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Developing Students' Talent Regarding Vocational Career since Basic Education: Theories' Comprehension

Didik Nurhadi[a,*], Nyan-Myau Lyau[b], Siti Zahro[c]

[a]*Universitas Negeri Malang, Jl. Semarang No.5, Sumbersari, Kota Malang, 65145 Indonesia*
[b]*National Yunlin University of Science and Technology-123 University Road, Section 3, Yunlin, Taiwan*
[c]*Universitas Negeri Surabaya, Jl. Lidah Wetan, Lidah Wetan, Surabaya 60213, Indonesia*
[1]*didik.nurhadi.ft@um.ac.id.ac.id **
**corresponding author*

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ABSTRACT

Each countries have human resources with plenty of remarkable talents that probably have no opportunities to develop their interest to get great job opportunities in the future. Those talents may remain undiscovered unless programs for discovering and developing talents are established and opportunities are provided. To sharpen students' sense of vocation, it is important to provide vocational education introduction for elementary school students so that the government may enhance the quality of human re-sources through developing their talents to boost their professional career. This article aims to explain how to reveal one's talent for the vocation as early at the school age as possible and how to develop it. This study used literature review method with 107 references from international journals' articles and international books regarding vocational studies in basic's education level. The result showed that developing talent through vocational introduction is important to the process of unearthing, harnessing, and developing students' talent since early from elementary school level until post-secondary level. Eventually, this will build students' brilliant career in the future.

I. Introduction

Technological and vocational education is an integral part of education that aims to provide students with a mastery of professional skills, theoretically and practically, through education and training (Dillon, 2008; Mohammed & Mohamed, 2015; Nsamenang & Tchombé, 2012; Nurhadi & Lyau, 2018; Ogundele et al., 2014; Yangben & Seniwoliba, 2014). Based on the Directorate General of Technical and Vocational Education (2015), the objective of Indonesian vocational education is to provide skilled employees with excellent practical knowledge, technology, business, technical knowledge, and vocational skills required in the labor market economic activities, and commercial development. Vocational education also provides training and skills development for aiding students to be financially independent. It is crucially important to ensure that vocational-skill development programs are established not merely for secondary school students but for elementary school students as well (Duan, 2011; Hoogeveen, 2011; Murniati et al., 2020; Urhahne, 2011; Wallace, 2011; Zilic, 2018).

Vocational programs at elementary schools purposes are to provide students with hands-on experiences, as well as the early selection and development of their hidden talents (Edu & Edu, 2013; Feldhusen, 1996). Some research results signify that the development and intervention of vocational education mainly focus on development programs for teenagers and adults. Vondracek (2001) explained that the lack of attention to career development, especially at the elementary school level, leads to complete ignorance in human's crucial period of life for stimulating future career choices. Some other research concluded that people mistakenly consider school age to be solely the time for play and fantasy (Ceci & Bruck, 1993; Lillard et al., 2013). According to other studies, elementary school students are believed to be able to perceive the industrial world through simple practices in their everyday life (Bransford et al., 2000; Collins, 2017; Lai, 2011; Porfeli & Lee, 2012).

Of all research on vocational careers development, most of the empirical research on students' behaviors and attitudes focuses only on junior and senior high school students. Only a minimum amount of research extends its study to students at the elementary school level. Therefore,

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career development at the elementary school level receives deficient attention and development in academic studies for a more comprehensive and solid foundation for student's future career development (Hartung et al., 2005; Sorin & Markotsis, 2008; Watson & McMahon, 2005). This poor condition resulted from two contributing factors. First, the researchers and educational practitioners mainly perceive the elementary school's period to be the time for play and fantasy outside of the industrial world (Hutt et al., 2022; Trice et al., 1995). Second, according to a centuries-old empirical study, children under the age of four and five have an instinctive, basic understanding of the extent of the business world that will be more stable over time (Hartung et al., 2005). However, some researchers have been aware of and recognized the importance of the development of vocational education in elementary schools (Ginzberg et al., 1951; Schachter & Galliher, 2018; Super et al., 1996; Vondracek, 2001).

