# Development of Competency-based Modules Instruction to Improve Entrepreneurship Competence on Labor Training Centre Learner

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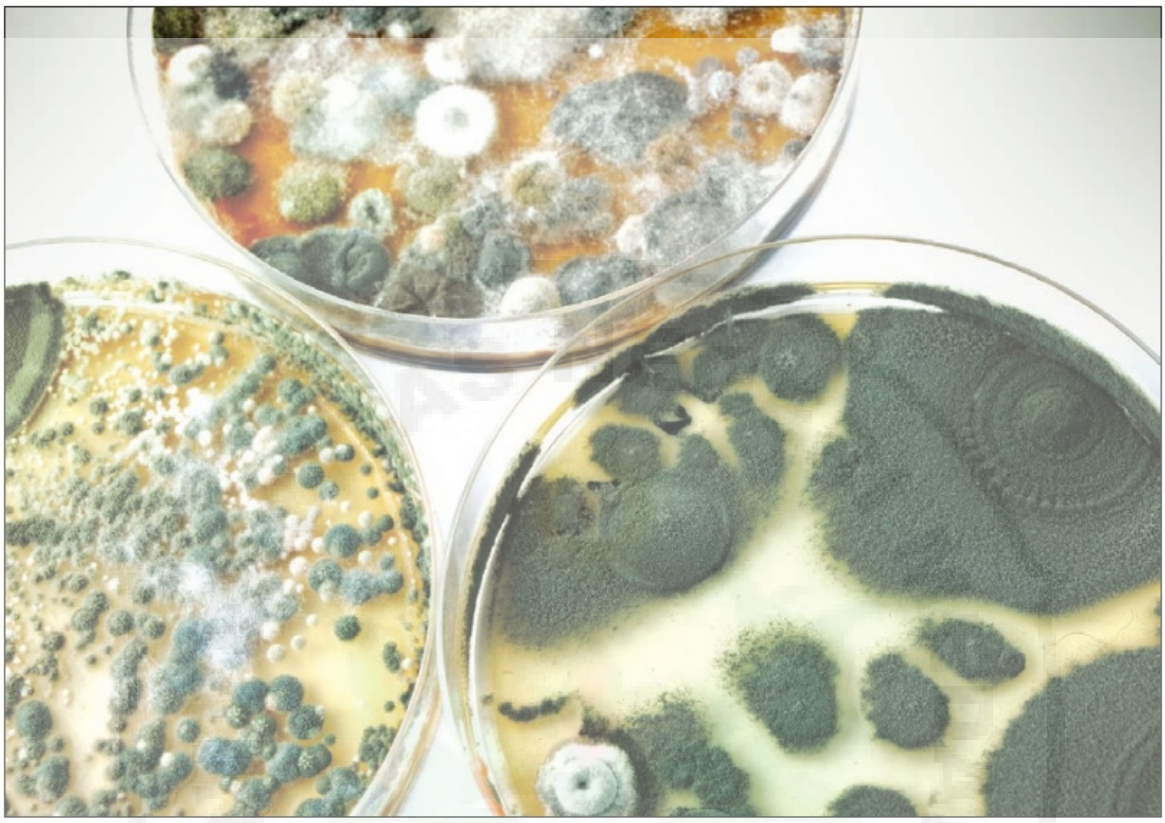

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# Research Article
# Development of Competency-based Modules Instruction to Improve Entrepreneurship Competence on Labor Training Centre Learner

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## Abstract

**Background and Objective:** The entrepreneurial competencies of the training participants at the labor training center (LTC) still seem low. The use of traditional job sheets and textbooks is still widely used in entrepreneurship learning. Utilizing a competency based module in entrepreneurship training may be able to overcome the low competency of entrepreneurship in trainees. This Research and Development study aimed at developing competency-based entrepreneurship modules instruction to improve participants' entrepreneurial competencies at the LTCs. **Materials and Methods:** As many as 150 trainees were divided into 2 groups in which the experimental one was facilitated by competency-based modules and the control group was facilitated by using textbooks or job sheets. **Results:** The study proved that the use of competency-based modules facilitation improved the trainees' entrepreneurial competencies. **Conclusion:** It is concluded that competency-based modules instruction improves the entrepreneurial competencies of the trainees at the LTCs.

