

EVALUATION OF LSP P1 CERTIFICATION TEST IMPLEMENTATION ON COMPETENCY IMPROVEMENT FOR VOCATIONAL HIGH SCHOOL GRADUATES USING THE CIPP MODEL

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INFORMATION

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ABSTRACT

In the Department of Computer and Network Engineering at SMK Negeri 1 Tilatang Kamang, the LSP P1 competency certification test has been implemented to enhance student proficiency using the CIPP paradigm. A CIPP approach is used in the study method, which comprises context, input, process, product, and overall elements. The study's sample consisted of a total of two assessors. The entire population serves as the sample. A survey is the instrument utilized. approaches for data analysis that employ descriptive analysis. Using a level category method, describe the data. The outcomes demonstrated that SMK Negeri 1 Tilatang Kamang implemented the competency certification test for vocational students in the computer and network engineering expertise program in terms of the following aspects: (1) context, with a quality achievement value of 45.60 or (89.00%); (2) input, with a quality achievement value of 58.40 or (88.25%); (3) process, with a quality achievement value of 37.60 or (84.65%); (4) product, with a quality achievement value of 30.20 or (88.87%); and (5) overall, with a quality achievement value of 30.20 or (88.87%). To finish the program and ensure that graduates receive SKKNI level 2 competency certificates, competency certification examinations should be implemented gradually.

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INTRODUCTION

The Vocational High School (SMK) is one of the educational institutions that equip its pupils to enter the workforce immediately after graduation (Permana et al., 2019). SMK is equipped to generate knowledgeable individuals who can keep up with the advancement of science and technology and are ready to work with a variety of competencies. A secondary education that primarily trains students for employment in particular professions is known as vocational education, according

to the explanation of Article 15 of the National Education System Law from 2003. However, this objective has not yet been accomplished (Mustakim, Jalinus, et al., 2023). This is because the system for delivering education does not follow and comply with the definition of learners provided in Article 15 of the National Education System Law of 2003. A lack of space in the educational system for students to explore their potential, talents, and interests leads to underachieving educational goals (Verawardina & Jama, 2018). Since many SMK graduates still struggle to find employment in their fields of specialization, unemployment results (Mustakim, Witari, et al., 2023).

The issue that faces national education, especially vocational education at the moment, is that a large number of SMK graduates lack the skills needed in the commercial and industrial worlds (Fitriyanto, 2021). Graduates from vocational programs are created to develop a workforce that is skilled and ready for employment (Rizal et al., 2022). Vocational high schools have not been able to put educational programs into place that can give pupils information, skills, and experience, leaving them unable and unqualified to perform specific occupations (Ambiyar et al., 2019).

All vocational students are currently encouraged by the government, through the Ministry of Education and Culture, to receive competency certificates (Astituk, 2023). The competency exam procedure has at least three components that must be considered. The first is associated with SKKNI, the second with the caliber and reliability of assessors, and the third with industrial interaction. SKKNI (Indonesian National Work Competency Standards) was developed by BNSP for evaluation reasons. The SKKNI contains the competencies that an employee must possess to function in the industry. The needs of the industry are referenced in the creation of SKKNI. Additionally, this SKKNI serves as the foundation for the creation of student competency exam tools at LSP (Hardiyanta & Wagiran, 2023).

The administration of the National Examination for SMK students includes the expertise competency test (Munthe & Mataputun, 2021). According to Permendiknas Number 28 of 2009, the outcomes of the skills competency test's implementation are a sign that graduate competency standards have been met, and for stakeholders, they will be utilized to learn about the abilities that potential employees possess (Aji & Wijaya, 2021; Sadewa & Alirianto, 2020). Implementation of the expertise competency exam must adhere to the standards and specifications established for both the equipment and the equipment itself (Febrianti et al., 2023). Verifying the test location is a crucial step in the administration of this competency exam (Sadewa & Alirianto, 2020)

Many have seen in the field that many aspects of the use of competency tests are not exactly as expected in the use guidelines (Cahyono, 2022). This is evident from the little time allotted and the incomplete infrastructure for competency assessment. Considering the significance of expertise competency tests for students graduating from SMK, research on expertise competency tests is necessary. Additionally, the implementation of competency tests does not reflect the standard of ability required by the world of work because there is no certification with a professional certification body (LSP) (Listari, 2021).

