.doi.org/10.1037/0022-0167.43.3.310>.

- Rounds, J., McKenna, M. C., Hubert, L., & Day, S. X. (2000). Tinsley on Holland: A Misshapen Argument. *Journal of Vocational Behaviour*, 56, 205-215. <http://dx.doi.org/10.1006/jvbe.1999.1738>.
- Rounds, J., & Su, R. (2014). The nature and power of interests. *Current Directions in Psychological Science*, 23, 98–103. <http://dx.doi.org/10.1177/0963721414522812>.
- Santrock, J. W. (2011). *Educational psychology*. Dallas, TX: McGraw-Hill.
- Savickas, M. L., & Spokane, A. R. (1999). *Vocational interests: Meaning, measurement, and counseling use*. Palo Alto, CA: Davies-Black.
- Sciarra, D. T. (2004). *School counseling: Foundations and contemporary issues*. Belmont, California: Brooks/Cole-Thomson Learning.
- Sharf, R. S. (1992). *Applying career development theory to counseling*. Pacific Grove, CA: Brooks/Cole.
- Soh, S., & Leong, F. T. L. (2001). Cross-cultural validation of Holland's theory in Singapore: Beyond structural validity of RIASEC. *Journal of Career Assessment*, 9, 115-133. <http://dx.doi.org/10.1177/106907270100900202>.
- Spokane. (1991). *A comparative study of career maturity and attitude towards modernity of backward and nonbackward class high school students in relation to socioeconomic states* (Unpublished doctoral dissertation). Chandigarh: Punjab University.
- Southern, J. C., & Walters, N. J. (1990). Factors influencing career development. *Journal of Health Occupations Education*, 5(1), 1-16.
- Su, R., Rounds, J., & Armstrong, P. I. (2009). Men and things, women and people: A meta-analysis of sex differences in interests. *Psychological Bulletin*, 135, 859 – 884. <http://dx.doi.org/10.1037/a0017364>.
- Super, D. E. (1954). Career patterns as a basis for vocational counseling. *Journal of Counseling Psychology*, 1(1), 12–20. <http://dx.doi.org/10.1037/h0061989>.
- Super, D. E. (1957). *The psychology of careers*. New York: Harper & Row.
- Super, D. E., Savickas, M. L., & Super, C. M. (1996). The life-span, life-space approach to careers. In D. Brown, & L. Brooks (Eds.), *Career choice and development and Development* (pp. 121–178). San Francisco, CA: Jossey-Bass.
- Tak, J. (2004). Structure of vocational interests for Korean college students. *Journal of Career Assessment*, 12(3), 298-311. <http://dx.doi.org/10.1177/1069072703261555>.
- Taylor, J., Harris, M.B., & Taylor, S. (2004). *Parents have their say...about their college-age children's career decisions*. Pennsylvania: National Association of Colleges and Employers.
- Wagner, W. G. (2003). *Counseling, psychology, and children: A multidimensional approach to intervention*. Upper Saddle River, NJ: Pearson Education.

Yau, J., Smetana, J. G., & Metzger, A. (2009). Young chinese children's authority concepts. *Social Development*, 18(1), 210–229. <http://dx.doi.org/10.1111/j.1467-9507.2008.00463.x>.