Key words: Competency-based module, entrepreneurial competence, training centre, computer science, training model, labor, entrepreneurship

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## INTRODUCTION

Preparing to face the ASEAN Economic Community at the end of 2015 the government held job training for 1 million people. To reach the number of training participants, the requirements for the participation of training in labor training center (LTC) were made easier so that workers graduated from elementary to junior high school level could take part in job training. Many efforts have been made by the government to improve the quality of LTC training, such as establishing cooperation between LTC and industry, improving the ability of instructors, providing training equipment or refining the curriculum. However, the skills acquired by participants are insufficient to the work produced by LTC with the business world and the industrial world. The number of Indonesian workers currently reaches 125 million and 60% graduates of elementary and junior high schools[1]. This is reasonable that the LTCs need to train the workers graduated from elementary and junior high schools because unemployment from this level of education reaches 7.24 million people[2]. Besides, the Ministry of Manpower noted that there were 276 LTCs in Indonesia, of which there were 14 LTCs belonging to the Ministry of Manpower and the rest belonged to the provincial and district/city governments.

The results of the Ministry of Manpower's data on the Exchange of Job Opportunities find comparative numbers between registrants as job seekers, job vacancies and those that can be filled in according to the skills they have are 10:2:1, which means that out of ten job seekers and two vacancies available, only one can be accepted because it has the skills as desired. The results of previous study found that in the context of the implementation of PSG in North Sumatra Province it turned out that 25.19% of industry partners in carrying out industrial practices looked and assumed that the ability of vocational high school students was still low and doubtful[3].

In order for the management of the LTC to improve the skills of trainees in accordance with the needs of the workforce it is necessary to conduct a survey of industrial needs for the preparation of training materials which are packaged in a learning module. The application of competency-based modules in training or learning is effective at vocational schools and vocational training centers [4]. It was reported that the results of a dialogue meeting between the ranks of Secondary and Vocational Education and the business/industrial world (DU/DI) held in Medan and Padang, as well as the survey showed the weaknesses of technology vocational school graduates in various industries in the region[5]. The industries in Jakarta concluded that many factors contributed to the low mastery of both the theory and practice of vocational school graduates, including the lack of students' ability to read schematics, lack of mechanical abilities and lack of textbooks for both theoretical and practical lessons in textbooks, modules and job sheets.

The learning process based on competency is that each student can achieve the right goals if he learns correctly. He further stated that competence is the expected outcomes of a program. If the program has been planned, then competencies were determined, then those competencies are converted into learning objectives as work definitions of the expected results in a program[6]. The basic assumptions underlying competency based training are: (1) Competence, (2) Criteria, (3) Competency assessment, (4) Student progress and (5) Learning intent. Other features of competency based learning are in the learning objectives[4]. Blank highlights that objectives are goals in the form of capabilities (terminal performance objective) that describe exactly what should be done in an exercise program to master a task after completing learning activities. The objective consists of components of conditions, abilities and criteria. Component conditions pertain to the conditions required by trainees to carry out the task in order to master the task. The ability component is the core of the goal and is based on the statement of duty. In some cases, the component of ability is exactly the description of the task itself in another way. The criteria component explains how good (good) students must do the task so that students can master the task[7].

Moreover, 12 steps were identified in developing competency based training (CBT) in training models, namely identifying positions, identifying prerequisite skills, identifying job assignments, analyzing job assignments and knowledge that needed to be added, making learning goals, sort assignments and learning objectives, develop performance tests, conduct test trials, develop study guides, test and revise study guides, develop systems for managing learning and implement and evaluate learning programs[7].

In this training entrepreneurship training material is packaged in the form of modules: (1) Complete modules, (2) Modules can be used individually, (3) Modules are complete packages, (4) Modules include learning goals and experiences learning and (5) Module includes assessing the extent to which the training objectives of the module have been achieved[4]. The advantages of using modules: (1) Learning is directed individually so students can learn on their own according to their abilities and speed, (2) Quality of learning control is guaranteed, because the standard achievement of goals is specified and (3) Relevant to the learning curriculum, because the direction of student learning is clear and the learning objectives are up to the smallest units listed in the module.