Such a condition has delayed students' career development, especially in a transitional period from school-leaving age to working age. Nevertheless, some new advanced theories have promoted career development in elementary schools as a formative period in the twentieth century (Porfeli & Lee, 2012; Sokol, 2009; Zimmer-Gembeck & Mortimer, 2006). The vocational education studies at the elementary school level signified that children could arrange working orientation and coherent views of work practice (Allen et al., 2015; Leseman, 2002). Most theories were explored in empirical literature intended for children (Hartung et al., 2005). Subsequently, a framework for developing vocational education should explore the procedures to promote children's position as part of a process and a member of a work roster by gradually improving development orienting end to adults (Berk, 2022; Bransford et al., 2000). This process of exploration may begin early in elementary school. Hartung et al. (Hartung et al., 2005) and Watson and McMahon (2005) found that the development of vocational education probably relates to the feelings and talents of elementary school students.

Generally, vocational education begins to be given to students at secondary school levels. For instance, Indonesian students can acquire technical as well as vocational skills and competencies in secondary schools, universities, technical colleges, and community colleges. Such skills and competencies may also be achieved in public or private training centers, which are administratively under the close supervision of the Ministry of Manpower, which is responsible for educating the young generation to be experts in their expertise.

Although vocational skills have been provided in secondary schools and universities, as mentioned previously, some problems are left unsolved, such as incompletely implemented vocational programs, along with graduates' poor quality and lack of confidence. The failure to accomplish the objectives is most probably induced by inappropriate ways of planning and implementation. However, such failure is also closely related to the absence of early recognition and cultivation of talents, which in turn leads to the development of interest in vocational skills of elementary school students. Advancement and development of countries all over the world are intimately related to their potential to develop their education (Burton, 1969; Tremblay et al., 2012; Whitebread et al., 2012). This is to the fact that schools are institutions in charge of transferring knowledge and improving technology through learning processes. Accordingly, education is significantly expected to contribute to the growth of qualified individuals and the advancement of national development (Breton, 2013; Camilleri & Camilleri, 2016; Hastie, 1959; Ogunyinka et al., 2015). Consequently, the educational system should consider the development of vocational careers at the overall level of education (Conley & Darling-Hammond, 2013; Edu & Edu, 2013; Tan, 2014). This paper subsequently provides a brief overview of problems regarding the early recognition and development of students' vocational skills, as well as the need for vocational education in elementary schools and its implication in students' career development.

II. Method

This research method used a literature review related to developing talent and interest to build a brilliant career through vocational introduction from elementary school focusing on problems regarding the early recognition and development of students' vocational skills, recognizing elementary students' vocational talents, recognizing feedback on students' vocational talents, and implication of the development of vocational careers in elementary schools. More than 66 international journal articles and 41 books were reviewed to create a framework and explain how to develop talent and interest to build a brilliant career in elementary schools. Based on literature review, authors discussed it to provide a more in-depth about how to comprehensive theories for building a brilliant career through developing talent and interest with recognition of vocational studies from elementary education level until post-secondary level.

III. Results and Discussion

According to our theories analysis, we identified four findings, as explained in the following.

A. Problems with Early Detection and Vocational Skills Development of Elementary School Students

Vocational education is an education program explicitly arranged for those who have chosen a particular career opportunity with a serious attempt to achieve it (Ferguson, 2009; Małgorzata, 2010; Schuster & Margarian, 2021; Wolf, 2011). As to career choices, Mahood, (2009) explained that students do not have to

rush into having career preferences as they will carve one out of themselves. However, elaboration on vocational career preparation is necessary (Deil-Amen & DeLuca, 2010; Sampson Jr et al., 2000). This necessitates parents' and teachers' advising students to prepare themselves for their future careers (Faitar & Faitar, 2013; Hairston, 2000; Morse, 1970).

The success of this development program relies heavily on the solvency of some problems related to the absence of early recognition and development of students' talents (Neubauer & Opriessnig, 2014) by providing them with hands-on experiences in elementary schools (Jackson, 2013). The problems arise due to parents' and teachers' total ignorance about the importance of vocational education, their failure to realize the need for unearthing and nurturing children's sense of vocation, along with misunderstanding of professional and vocational careers.

