

# A Learning Model Based on Doing Empowering and Facilitating to Improve Life Skills

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Received: October 11, 2023

Revised: January 4, 2024

Accepted: March 25, 2024

Published: March 31, 2024

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DOI: [10.29303/jppipa.v10i3.5630](https://doi.org/10.29303/jppipa.v10i3.5630)

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**Abstract:** This research formulates learning models to improve life skills through doing, empowering and facilitating (DEFI). The developed model puts affective, cognitive, and psychomotoric forward. The object of research is students of heavy equipment mechanic competence. Data collection is obtained through observation, interview, questionnaire, documentation and literature study. Quantitative and qualitative analysis methods for goodness of fit model are data analysis and experimental tests. The t-test value hypothesis is used to determine the average test group as a measure of the effectiveness of the model's work, and the resulting learning model model is effective in improving life skills.

**Keywords:** Improvement; Learning; Life skills; Model

## Introduction

The advancement of the industrial and technological world is always characterized by change, competitiveness, complexity of a problem, demanding college graduates to quickly improve so that graduates are able to be competitive (Suranto, 2011). The government encourages the world of education to be in harmony and cooperation with business and industry so that graduates are ready to be independent, ready to work and be absorbed in the labor market with the knowledge, skills and attitude expected by the world of work (Suranto, 2006).

Generating competitive graduates requires a synergy of educational elements including: methods, strategies, infrastructure and a number of other learning inputs. It is in line with the mandate of Indonesian Law No. 2 of 1989 concerning the National Education System, which states that "education is a conscious effort to prepare students through guidance, teaching and training activities for their future roles". Education does not only provide knowledge, transfer material and develop knowledge but also provides skills in self-

development, mental training, soul, attitude, habits, strengthening good character and value systems needed in the development of knowledge and work readiness (Kemendikbud, 2003).

Based on data from the Central Bureau of Statistics, Indonesia's open unemployment rate (TPT) in August 2022 was 5.86% or 8.42 million people. Meanwhile, the TPT for vocational graduates reached 9.42%. In 2021 it was 13.55% and 2022 it was 11.13%. Meanwhile, for senior high school (SMA) it was 8.57%, and junior high school (SMP) with 5.95%. Diploma and Strata I, II and III graduates contributed to the TPT with 4.59% and 4.80% respectively. The lowest was elementary school graduates with 3.59%. Based on gender, the largest TPT was for males with 5.93% and females with 5.75%. TPT is most prevalent in urban areas and the age is around 15-24 years old. Based on the data, there were at least 7.99 million unemployed people in Indonesia as of February 2023, a decrease of 411 thousand people compared to the same period in 2022 (BPS, 2023). The research was conducted for students in vocational education at X university, where the problems that occur: graduates are unprepared to deal with the world

## How to Cite:

Suranto, Nugroho, M. T., Syah, M. F. J., & Pratiwi, A. (2024). A Learning Model Based on Doing Empowering and Facilitating to Improve Life Skills. *Jurnal Penelitian Pendidikan IPA*, 10(3), 1461-1468. <https://doi.org/10.29303/jppipa.v10i3.5630>

of work, and graduates are not proficient in their work, there are graduates who are graduates who are unemployed.

Therefore, research on the development of competency-based learning models: doing, empowering, facilitating (DEFI) for strengthening knowledge, skills, attitude, and improving life skills (lifeskill) is urgently needed. It will have an impact graduates of these universities have high job employment, and are able to create their own job opportunities, and are more job creators.

The above phenomenon is an indication that the orientation of education to graduate more independent students with certain competency achievements has not been achieved optimally. It means that there are still problems in education, especially the education, training and learning model. Through skill-based learning materials, graduates are expected to have certain skills in self-awareness, rational thinking, social knowledge skills (Suranto, 2013; Agus, 2020).

The strategy is in the form of planning the right learning model for learning activities in the classroom using the object of students in the field of heavy equipment mechanical competence. The competence of heavy equipment mechanics is expected that affective, cognitive and psychomotor aspects can be covered properly. The principle of developing learning models aims to create teaching and learning situations that are more effective and efficient, fun, meaningful, and activate the role of students in order to have complete learning outcomes and certain competencies.