There are 3 elements that are often found in competency based learning, namely: (1) Individualization which is based on learning process competencies which is done individually and the instructor's role is to guide to achieve competence thoroughly, (2) Learning technology which relates to hard media such as cassette tapes, computers and slides or using software media such as modules and worksheets or even using a combination of hardware and software and (3) Systematization which learning is based on competency through efficient and effective program focusing on (a) More student-centered learning and (b) Integration of evaluation and feedback[4].

In summary, the training participants' competencies need improvement so that LTCs can produce graduates who have good entrepreneurial competencies through the application of effective and efficient learning strategies, such as using competency-based learning modules so that the trainees possessed competencies that match the demands of the job.

## MATERIAL AND METHODS

The study was conducted at Medan LTC, Stabat LTC and Lubuk Pakam LTC, North Sumatra Province from May-September, 2017. The study was conducted to 150 LTC trainees consisting of 76 trainees facilitated by competency-based module learning and 74 trainees facilitated by a textbook or job sheet. This study applies research and development of Borg and Gall[8] through ten steps. They are: (1) Collecting of information and data, (2) Planning, (3) Developing, (4) Preliminary tests the initial product/module, (5) Product revision, (6) Real field testing, (7) Product revision, (8) Operational field testing, (9) Revision of the final product and 10) dissemination and implementation[8].

The validity of the training module, an expert assessment was carried out using the criteria applied by Sriadhi[9] as shown in Table 1.

The validity examined in this study includes material validity and design validity. To measure material validity, 8 material experts gave an assessment of the module developed, namely lecturers who taught at the Postgraduate of Medan State University. Referring to the module development assessment by Finch and Crunkilton[4], namely (1) Preliminary assessment of the module, (2) Objectives, (3) Initial and final assessment, (4) Learning experience, (5) Material sources, (6) General and (7) Trials, in this study 10 assessment indicators were established, namely: (1) Introductory module, (2) Objectives to be achieved, (3) Initial and final assessment, (4) Learning experience, (5) Suitability of module content with goals, (6) Clarity of training activities, (7) Module readability, (8) Clarity of tasks, (9) Suitability of objectives, material and assignments given and (10) Assessment developed. Likewise, to measure the validity of the module design, 8 experts from learning design gave an assessment of the design of the module used. The indicators of expert design assessment include (1) Systematic of the module, (2) Quality of interactions, (3) Quality of information design, (4) Clarity of examples given and (5) Sequential material.

Table 1: Module assessment criteria intervals

| Interval score | Interpretation | |
|---|---|---|
| 0.00-2.49 | Very bad | Not qualified |
| 2.50-3.32 | Bad | Less qualified |
| 3.33-4.16 | Good | Qualified |
| 4.17-5.00 | Very good | Excellence |

## RESULTS AND DISCUSSION

The result of validation data by material experts about competency-based modules are presented in Table 2.

Based on the results of testing the module material validity, the average of experts' opinions on module material ranges from 4.50-4.75 on a scale of 1-5. Then it is seen from the quality of module material that is between 25% stated as good and 75% stated as very good.

The quality of the module design was measured by the instrument of the design expert as shown in Table 3.

From the results of testing the module design validity showed that the average expert opinion on the module material is between 4.50 and 4.75 on a scale of 1-5. In terms of design quality that the modules design is between 25% stated good and 75% very good.

In this study the effectiveness of training was tested by comparing the entrepreneurial competencies of trainees, who were facilitated competency-based learning to the traditional learning facilitated by textbook or a job sheet. From the results of the study it was found that the average entrepreneurial competency of the trainees facilitated by the competency-based module was at 14.89 while those facilitated by textbook or a job sheet was 13.69. From the results of the t-test statistical analysis found that t count>t table at $p<0.05$, which indicates that there are differences in entrepreneurial competencies between trainees facilitated by competency-based modules from those facilitated by textbook or a job sheet. This indicate that entrepreneurship competencies of trainees facilitated by competency-based modules are higher than those facilitated by textbook or a job sheet. The results of the t-test can be seen in Table 4.