Developing countries, such as Indonesia, began to have full technological awareness in the twentieth century during significant technological development in the United States of America and Taiwan (OECD, 2015). USA and Taiwan have provided their citizens with vocation-and-technology-based education, facilitating them to explore and improve technologies. In response to this growing condition, the Indonesian government has established a significant number of programs, showing its deep interest in the development of technological education at senior high schools and university levels. However, the establishment of these programs provides a minor contribution, as these programs have not been implemented at the elementary school level, squandering elementary students' vocational talent and interest. Recently, elementary schools in Indonesia have focused only on students' academic skills rather than students' talent and interest, which should be enhanced through sharing hands-on experiences with students (Jackson, 2013) and conducting a study visit to workplaces (Behrendt & Franklin, 2014).

Until recently, out-of-date technology has been used in developing countries. They still import almost every aspect of technology. Indonesia is a developing country, and abundant raw materials can be produced in Indonesia, this is exported to and processed in other countries, and the manufactured products made of those materials are exported to Indonesia at a higher price.

This may be related to the fact that educational programs have run on principles other than technology to fail to achieve effective implementation. This poor condition warns the stakeholders to soon make development programs for youth's technological awareness and develop an interest in technical and vocational education to make people live in better conditions of social life. It is, therefore, important for people, schools, and universities to give students' academic experiences and vocational skills for their future careers.

B. Recognizing Elementary Students' Vocational Talents

All elementary students have talents (Gable, 2001) with which they show off their special abilities (Brody & Mills, 1997; Coon, 2005). These students can be highly talented musicians, mathematicians, sportsmen, or experts in other vocational fields (Department for Children, Schools, 2008; McGillicuddy-De Lisi & De Lisi, 2002). Bevan-Brown and Taylor, (2008) described that students with exceptional abilities often show great promise. However, they require assistance from their surroundings to develop these abilities and skills (Zimmerman & Schunk, 2014). Therefore, support from parents, mentors, and teachers is highly instrumental in developing students' skills (Bruce & Bridgeland, 2014; Dembo & Gulledge, 2009; Institute of Medicine, 2004). Good professional examples from their teachers and parents may inspire them to sharpen their own skills (Lampley & Johnson, 2010). Horton, Baker, and Schorer (2008) explained that someone might need to see others' particular skills to develop their expertise. Even in countries with the most advanced technology, parents always monitor and study their children's patterns of behavior and play since they are born (Washbrook et al., 2012; Whitebread et al., 2012). Whitebread et al. (2012) also mentioned that children's interests may be developed through various games and playthings.

In every culture, identifying their children personally and each of their unique and ardent interests is beneficial for parents. Further, parents must take part in facilitating children to find and develop their talents and interests (Ngara, 2013). Therefore, parents may need to make a keen observation about their children's pattern of play activities to thoroughly examine their preference for vocational interest in elementary school age. Also, parents should understand the ways their children adapt to their surroundings. Years of close observation of the pattern of students' play activities will reveal their sense of vocation. Further, in combination with a good counseling session, a carefully made observation will provide students with precise guidance for helping them be what they want and ensure that their chosen career is in line with their given abilities, talents, and interest. Eventually, this may enable them to grow naturally excellently in their chosen field.

Unfortunately, the biggest issue facing Indonesians is their peculiar absence from observing elementary school students' vocational talents. Most Indonesian parents hope their children to be great doctors, lawyers, engineers, or accountants without recognizing the children's inborn talents, much less nurturing them. Most young people, accordingly, work outside their specialist field with a flagging career. More, on the one hand, many parents mistakenly believe that schools carry a burden of responsibility for finding students' talent. On the other

hand, schools regard homes as the right place for talent positioning. Newgent, Lee, and Daniel (2005) showed that woefully uninformed parents assume that elementary students cannot be related to particular talents and abilities, thus, school teachers need to realize that students' skills must progressively be developed to the development of their talents, interest, and intellectual abilities (Akpan et al., 2011; Bailey et al., 2012).

Furthermore, according to Gable (2001) & Silverman et al. (2010), the talents of elementary school students must be recognized as early as possible, with vocational guidance from the parents and teachers. Such vocational guidance refers to a process in which an individual receives some help finding a job and its necessary preparation, including enrolling in a training and development program (Hughes & Karp, 2004; Joubish et al., 2011; Rao, 2013). This constitutes a continuous process that must be begun earlier in the phase of a child's life to encourage those children to be professionals and experts in the needed vocational careers.