Learning methods developed are based on doing (direct action based on practice), empowering (emphasizing psychomotor aspects, so that they are able to analyze synthesis) and facilitating (strengthening with internship facilities in the business world, the industrial world, or the world of work). Learning is carried out in an Active, Innovative, Creative and Fun, Joyful and Weighty (PAIKEM GEMBROT) manner, in the implementation of the curriculum in accordance with Government Regulation Number 19 of 2005 concerning National Education Standards (Ina et al., 2020).

The key in learning is competence in the form of life skills, creativity and innovation so that students are able to create an idea, build new meaning from the prior knowledge that students already have. Students as learning subjects do not consume ideas but instead create ideas in the learning process facilitated by educators. Educators as facilitators should be able to facilitate the realization of active, innovative, creative, effective and fun, joyful and weighty learning (Ina et al., 2020; Asrof, 2020).

Doing-based learning, empowering and facilitating

as a teaching and learning approach method that emphasizes psychomotor, skills around 70%, affective and cognitive 30%, which is based on active, innovative, creative, effective, and fun activities. Doing learning is intended in the learning process to focus on students actively doing certain practices and skills. Empowering learning as a learning process that brings up positive new ideas (innovation) of students by strengthening the potential to improve competence, both affective and cognitive, so as to bring out creativity and encourage students to participate more in learning. Facilitating learning as reinforcement in industrial internship activities, so that students can directly strengthen affective, cognitive and psychomotor. Learning based on the concept of learning is fun is the key applied in innovative learning (Asrof, 2020; Iis et al., 2013).

The research formulation, which was developed: whether the goodness of fit parameters of the model meet the criteria of validity and feasibility, and what the impact of implementing the developed competency model is. Research is useful for institutions/organizations that have a commitment in the field of improving graduate skills, educators, the results of the research as correction and feedback in order to improve the skills of students; and for parties who have an interest and concern for skills training, life skills as information in determining steps of coordination, collaboration, and synchronization with various related parties.

The final achievement of the research is in the form of a life skills improvement model. This research has advantages and novelty about improving the competency skills of learners who have specific advantages a flexible can be applied to formal and non-formal education, applicable can be applied to high school to college students, visible has a vision and target of improving life skills competencies in certain fields, integration is carried out simultaneously in classroom learning and internships in the business world and the industrial world (Suranto, 2011; Suranto, 2006). Research to improve learners' life skills is developed in an integrated manner that is carried out in conjunction with learning in the classroom and outside the classroom, according to the concept of the competency model as shown in Figure-1.

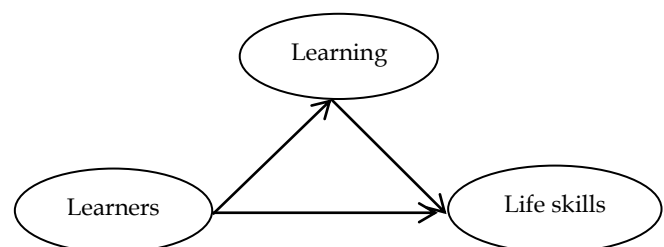


Figure 1. DEFI based learning model

Learning strategies consider the development, existence and potential of students who have abilities and intelligence by organizing learning programs to develop excellence in intellectual potential and special talents that are skills (gifted and talented). Students follow learning courses in the classroom and internships.

The competency characteristics required for prospective students in the form of life skills include: self-awareness skills, rational thinking, social knowledge skills or behavior Rauda et al. (2020); Minarni (2022), in accordance with competencies in heavy equipment mechanics.

The concept of learning by applying doing, empowering and facilitating to improve the competence of students, with learning materials that are integrated with classroom lectures and internship activities. It

consists of 30% theoretical activities and 70% practice in workshops and internships. There are 3 latent variables used in this research, namely learning with 3 manifest indicators: doing, empowering, facilitating with a set of materials, strategies, learning concepts. Learner variables, with 4 indicators: knowledge, skills, behavior, willingness to learn. Outcomes in the form of life skills variables with 4 indicators of life skills in the category: knowing yourself, thinking rationally, skills, social behavior (Suranto, 2016; Rauda et al., 2020; Minarni, 2022; Sri, 2017; Mislaini, 2017). The structure of the structural model of learning based on Doing, empowering facilitating (DEFI), according to Figure-2. It is explained that there are 15 items on the learning variable, 20 items on the learner variable and 16 items on the life skills variable (Suranto, 2016).