Table 2: Validation by material experts

| Assessment indicators | Numbers | Mean | Standard deviation | Good (%) | Very good (%) |
|---|---|---|---|---|---|
| Module introduction | 8 | 4.62 | 0.48 | 37.50 | 62.50 |
| Objectives to be achieved | 8 | 4.50 | 0.50 | 50.00 | 50.00 |
| Initial and final assessment | 8 | 4.62 | 0.48 | 37.50 | 62.50 |
| Learning experience | 8 | 4.50 | 0.50 | 50.50 | 50.00 |
| Compatibility of the contents of the module with purpose | 8 | 4.62 | 0.48 | 37.50 | 62 .50 |
| Clarity of training activities | 8 | 4.62 | 0.48 | 37.50 | 62.50 |
| Module readability | 8 | 4.50 | 0.50 | 50.00 | 50.00 |
| Clarity of assignments given | 8 | 4.62 | 0.48 | 37.50 | 62.50 |
| Suitability of objectives, material and assignments given | 8 | 4.75 | 0.43 | 25.00 | 75.00 |
| Assessment developed | 8 | 4.62 | 0.48 | 37.50 | 62.50 |

Table 3: Validation by design experts

| Assessment Indicator | Numbers | Mean | Standard deviation | Good (%) | Very good (%) |
|---|---|---|---|---|---|
| Systematics module | 8 | 4.75 | 0.43 | 25.00 | 75.00 |
| Quality of interaction | 8 | 4.62 | 0.48 | 37.50 | 62.50 |
| Quality of information design | 8 | 4.50 | 0.50 | 50.00 | 50.00 |
| Clarity of examples given | 8 | 4.62 | 0.48 | 37.50 | 62.50 |
| Material sequential | 8 | 4.75 | 0.43 | 25.00 | 75.00 |

Table 4: Summary of test results differences in average entrepreneurship competence between trainees facilitated by competency-based module learning from trainees facilitated by textbook or job-sheet

| Training | Numbers | Mean | Standard deviation | df | t-values | t, p = 0.01 |
|---|---|---|---|---|---|---|
| Competency-based module | 76 | 14.89 | 3.86 | 148 | 2.20 | 1.96 |
| Textbook or job-sheet | 74 | 13.69 | 2.72 | - | - | - |

df: Degree of freedom, p: Significance level

Groups of trainees who use competency-based learning modules that carry out training individually or independently and play a more active role in training activities so that they can learn optimally in accordance with the pace of learning, will obtain higher training results or entrepreneurial competencies than training groups without modules namely training based on instructions given by the instructor. Because this study refers more to cognitive abilities in entrepreneurship, researchers are advised to conduct further research to find out the extent to which the influence of training with competency-based modules on entrepreneurial competencies in the psychomotor domain is ultimately expected to lead to production-based training. This is in accordance with the study of Ganefri and Hidayat[10], who suggested that production-based training is an alternative learning training model for vocational training that is relevant to the needs of trainees in developing knowledge, attitudes and skills in the learning process. Although according to Brancu *et al.*[11] research on entrepreneurship is very sensitive to the environment that can influence it through institutions and the context of their country.

In this study it was found that training with competency-based modules had a higher influence on entrepreneurial competencies compared to traditional training. This provides an indication that in conducting entrepreneurship training it is better to use training with competency-based modules to improve entrepreneurial competence. To achieve this goal, the availability of training media in the form of software such as training modules is demanded. However, this training module can be used by many trainees, because after completing learning (training) the modules can be collected again for other participants to use. Here the training module is used interchangeably, so that when viewed in terms of financing (economics), the costs required are only the cost of the initial preparation or the initial capital of the training module development. In order for the objectives of the module training process based on competency to be achieved, it must be supported by the availability of facilities that can be utilized by each student, because it fits the demands of the nature of this training, namely individual learning and learning according to the learning speed. A study was conducted on the effect of E-learning module learning on students' attitudes in the electronics class which found that students learning with E-learning modules had a higher influence on attitudes of students on the topic of transistors were compared with the influence of conventional learning methods[12]. It was also found that the learning outcomes of students taught with virtual field trip (VFT) modules were higher when compared to students taught by conventional methods. Learning with strategies using the VTF module provides a positive influence on learning outcomes for all forms of questions, both low-level questions such as objective questions, as well as for high-level questions such as structured and essay questions[13].