C. Feedback on students' Vocational Talents

Discovering vocational talents is an instrument for aiding students in finding the best future career (Alayode et al., 2014; Andersen et al., 2015; Balogh, 2011). According to Brody and Mills (2005), for students' careers, it is crucial to provide relevant feedback at the elementary school level to identify students' vocational talents. If vocational education is the one providing students with visual stimuli, various experiences, perceptive insights, cognitive information, feelings of affection, and psychomotor skills, then efforts to draw students' vocational interest through programs of exploring and building skills to ensure their survivability is necessary on the broader business world. Newgent et al. (2005) described that, in collaboration with parents, an organized vocational education program could help and inspire elementary school students. This is necessary, as vocational education is special education for jobs, where any kind of job is regarded as being exciting and needed by people (Billett, 2011; Lewis, 1998; Symonds et al., 2011; West & Steedman, 2003).

Vocational education can also be defined as the attempt to unearth and discover the innate interest of individuals, particularly the youth, and encourage them to continue improving themselves for their most excellent careers through further studies and practices. This also constitutes an intellectual, educational challenge that every country must face. For example, in developing countries like Indonesia, the Ministry of Manpower and the Ministry in charge of transmigration have sought to eradicate poverty among Indonesian people by establishing programs for vocational training and creating job opportunities so that the considerable potential human resources may be exploited and developed. Through the process, it is known that most Indonesian people have hidden inborn talents for vacation, which educational practitioners fail to discover and develop.

Therefore, locating, developing, and considering every skill and talent of Indonesian people are necessary for their career prospects and opportunities. Besides, providing a labor pool through vocational training required to boost the national economy of Indonesia and developing the country into an advanced country may take a long time. One of the effective ways to realize that labor pool is through developing laborers' skills and talents with advanced development of relevant science and technology to the needs of the labor market.

D. The implication of the Development of Vocational Careers Since Early

The development of vocational careers closely relates to developing business skills of individuals for their future jobs (Billett, 2011). The explanation above shows the urgency of early talent recognition and development at certain levels of education. This ultimately depends on the government's devising effective instruments integrated with the curriculum of elementary education to discover and develop students' vocational talents (Dai & Speerschneider, 2012; Delisle & Squires, 1989). Global Investment and Business Center (2012) said that vocational careers need to be offered and promoted to students of elementary schools, junior high schools, and senior high schools by the accomplishment of major, stated objectives of each level shown in Figure 1.

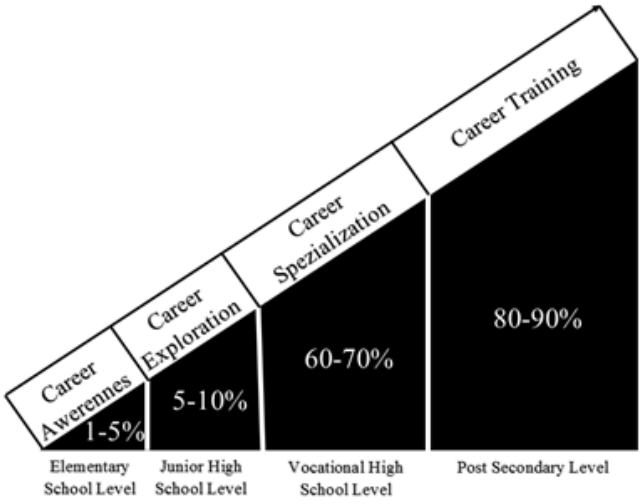

Fig. 1. The Development Scheme of Students' Vocational Careers in Elementary Education

During six years of the learning process in elementary schools, the development of vocational careers is promoted through building students' awareness of career choices. Students need to be encouraged to perceive the business world as closely related to daily work or those in industries. This is arranged to give employees considerable prestige and appreciate the contribution of products of a workgroup. The approach that can be used

herein may be through hands-on experiences and courtesy study visits to workplaces.