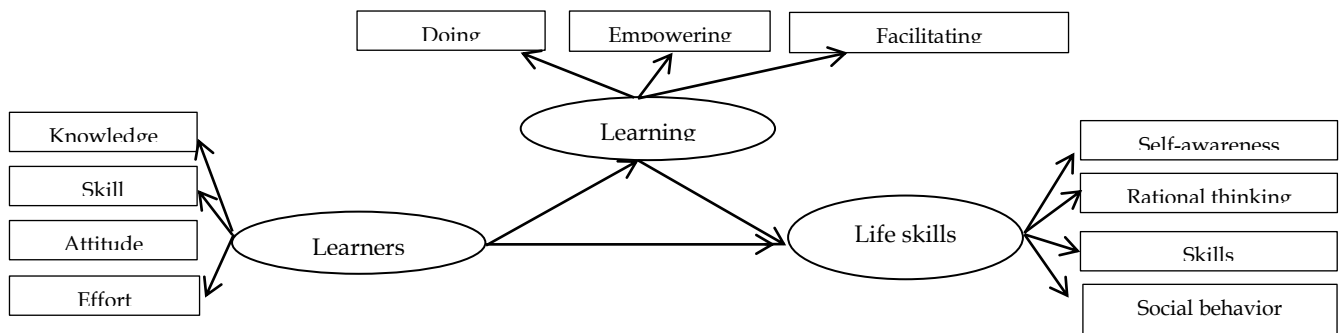


Figure 2. DEFI based learning model

Learning components in improving life skills, containing the contents of the components of the developed model have stages, each component has

content in it. The components, the contents of each sub-component are shown in Figure -3.