The use of instructors in training with competency-based modules will be more efficient because the number of instructors that is needed can be small and the role of the instructor is only to guide. This also implies that instructor quality can be further improved, for example through upgrading or training as is often done so far, because the number of instructors needed for BLK training with modules is based on little competence. In connection with entrepreneurship training, it was found that entrepreneurship training moderated the relationship between entrepreneurial motivation and entrepreneurial intentions. The influence of entrepreneurial motivation on entrepreneurial intentions is largely determined by entrepreneurship training[14].

To improve the entrepreneurial competency of trainees, learning materials are packaged in the form of competency-based learning modules, this is quite reasonable because competency based learning is equipped with learning modules. Basically all existing training modules are made based on competency; however, the emphasis on competency in one module with another module can certainly be different. Emphasis on competency in the learning module is more basic, this is reflected in the teaching component it has. The module definition itself is a complete package that includes a series of planned learning experiences designed to help students master their stated goals[4].

The results of the study have developed entrepreneurship modules based on competencies to be used by LTC trainees. In the development of the learning module it referred to the model developed by Hall and Jones[15] with the following structure: Module title, purpose and introduction, initial assessment, learning tools and materials and learning activities. The use of these modules is expected to improve competencies in accordance with employment needs. This is consistent with the opinion expressed by Finch and Crunkilton[4] that module learning aims to facilitate the learning process, by providing learning opportunities for trainees according to the speed of learning that each student has. The purpose and nature of training with competency-based modules is to facilitate the learning process by providing the best possible assistance to trainees, thus efforts to increase the usability of learning time can be achieved. The results of this study are in line with Abdelrahman *et al.*[16] research on Flipped Learning for ESL Writing in a Sudanese School proving that on the basis of the engagement and interaction of the students, the use of module can improve their writing proficiency and satisfaction. The results of this study are also supported by the research conducted on the effect of Mastery Learning Strategy by using learning modules on entrepreneurial knowledge achievement among Aboriginal students in Malaysia, who found that students taught with MLS obtained higher entrepreneurial knowledge achievements compared to students taught with Traditional Learning Approach[17].

Training participants who use competency-based teaching modules with characteristics of learning are relatively more independent and can switch to other subject matter individually if they have completed one lesson topic will be more effective than traditional or conventional training participants who do not use modules namely using job sheets or book. In addition, in this study the modules produced are expected to be able to provide a high level of relevance for JTC graduates so that they are in line with the needs of the workforce. The preparation of training materials that are in accordance with the competencies in the workplace reflected in the learning module is an effort to increase the relevance of skills of JTC graduates to employment needs. The results of this study are consistent with the research who found that there was a significant influence of the new module developed in Interactive Web-Based Visualization Tools for Gluing Undergraduate Fuel Cell System Courses on motivation and engineering learning achievements[18]. Likewise, it was found that both inside and outside the learning situation it turns out that young people can get excited if entrepreneurship training will carried out in real-world activities and will be more enthusiastic about learning when presenting entrepreneurs who have succeeded in the entrepreneurial field by meeting or visit to school[19].

## CONCLUSION

The results of the study concluded that the use of competency-based learning modules in entrepreneurship material at the BLK was effective. Likewise, the materials and design of entrepreneurial module are very good to be used by LTCs for training. This implies that the use of competency-based modules instruction in entrepreneurship training at LTCs is worth considering.