The so-called hands-on experiences is knowledge or skills someone receives not only from reading or observing someone's creative process of a product but also from directly practicing manufacturing it (Combley, 2011; Goldin-Meadow, 2018; Holstermann et al., 2010). The latter can be stimulated through technical exercises at home and practical assignments at schools. It is also important for parents to lay a solid foundation for students' professional careers in elementary schools.

The firm foundation of the development of vocational careers excellently built at home and elementary schools will make such development far easier at junior high schools. This intellectual stimulation of students' interest in career development may be given through the introduction to technology. At this level, students may explore job titles and levels through hands-on experiences or workshop sessions at a workplace as an integral part of scientific lessons such as building technology, electronic technology, electronics technology, metal, plastic, and pipe products, image technology, electrical mechanics, and equipment technology.

After graduating from junior high school, students will enroll themselves in senior high schools, where career development turns into career choices. At this level of education, students are encouraged to prepare themselves to embark on careers and continue their study at the post-secondary level in a particular program relevant to their talents nurtured and developed early in elementary schools. The success of vocational training at this stage depends on technical skills and talents developed at previous levels of education. The development of students' careers is recognized and developed by quality professional training whose outputs are prepared to fill the need for qualified technicians in every sector of industries.

IV. Conclusion

The level of vocational career development fostered by a nation via education and training ultimately determines the extent of its natural resource utilization. Early recognition of students' interest in vocation should begin in elementary schools and be adequately nurtured to facilitate students' future development in accordance with each of their skills. This aims to ensure the continuous provision of employees by their talents and skills. That active exploration of career choices will help students attain better jobs by reviving their passionate interests. Furthermore, this enables employees to derive greater job satisfaction from their work. The youth who successfully have jobs relevant to their talents, values, and interests will have better job prospects to reach their desired objective in life. Therefore, it is strictly necessary to tap and develop children's vocational talents at their school age, primarily through the introduction of career development in elementary schools using hands-on experiences and study tours to workplaces. Herein, schools should base career choices not on gender and prestige stereotypes but on vocational options available for them.

References

Akpan, E. O., Nsa, O. E., & Akpan, N. A. (2011). Maintenance of standards in vocational education in Nigeria: Implications for students' occupational choice and skills development. *A Journal of Contemporary Research*, *8*(4), 45–54.

Alayode, A. M., Babalola, A. J., & Oyesegun, O. O. (2014). Designing a template for talent identification and development in sport. *Higher Educ Soc Sci*, *7*, 128–132.

Allen, L., Kelly, B. B., & Council., N. R. (2015). Child development and early learning. In *Transforming the workforce for children birth through age 8: A unifying foundation*. National Academies Press (US).

Andersen, S. S., Houlihan, B., & Ronglan, L. T. (2015). *Managing elite sport systems: Research and practice*. Routledge.

Bailey, R., Pearce, G., Smith, C., Sutherland, M., Stack, N., Winstanley, C., & Dickenson, M. (2012). Improving the educational achievement of gifted and talented students: A systematic review. *Talent Development & Excellence*, *4*(1), 33–48.

Balogh, L. (2011). Theory and practice in one conception. *Talent Development & Excellence*, *3*(1), 29–31.

Behrendt, M., & Franklin, T. (2014). A review of research on school field trips and their value in education. *International Journal of Environmental and Science Education*, *9*(3), 235–245.

Berk, L. E. (2022). *Development through the lifespan*. Sage Publications.

Bevan-Brown, J., & Taylor, S. (2008). Nurturing gifted and talented students. *Wellington, New Zealand: Learning Media Limited*.

Billett, S. (2011). *Vocational education: Purposes, traditions and prospects*. Springer Science & Business Media.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn* (Vol. 11). Washington, DC: National academy press.

Breton, T. R. (2013). The role of education in economic growth: Theory, history and current returns. *Educational Research*, *55*(2), 121–138.

Brody, L. E., & Mills, C. J. (1997). Gifted children with learning disabilities: A review of the issues. *Journal of Learning Disabilities*, *30*(3), 282–296.

Brody, L. E., & Mills, C. J. (2005). Talent search research: What have we learned? *High Ability Studies*, *16*(1), 97–111.

Bruce, M., & Bridgeland, J. (2014). The mentoring effect: Young people's perspectives on the outcomes and availability of mentoring. *Washington, DC: Civic Enterprises with Hart Research Associates*.