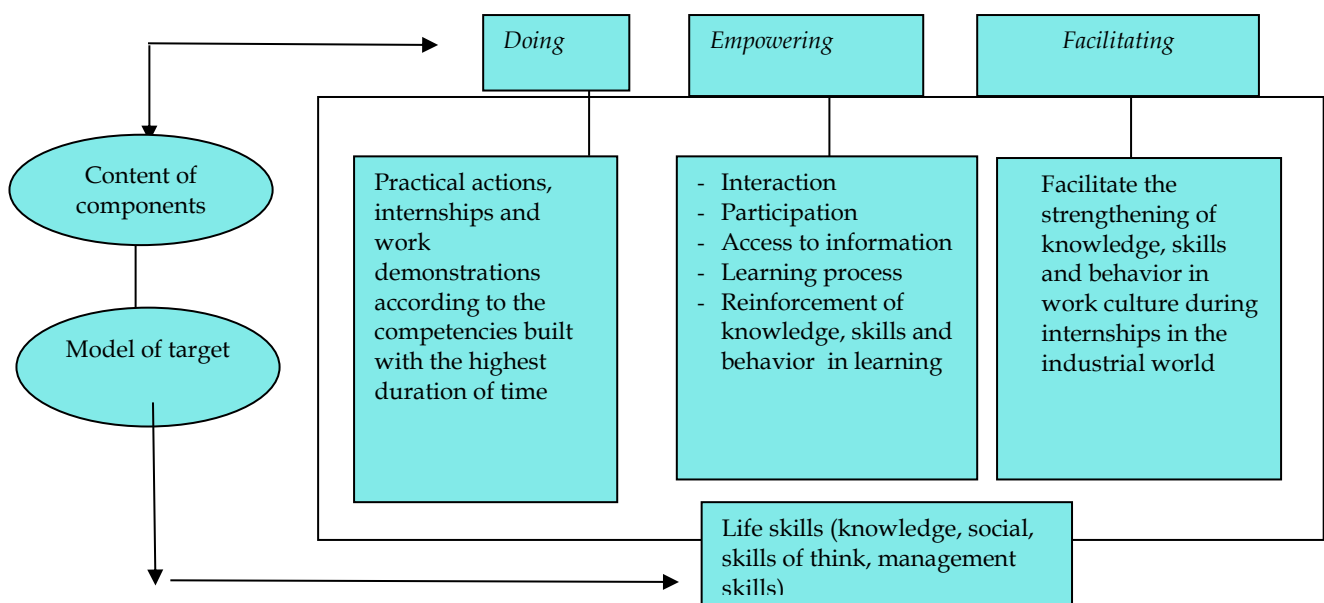


Figure 3. Components and learning model contents of DEFI

**Method**

The object in this research activity is carried out on students, in the field of heavy equipment mechanics (engineering). Research activities are carried out in order to improve the competence of students' life skills, so that graduates are quickly absorbed in the labor market or independently. The population in this research is all students in the heavy equipment mechanic competency, with a total of 100 students.

The research approach is mixed method, by combining quantitative and qualitative to strengthen the research data. After analyzing the data, it is known that the goodness of fit model is fulfilled, then test experiments on development research according to the procedures proposed by Borg and Gall (Soegiyono, 2020). Data collection techniques through questionnaires, structured interviews, observation, and documentation. Questionnaires were given to students, to test manifest variables that reflect latent variables. Content validity is a validity that is calculated through testing the content of the instrument measuring instrument. Construct validity is an instrument based on theory/concept that uses the opinions of experts based on empirical experience in the field (Soegiyono, 2020). The requirements test using the normality test is used to prove that the sample used in the population is normally distributed, and the homogeneity test is used to determine whether the variance of the student group data from the research variables is the same. The t-test value hypothesis is used to determine the average of the test group to serve as a measure of the effectiveness of the model's work.

The research steps of problem identification and goal determination are followed by data collection through questionnaires, interviews and testing the applicability of the variable model developed. Objects were taken with 100 heavy equipment mechanic students, using qualitative and quantitative data to support objective data, then validity and reliability tests were carried out (the results were valid and reliable) of the questionnaire items developed. Continue with the confirmatory factor analysis (CFA) test and the model is tested with the results of the goodness of fit model (good and feasible), the three latent variables have their own manifest and the latent variable has a relationship with other variables. The model developed was applied and the results were effective in improving life skills.

**Results and Discussion**

Instrument Development and Testing Phase is carried out through stages, namely, the development and testing of questionnaire instruments, validation of

the hypothetical model, that all items are declared valid and reliable, and the stage of testing the working effectiveness of the model by measuring hypothetical validation. Activities carried out in the first stage, namely instrument testing in hypothetical model validation, aim to measure the goodness of fit of the model developed (Soegiyono, 2020). The second stage of model applicability testing consists of several activities, namely testing the effectiveness of the model, and observing the trend of changes in students' life skills. Model validation using Confirmatory Factor Analysis (CFA) measures the confirmatory manifests in the model. CFA aims to confirm whether: the model is effectively applied, and, the manifest variables are proven to reflect the latent variables (Soegiyono, 2020).

Instrument Validation occurs once the analysis. Model validation is carried out, which is called the original model, and has achieved Goodness of Fit (GOF), according to the model equation. Goodness Of Fit (GOF) suitability aims to evaluate the fit between the sample covariance and the population. If the results are appropriate, it means that the model has empirical support so that no changes or modifications are needed and the model gets good and fit results, according to table-1. The next step is to test the results of the structural test, which is useful for determining the correlation among variables in the life skills competency model, according to table-2.

**Table 1.** The result of goodness of fit index model

Number	Index	Cut of Value	Result	Note
1	Kai Kuadrat	Kecil	2630.1	
	(p)	(p > 0.05)	0.53	Fulfilled
2	CFI	≥ 0.90 (max 1)	0.94	Fulfilled
3	GFI	≥ 0.90 (max 1)	0.91	Fulfilled
4	AGFI	≥ 0.90 (max 1)	0.90	Fulfilled
5	RMSEA	≤ 0.08 (Min 0)	0.06	Fulfilled