## SIGNIFICANCE STATEMENT

This study discovers the effectiveness of competency-based modules instruction that can be beneficial for training model that can improve trainees' entrepreneurial competencies. This model can be applied in the facilitation of the trainees because they can be more interactive, productive and achieve higher entrepreneurial competencies. This study helps the researchers to uncover the critical areas of workers' competencies of entrepreneurship that many researchers were not able to explore. Thus a new model of training instruction may be arrived at.

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## REFERENCES

1. Dhakiri, M.H., 2017. Menaker: Kualitas Tenaga Kerja RI Masih Warta Ekonomi. co. id. Perspektif Baru Bisnis dan Ekonomi.
2. Dhakiri, M.H., 2015. Pemerintah Permudah Syarat Pelatihan Kerja di BLK. Rabu, 8 April 2015. Hukum online.com.
3. Sibuea, A.M. and I.W. Dirgayasa, 2003. Pendidikan sistem ganda pada Sekolah Menengah Kejuruan di Sumatera Utara. J. Teknol. Kejuruan Pengajarannya, Vol. 26, No. 2. 10.17977/tk.v26i2.379.
4. Finch, C.R. and J.R. Crunkilton, 1979. Curriculum Development in Vocational and Technical Education: Planning, Content and Implementation. Allyn and Company Inc., Boston, Pages: 306.
5. Sibuea, A.M., 2003. Perilaku kewiraswastaan lulusan SMK di Kota Medan dan Beberapa Variabel Penentunya. WAWASAN: J. Ilmu-ilmu Sosial Univ. Sumatera Utara, Vol. 10, No. 1.
6. Torshen, K.P., 1977. The Mastery Approach to Competency Based Education. Academic Press, New York.
7. Blank, W.E., 1982. Handbook for Developing Competency Based Training Programs. Prentice Hall, Englewood Cliffs, New Jersey.
8. Borg, W.R. and M.D. Gall, 1983. Educational Research: An Introduction. 4th Edn., Longman Inc., New York.
9. Sriadhi, 2014. Multimedia exploratory learning tutorial (CTL) to study electrical energy. Proceedings of KeTIK, (KeTIK'14), USU Press, Medan .
10. Ganefri and H. Hidayat, 2015. Production based learning: An instructional design model in the context of Vocational Education and Training (VET). Procedia-Social Behav. Sci., 204: 206-211.
11. Brancu, L., V. Munteanu and D. Gligor, 2012. Study on student's motivations for entrepreneurship in Romania. Procedia-Social Behav. Sci., 62: 223-231.
12. Getuno, D.M., J.K. Kiboss, J.M. Changiywo and L.B. Ogola, 2015. Effects of an e-learning module on students' attitudes in an electronics class. J. Educ. Practice, 6: 80-86.
13. Haris, N. and K. Osman, 2015. The effectiveness of a Virtual Field Trip (VFT) module in learning biology. Turk. Online J. Distance Educ., 16: 102-117.
14. Barbara-Sánchez, V. and C. Atienza-Sahuquillo, 2018. Entrepreneurial intention among engineering students: The role of entrepreneurship education. Eur. Res. Manage. Bus. Econ., 24: 53-61.
15. Hall, G.E. and H.L. Jones, 1976. Competency-Based Education: A Process for Improvement of Education. Prentice Hall Inc., Englewood Cliffs, New Jersey .
16. Abdelrahman, L.A.M., D. DeWitt, N. Alias and M.N.A. Rahman, 2017. Flipped learning for ESL writing in a sudanese school. Turk. Online J. Educ. Technol., 16: 60-70.
17. Amiruddin, M.H., N.A. Samad and N. Othman, 2015. An investigation effects of mastery learning strategy on entrepreneurship knowledge acquisition among aboriginal students. Procedia-Social Behav. Sci., 204: 183-190.
18. Bai, H., A. Aman, Y. Xu, N. Orlovskaya and M. Zhou, 2016. Effects of web-based interactive modules on engineering students' learning motivations. Am. J. Eng. Educ., 7: 83-96.
19. Olugbola, S.A., 2017. Exploring entrepreneurial readiness of youth and startup success components: Entrepreneurship training as a moderator. J. Innov. Knowl., 2: 155-171.

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