Burton, L. (1969). Education and development. *British Journal of Educational Studies*, *17*(2), 129–145.

Camilleri, M. A., & Camilleri, A. (2016). Education and social cohesion for economic growth. *International Journal of Leadership in Education*, *19*(5), 617–631.

Ceci, S. J., & Bruck, M. (1993). Suggestibility of the child witness: a historical review and synthesis. *Psychological Bulletin*, *113*(3), 403.

Collins, T. M. (2017). A child's right to participate: Implications for international child protection. *The International Journal of Human Rights*, *21*(1), 14–46.

Combley, R. (2011). *Cambridge business English dictionary*. Cambridge University Press.

Conley, D. T., & Darling-Hammond, L. (2013). *Creating systems of assessment for deeper learning*. Stanford Center for Opportunity Policy in Education.

Coon, D. (2005). *Psychology: A modular approach to mind and behavior*. Cengage Learning.

Dai, D. Y., & Speerschneider, K. (2012). Cope and grow: A model of affective curriculum for talent development. *Talent Development & Excellence*, *4*(2), 181–199.

Deil-Amen, R., & DeLuca, S. (2010). The underserved third: How our educational structures populate an educational underclass. *Journal of Education for Students Placed at Risk*, *15*(1–2), 27–50.

Delisle, J., & Squires, S. (1989). Career development for gifted and talented youth: Position statement Division on Career Development (DCD) and The Association for the Gifted (TAG). *Journal for the Education of the Gifted*, *13*(1), 97–104.

Dembo, R., & Gulledge, L. M. (2009). Truancy intervention programs: Challenges and innovations to implementation. *Criminal Justice Policy Review*, *20*(4), 437–456.

Department for Children, Schools, and F. (2008). *Effective provision for gifted and talented children in primary education*. Department for Children, Schools, and Families.

Dillon, J. (2008). A review of the research on practical work in school science. *King's College, London*, 1–9.

Duan, X. (2011). Culture free identification of gifted children: Based on elementary cognitive tasks. *Talent Development & Excellence*, *3*(1), 51–52.

Edu, D. O., & Edu, G. O. (2013). Exploiting the vocational interest of the Nigerian child for informed choice of vocational careers. *American International Journal of Contemporary Research*, *3*(5), 93–98.

Faitar, G. M., & Faitar, S. L. (2013). Teachers' influence on students' science career choices. *American International Journal of Social Science*, *2*(5), 10–16.

Feldhusen, J. F. (1996). How to identify and develop special talents. *Educational Leadership*, *53*(5), 66–69.

Ferguson, F. (2009). *Careers in focus: Education 2nd edition*. Ferguson Publishing.

Gable, S. (2001). Nurturing children's talents. In *Human Environmental Sciences*.

Ginzberg, E., Ginsburg, S. W., Axelrad, S., & Herma, J. L. (1951). Occupational choice. In *Occupational Choice*. Columbia University Press.

Global Investment and Business Center. (2012). *Taiwan country study guide: Strategic information and development*. International Business Publications.

Goldin-Meadow, S. (2018). Taking a hands-on approach to learning. *Policy Insights from the Behavioral and Brain Sciences*, *5*(2), 163–170.

Hairston, J. E. (2000). How parents influence African American students' decisions to prepare for vocational teaching careers. *Journal of Career and Technical Education*, *16*(2), 5–15.

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. https://doi.org/10.1016/j.jvb.2004.-05.006

Hastie, R. (1959). Art education: The individual and society. *Art Education*, *12*(6), 5–7.

Holstermann, N., Grube, D., & Bögeholz, S. (2010). Hands-on activities and their influence on students' interest. *Research in Science Education*, *40*, 743–757. https://doi.org/http://dx.doi.org/10.1016/j.jvb.2004.05.006

Hoogeveen, L. (2011). Academic talent development for every talented student. *Talent Development & Excellence*, *3*(1), 71–73.

Horton, S., Baker, J., & Schorer, J. (2008). Expertise and aging: Maintaining skills through the lifespan. *European Review of Aging and Physical Activity*, *5*(2), 89–96.