The first function obtained the equation, Learning = 0.68, where the t-count is 6.764. The t-count value > t-table (df = 100, α = 5%) of 2.021 indicates that there is a significant effect of learning variables on life skills. While the contribution (reflection) of students' competence to learning is 32.00%, as a single variable the contribution can be said to be quite large. Because it indicates the remaining contribution of 68.00%, it will be divided by several other variables that can be developed, such as: self-development training, workshops, and others.

t-table (df = 100, α = 5%) = 2.021, t-count ≥ 2.021 = sig dan t-count < 2.021 = not sig. Table-2 shows that there are two functions in the competency model, the first function explains the effect of students on learning, the second function explains the effect of students and learning on the achievement of life skills outcomes. The

two functions explain the effect of student learning on the achievement of life skills outcomes indirectly through learning programs and student competencies.

**Table 2.** Structural testing results

Function	Endogenous	Exogenous	$\gamma$	$\beta$	t-hit	Note*	R <sup>2</sup>
1	Learning (X2)	Students (X1)	0.68		6.76	Sig	0.39
2	Life skills (Y)	Students (X1)	0.32		4.64	Sig	0.38
		Learning (X2)		0.47		5.30	

The exogenous competence of students together with learning has an effect on the achievement of life skills outcomes. This meaningfulness is indicated by the  $t\text{-count} > t\text{-table}$  for each exogenous. The form of the influence equation can be written: Outcomes of life skills = 0.32 learner competence + 0.48 learning DEFI.

The combined contribution of the two to the achievement of 47.00% means that the achievement of student skill outcomes can be explained by the life skills competency model. This contribution also shows that students' life skills can not only be formed through learning and initial competence of students, but must be formed with other variables, such as: workshops, self-development, etc.

The findings of the model answer some questions about the ability of the aspects to construct the variables

in the model. That all attribute aspects contribute in reflecting the latent variables. It is explained that DEFI learning and students' initial competencies are able to improve life skills and are effective to be applied in order to improve life skills competencies.

Based on table-3, structural testing proves empirically that the achievement of life skills competency outcomes can be explained through the DEFI model developed. It supports the theoretical study described earlier, that life skills can be improved through the implementation of the right model.

To determine the effectiveness of the model in improving life skills, the model was applied to 30 students (experimental group) for 6 periods, each period is 1 week. Each period is evaluated for the development of competence or proficiency in mastering heavy equipment mechanic competencies through 20 achievement indicators used in the model.

Based on table-4, it shows the development that occurred, the first week of the life skills period was scored at 2,356, the second week was 2,650, and so on until the sixth week increased. Characteristics of life skills about knowing yourself: knowing your own strengths, weaknesses, and behavior, independent, and feelings. While rational thinking includes: thinking by remembering, classifying, analyzing, evaluating, comparing, predicting, and concluding. Skills include: observing, classifying, communicating, measuring, predicting, vocational and inferring both orally and in writing. Social behavior includes: empathy, generosity, cooperation, compassion, modeling, intervention, consistent habituation, and reinforcement of positive behavior.

**Table 3.** Reflection on structural variable aspects

Variable	Number	Indicator	$\lambda$	t-hit *	Determination
Competency of early students	1	Knowledge	0.86	Reff	73.96
	2	Skill	0.77	9.32	59.29
	3	Behaviour	0.88	6.27	77.44
	4	Willingness to learn	0.76	5.92	57.76
Learning	1	Doing	0.75	Reff	56.25
	2	Empowering	0.68	9.68	46.24
	3	Facilitating	0.89	24.87	79.21
Life skills	1	self-awareness	0.75	Reff	56.25
	2	Rational thinking	0.68	9.68	46.24
	3	Skills	0.89	24.87	79.21
	4	Social behaviour	0.87	15.11	75.69

Based on the results of the research and discussion that has been presented, that learning oriented towards improving life skills by accommodating the competence of students with DEFI-based learning through doing, empowering, facilitating learning programs with practical learning and curriculum changes leads to graduates having certain competencies, ready-to-use life

skills, basic, strong, and more focused able to run effectively.

Learning through the provision of life skills as an ability that a person has to have the courage to deal with life and life problems naturally without feeling depressed, then proactively and creatively seek and find solutions so that they are finally able to overcome them.