If every component of the competency exam has a high-quality value, competency testing in a school can be done successfully. The competency exam has context, input, process, and product components (Ambiyar & Dewi, 2019). Policies, objectives, requirements for self-development, prospects for graduates of Computer and Network Engineering in the corporate world, and scientific and technological advancements are all part of the context component. Infrastructure, tools, and locations for competency tests are examples of input aspects. Aspects of the process, such as timing, protocol, and control over testing for expertise competency. Documentation or the worth of credentials and results from competency tests are examples of product aspects.

The purpose of this study is to assess how well the LSP P1 certification test has been implemented at SMKN 1 Tilatang Kamang in terms of raising student proficiency using the CIPP model which is also the novelty of this research. To determine a person's aptitude or knowledge (competence) following industry standards, competency tests are required. A person must demonstrate competence to be hired and this is demonstrated, among other things, by a competency certificate obtained through testing. Since SMK is charged with supplying knowledge and skills so that they can enter the workforce right away, it is imperative to increase so that the number of unemployed people falls.

METHOD

Type of Research

Research of this kind is called evaluative research. Evaluation research is a type of applied research that assesses how well a program, action, policy, or other subject of study performs about predetermined objectives or benchmarks. By using input from those involved in the program's implementation, the evaluation study aims to increase the effectiveness of a policy or program (Ambiyar & Dewi, 2019; Toriqlarif, 2019). This study aims to assess how well LSP P1 implemented the Student Competency Test at SMK Negeri 1 Tilatang Kamang's Department of Computer and Network Engineering. The evaluation model employed is the Stufflebeam model created using the CIPP (Context, Input, Process, Product) methodology. The context, input, process, and product evaluations were the main subjects of the evaluation.

Population and Sample

The entire research topic is population. Sugiono (2019), on the other hand, emphasizes that population is a generalization area made up of items and topics that have specific qualities and numbers. All residents and documents from the SMK Department of Computer and Network Engineering who take Competency Certification Tests utilizing LSP-P1 at SMK Negeri Tilatang Kamang make up the population of this study.

The sample represents a representation of the population's size and makeup. Researchers can use samples obtained from the population if the population is huge and they are unable to investigate the entire population, for instance owing to a lack of resources, time, or energy. In this study, sampling was done purposefully, that is, by the goals and objectives of the investigation. Head of the

Computer and Network Engineering Expertise Program and Productive Teachers with Assessor credentials are among the selection criteria for informants.

Research Subject

The study's participants were two computer and network engineering competency assessors from SMK Negeri 1 Tilatang Kamang.

Data Gathering Method

To collect data for this study, questionnaires, interviews, and documentation were all used. Images and photos that substantiate certain claims are included in the material. The questionnaire being used is closed, meaning that respondents can only select one of the available responses. The questions are broken down into four categories in the questionnaire: context, input, process, and product.

Research Instrument

According to Sugiyono (2019), a research instrument is a tool used to measure observed natural and social phenomena. In this study, the instrument was used to assess how the competency certification test was being implemented in the Department of Computer and Network Engineering at SMK Negeri 1 Tilatang Kamang. The instrument used in this study is broken down into four categories: context, input, process, and product (results). The following table shows the instrument lattice used in this study:

Table 1. Research Instrument Grid

Component	Indicator
<i>Context</i>	The foundation and purpose of the competency test
	The suitability of competency tests with the needs of business and industry and opportunities for computer and network engineering graduates in the business world and the industrial world
	Suitability of competency tests with technological advances in the field of Computer and Network Engineering
<i>Input</i>	Assessor
	Competency Test Device
	Competency Test Venue
<i>Process</i>	Facilities and Infrastructure
	Competency Test implementation time
	Competency Test Procedure
	Competency Test Supervision
<i>Product</i>	Assessment System
	Student competency test results
	Student Competency Test Products
	Certificate of competency

Statistical Analysis Method

This study's objective was to assess how well LSP-P1's implementation of the competency certification test for students in the Computer and Network Engineering Department at SMK Negeri 1 Tilatang Kamang met the requirements

for context, input, process, product, and overall evaluation. The Level Category technique is used to describe the research results by using the overall score as a reference and applying the formula:

$$M = \frac{\text{Highest Ideal Score} + \text{Lowest Ideal Score}}{2}$$

$$SD = \frac{\text{Highest Ideal Score} - \text{Lowest Ideal Score}}{6}$$

The process of calculating the percentage of achievement using the formula:

$$\text{Tingkat Pencapaian} = \frac{\text{Real Score}}{\text{Ideal Score}} \times 100\%$$