Hughes, K. L., & Karp, M. M. (2004). *School-based career development in an age of accountability: A synthesis of the literature*.

Hutt, S. J., Tyler, S., Hutt, C., & Christopherson, H. (2022). *Play, exploration and learning: a natural history of the pre-school*. Taylor & Francis.

Institute of Medicine. (2004). *A focus on communities*. The National Academies Press.

Jackson, J. (2013). Hands-on or Hands-off: Effective elements of elementary Social Studies Hands-on Lessons. *Senior Hons Thesis, Published. The Spectrum: A Scholars Day Journal*, *2*.

Joubish, M. F., Khurram, M. A., Haider, K., Fatima, S. T., & Ahmed, A. (2011). Research in vocational guidance: some guidelines. *Middle-East Journal of Scientific Research*, *7*(5), 801–808.

Lai, E. R. (2011). Critical thinking: A literature review. *Pearson's Research Reports*, *6*(1), 40–41.

Lampley, J. H., & Johnson, K. C. (2010). Mentoring at-risk youth: Improving academic achievement in middle school students. In *Nonpartisan Education Review* (Vol. 6, Issue 1).

Leseman, P. (2002). Early childhood education and care for children from low-income or minority backgrounds. *A Paper for Discussion at the OECD Oslo Workshop*.

Lewis, T. (1998). Vocational education as general education. *Curriculum Inquiry*, *28*(3), 283–309.

Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., & Palmquist, C. M. (2013). The impact

of pretend play on children's development: a review of the evidence. *Psychological Bulletin*, *139*(1), 1.

Mahood, L. (2009). *Feminism and voluntary action: Eglantyne Jebb and Save the Children, 1876–1928*. Springer.

Małgorzata, K. (2010). *OECD reviews of vocational education and training: A learning for jobs review of the Czech Republic 2010* (Vol. 2010). OECD Publishing.

McGillicuddy-De Lisi, A. V., & De Lisi, R. (2002). *Biology, society, and behavior: The development of sex differences in cognition* (Vol. 21). Greenwood Publishing Group.

Mohammed, H., & Mohamed, W. A. W. (2015). Reducing recidivism rates through vocational education and training. *Procedia-Social and Behavioral Sciences*, *204*, 272–276.

Morse, W. C. (1970). If schools are to meet their responsibilities to all children. *Childhood Education*, *46*(6), 299–303.

Murniati, T., Tentama, F., & Santosa, B. (2020). Vocational skills education to grow the junior high school studentsâ€™ work intention. *Journal of Vocational Education Studies*, *3*(1), 39–48.

Neubauer, A. C., & Opriessnig, S. (2014). The development of talent and excellence: Do not dismiss psychometric intelligence, the (potentially) most powerful predictor. *Talent Development & Excellence*, *6*(2), 1–15.

Newgent, R. A., Lee, S. M., & Daniel, A. F. (2005). Career counselling strategies for school counsellors: Addressing needs and risk barriers of at risk elementary students. *Career Convergent Web Magazine*.

Ngara, C. (2013). The talent development model: An African perspective of Shona culture. *Talent Development & Excellence-Special Issue on the Elusive Search for the Gifted Personality*, *5*(2), 23–30.

Nsamenang, A. B., & Tchombé, T. M. (2012). *Handbook of African educational theories and practices: A generative teacher education curriculum*. Hdrc.

Nurhadi, D., & Lyau, N. M. (2018). Cultivating responsibilities of vocational teachers: a framework for preparing education to work. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *24*(2), 295–302.

OECD. (2015). *Education in Indonesia: Rising to the challenge*. OECD Publishing.

Ogundele, A. G., Feyisetan, C. T., & Shaaba, G. P. (2014). Technical education as a vital tool for skill acquisition through guidance and counseling for nation building. *American Journal of Educational Research*, *2*(1), 50–53.

Ogunyinka, E. K., Okeke, T. I., & Adedoyin, R. C. (2015). Teacher education and development in Nigeria: An analysis of reforms, challenges and prospects. *Education Journal*, *4*(3), 111–122.

Porfeli, E. J., & Lee, B. (2012). Career development during childhood and adolescence. *New Directions for Youth Development*, *134*, 11–22.