Life skills are broader than skills for work, moreover just manual skills. Someone who is pursuing education needs life skills because they certainly also have problems that must be solved. Life skills can be sorted into five, namely: self-awareness skills, which are also often called personal skills; rational thinking skills; social skills; academic skills; and vocational skills (Helwida et al., 2021). Doing, empowering, facilitating learning includes hands-on practice, mechanization work tasks, internships, completion of field assignments, data collection, data analysis, decision making that emphasizes psychomotor aspects. Students have the knowledge, skills and behavior in the competence of heavy equipment mechanics, such as: engine, product knowledge, electrical, etc.

**Table 4.** Development of Experiment Outcome Measures

Indicator	Week					
	1	2	3	4	5	6
Self-awareness	2.35	2.65	2.71	2.89	2.94	3.28
Rational thinking	2.40	2.75	2.83	2.91	3.10	3.25
Skills	2.38	2.60	2.74	2.95	3.02	3.37
Social behavior	2.56	2.64	2.73	2.87	2.92	3.26

The results of the research can be developed for education and training institutions in order to form skills competencies, life skills of students through DEFI-based competency models, competencies that fulfill psychomotor, cognitive and affective aspects (Yuni et al., 2018). For the community and users, DEFI learning models need to be tested in non-formal institutions, for policy makers, that competence not only emphasizes affective and cognitive aspects, but psychomotor aspects through life skills-based implementation.

This model is more effective in helping train and guide students in finding concrete concepts and can build higher thinking patterns (Dewi et al., 2017; Muhammad et al., 2018). Practice-based learning, project-based learning can improve competence and skills (Nishfiya et al., 2019), (Ansari et al., 2015), Practice-based in laboratories, workshops (Masril et al., 2019), (Fitriyani et al., 2015), (Handika & Wangid, 2013), (Trinanda et al., 2018). Practice improves skills (Nurarfah et al., 2022), (Eka et al., 2022), (Soepriyanti et al., 2022). Learning that prioritizes psychomotor skills, skills and potential is supported by knowledge, skills, companions, facilitators, and appropriate learning models that hone students potential and will improve life skills. The practice or role of psychomotor aspects introduces real field learning and analyzes students' knowledge, skills and behavior abilities. Research on

psychomotor aspects, project based learning and skills supports many students competencies and life skills.

The learning process in the classroom is certainly not enough if only applying the learning model (Sriatun, 2020), and media learning, teaching learning (Salsabila et al., 2020). Character Education is used for describe how to teach and educate children in a developing way various life skills such as morals, civil, good, polite, behaved, healthy, critical, successful, traditional, appropriate and or socially accepted. Life skills education includes some aspects, abilities more general (generic life skills). tend to psychosocial education, which contains self-awareness as God's creatures, social creatures and creatures environment. Social skills, communication and interaction skills social, and attitude values such as discipline, responsibility, honesty and polite. Special ability (specific life skills), namely abilities mastery of knowledge (science academic) and mastery ability vocational skills (vocational), namely related to internal work activities maintain life and existence. In short, Law Number 20 of 2003 concerning the Education System National that life skills education is education that provide personal skills, social skills, intellectual skills, and vocational skills for work or independent business (Purnomo, 2019; Wening, 2012; Jaharudin, 2018).

Life skills are used to face life's problems and live naturally without feeling Emphasized, then proactively and creatively search and find solutions so finally able to overcome it. Proficiency life can be divided into two types The main skills are life skills which are generic (generic life skills) and Specific life skills (specific life skills) (Saiful et al., 2020; Uce et al., 2020).

**Conclusion**

The developed model is declared valid, which is based on the GOF (Goodness of Fit test) value. The developed model is able to improve life skills for the competence of students in the field of heavy equipment mechanics.

**Acknowledgments**

Thank you to the group of student at Vocatinal Schooll UMS, and the research informants, data collection team and everyone involved in this research, and Funding LRI UMS.

**Author Contributions**

This article was prepared by four authors, namely S, M.T.N, M.F.J.S., and A.P. All members of the writing team carried out each stage together.

**Funding**

This research received no external funding.

**Conflicts of Interest**

The authors declare no conflict of interest.

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