Rao, S. (2013). *Counselling and guidance*. Tata McGraw-Hill Education.

Sampson Jr, J. P., Peterson, G. W., Reardon, R. C., & Lenz, J. G. (2000). Designing career services to cost-effectively meet individual needs. *Unpublished Manuscript, Florida State University, Center for the Study of Technology in Counseling and Career Development, Tallahassee [On-Line]. Available: Http://Www. Career. Fsu. Edu/Techcenter/BOOKSU-MBnew. Html*.

Schachter, E. P., & Galliher, R. V. (2018). Fifty years since "Identity: Youth and crisis": A renewed look at Erikson's writings on identity. *Identity*, *18*(4), 247–250.

Schuster, K., & Margarian, A. (2021). Vocational training choice from a regional perspective. *Empirical Research in Vocational Education and Training*, *13*(1), 3. https://doi.org/10.1186/s40461-020-00105-9

Silverman, J. L., Yang, M., Lord, C., & Crawley, J. N. (2010). Behavioural phenotyping assays for mouse models of autism. *Nature Reviews Neuroscience*, *11*(7), 490–502.

Sokol, J. T. (2009). Identity development throughout the lifetime: An examination of Eriksonian theory. *Graduate Journal of Counselling Psychology*, *1*(2), 1–11.

Sorin, R., & Markotsis, J. (2008). *Building a solid foundation for school: A communities approach* (Vol. 1). Australian Research Alliance for Children & Youth.

Super, D. E., Savickas, M. L., & Super, C. M. (1996). The life-span, life-space approach to careers. *Career Choice and Development*, *3*, 121–178.

Symonds, W. C., Schwartz, R., & Ferguson, R. F. (2011). *Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century*.

Tan, D. (2014). Engineering technology, engineering education and engineering management. *Proceedings of the 2014 International Conference on Engineering Technology, Engineering Education and Engineering Management (Eteeem 2014)*.

Tremblay, K., Lalancette, D., & Roseveare, D. (2012). Assessment of higher education learning outcomes. *Feasibility Study Report*, *1*(1), 6–18.

Trice, A. D., Hughes, M. A., Odom, C., Woods, K., & McClellan, N. C. (1995). The origins of children's career aspirations: IV. Testing hypotheses from four theories. *The Career Development Quarterly*, *43*(4), 307–322.

Urhahne, D. (2011). Teachers' judgments of elementary students' ability, creativity and task commitment. *Talent Development & Excellence*, *3*(2), 229–237.

Vondracek, F. W. (2001). The developmental perspective in vocational psychology. *Journal of Vocational Behavior*, *59*(2), 252–261.

Wallace, B. (2011). Inclusion and differentiation for children with high potential. *Talent Development & Excellence*, *3*(1), 111–113.

Washbrook, E., Waldfogel, J., Bradbury, B., Corak, M., & Ghanghro, A. A. (2012). The development of young children of immigrants in Australia, Canada, the United Kingdom, and the United States. *Child Development*, *83*(5), 1591–1607.

Watson, M., & McMahon, M. (2005). Children's career development: A research review from a learning perspective. *Journal of Vocational Behavior*, *67*(2), 119–132.

West, J., & Steedman, H. (2003). *Finding our way: vocational education in England* (Issue CEPOP18). Centre for Economic Performance, London School of Economics and Political ….

Whitebread, D., Basilio, M., Kuvalja, M., & Verma, M. (2012). The importance of play. *Brussels: Toy Industries of Europe*.

Wolf, A. (2011). *Review of vocational education: The wolf report*. Institute of Education.

Yangben, P. N., & Seniwoliba, J. A. (2014). *Career challenges in construction craft training in technical vocational education and training in Ghana*.

Zilic, I. (2018). General versus vocational education: Lessons from a quasi-experiment in Croatia. *Economics of Education Review*, *62*, 1–11.

Zimmer-Gembeck, M. J., & Mortimer, J. T. (2006). Adolescent work, vocational development, and education. *Review of Educational Research*, *76*(4), 537–566.

Zimmerman, B. J., & Schunk, D. H. (2014). *Educational psychology: A century of contributions: A project of division 15 (educational psychology) of the American psychological society*. Routledge.