Next, it is categorized into five, namely :

Table 2. Category Level

No	Category	Respondent Score
1	Very Good	$\bar{X} > M + 1,5 \text{ SD}$
2	Good	$M + 1,5 \text{ SD} > \bar{X} \geq M + 0,5 \text{ SD}$
3	Fairly Good	$M + 0,5 \text{ SD} > \bar{X} \geq M - 0,5 \text{ SD}$
4	LessGood	$M - 0,5 \text{ SD} > \bar{X} \geq M - 1,5 \text{ SD}$
5	Not Good	$\bar{X} \leq M - 1,5 \text{ SD}$

M = Mean ideal score in the study

SD = Ideal standard deviation in the research component

Before the evaluation activities, the evaluation criteria for this study were defined. When an aspect complies with the requirements and spans the scope of the indicators, it is deemed suitable, and data analysis is used to classify each aspect. Each element is categorized as follows:

1. Context Evaluation

The questionnaire instrument has 12 question items and four Likert scale response alternatives. The scores range from 1 to 4. Accordingly, the lowest and highest ideal scores are 12 and 48, respectively. The optimal standard deviation is $(48-12)/6 = 6$, and the ideal average is $(48+12)/2 = 30$. The following categories are the limits for context evaluation:

- Very Good : $\bar{X} \geq 39$
- Good : $39 > \bar{X} \geq 33$
- Fairly Good : $33 > \bar{X} \geq 27$
- Less Good : $27 > \bar{X} \geq 21$
- Not Good : $\bar{X} \leq 21$

2. Input Evaluation

The questionnaire instrument has 16 question items and uses a Likert scale format with 4 possible answers. The scores range from 1 to 4. Accordingly, the lowest and highest ideal scores are 16 and 64, respectively. The optimal

standard deviation is $(64-16)/6 = 8$, and the ideal average is $(64+16)/2 = 40$. The following are the category limits for input evaluation:

Very Good	: $\bar{X} \geq 52$
Good	: $52 > \bar{X} \geq 44$
Fairly Good	: $44 > \bar{X} \geq 36$
Less Good	: $36 > \bar{X} \geq 28$
Not Good	: $\bar{X} \leq 28$

3. Process Evaluation

The Likert scale model is used for the questionnaire instrument, which has 11 question items and 4 possible answers. The scores range from 1 to 4. Accordingly, the ideal score ranges from 11 to 44, with 44 being the maximum possible result. The optimal standard deviation is $(44-11)/6 = 5.5$, and the ideal mean is $(44+11)/2 = 27.5$. The following are the category limits for process evaluation:

Very Good	: $\bar{X} \geq 35,75$
Good	: $35,75 > \bar{X} \geq 30,25$
Fairly Good	: $30,25 > \bar{X} \geq 24,75$
Less Good	: $24,75 > \bar{X} \geq 19,25$
Not Good	: $\bar{X} \leq 19,25$

4. Product Evaluation

The survey instrument consists of 8 question items, each with 4 possible answers using the Likert scale. The scores range from 1 to 4. Thus, the ideal score ranges from 8 to 32, with 32 being the greatest possible result. The optimal standard deviation is $(32-8)/6 = 4$, and the ideal average is $(32+8)/2 = 20$. The following categories are the limits for product evaluation:

Very Good	: $\bar{X} \geq 26$
Good	: $26 > \bar{X} \geq 22$
Fairly Good	: $22 > \bar{X} \geq 18$
Less Good	: $18 > \bar{X} \geq 14$
Not Good	: $\bar{X} \leq 14$

5. Accumulative Evaluation

The Likert scale approach is used to grade the responses to the questionnaire's 47 question questions. The scores range from 1 to 4. Thus, the ideal score ranges from 47 to 188, with 188 being the greatest possible result. The optimum standard deviation is $(188-47)/6 = 23.5$, and the ideal mean is $(188+47)/2 = 117.5$. The categories for the overall assessment's boundaries are:

Very Good	: $\bar{X} \geq 152,5$
Good	: $152,5 > \bar{X} \geq 129,5$
Fairly Good	: $129,5 > \bar{X} \geq 105,75$
Less Good	: $105,75 > \bar{X} \geq 82,2$
Not Good	: $\bar{X} \leq 82,25$

RESULTS AND DISCUSSION

Results

LSP-P1 SMK Negeri 1 Tilatang Kamang evaluated the Computer and Network Engineering Expertise Program students that took the competency certification test in terms of:

1. Context Aspect

A questionnaire instrument is used to collect research information on the context-related characteristics of the multimedia skills program student competency certification test parts. Respondents are computer and network engineering competency assessors from the SMKN 1 Tilatang Kamang Department of Computer and Network Engineering. Two respondents filled out a questionnaire that was presented to them to collect data on this component. There are 12 questions on the survey. The following indicators are included in this aspect: (1) the competency test's foundation and purpose; (2) its suitability for business and industry needs; and (3) How well competency assessments align with recent technological developments in computer and network engineering. The following information is gleaned from surveys that were created by researchers:

Table 3. Frequency Distribution of Context Aspects

No	Interval	Category	Frequency	Percentage
1	$\bar{X} \geq 39$	Very Good	2	100
2	$39 > \bar{X} \geq 33$	Good	-	-
3	$33 > \bar{X} \geq 27$	Fairly Good	-	-
4	$27 > \bar{X} \geq 21$	Less Good	-	-
5	$\bar{X} \leq 21$	Not Good	-	-
Total			2	100

According to Table 3, 2 respondents had outstanding scores (100%) whereas 0 respondents fell into the good, somewhat good, less good, and not good categories.

2. Input Aspect

Two respondents completed a questionnaire that served as the source of the data for this component. There are 16 questions on the survey. Assessors, competency test instruments, competency test locations, and facilities and infrastructure are the indications found in this component. The research information gathered via the researcher's created questionnaire is as follows:

Table 4. Frequency Distribution of Input Aspects

No	Interval	Category	Frequency	Percentage
1	$\bar{X} \geq 52$	Very Good	1	50
2	$52 > \bar{X} \geq 44$	Good	1	50
3	$44 > \bar{X} \geq 36$	Fairly Good	-	-
4	$36 > \bar{X} \geq 28$	Less Good	-	-
5	$\bar{X} \leq 28$	Not Good	-	-
Total			2	100

Based on Table 4, it can be seen that 0 respondents fall into the moderately good, less good, and not good categories, while 1 respondent falls into the excellent group (50%), 1 respondent falls into the good category (50%), and 1 respondent falls into the not good category.

3. Process Aspect

Two respondents completed a questionnaire that served as the source of the data for this component. There are 11 questions on the survey. The following indicators are included in this aspect: (1) implementation time for competency tests, (2) test procedures, (3) test supervision, and (4) assessment system. The research information gathered through the questionnaire that the researcher created is as follows:

Table 5. Frequency Distribution of Process Aspects

No	Interval	Category	Frequency	Percentage
1	$\bar{X} \geq 35,75$	Very Good	-	-
2	$35,75 > \bar{X} \geq 30,25$	Good	2	100
3	$30,25 > \bar{X} \geq 24,75$	Fairly Good	-	-
4	$24,75 > \bar{X} \geq 19,25$	Less Good	-	-
5	$\bar{X} \leq 19,25$	Not Good	-	-
Total			2	100

Based on Table 5, it can be seen that 0 respondents fall under the very good category, 2 falls under the good category (100%), and 0 falls under the quite good, less good, and not good categories.

4. Product Aspect

Two respondents completed a questionnaire that served as the source of the data for this component. There are 8 questions on the survey. The following are the indications for this aspect: (1) Results of Competency Tests; (2) Products of Competency Tests; and (3) Competency Certificates. The research information gathered via the researcher's created questionnaire is as follows:

Table 6. Frequency Distribution of Product Aspects

No	Interval	Category	Frequency	Percentage
1	$\bar{X} \geq 26$	Very Good	2	100
2	$26 > \bar{X} \geq 22$	Good	-	-
3	$22 > \bar{X} \geq 18$	Fairly Good	-	-
4	$18 > \bar{X} \geq 14$	Less Good	-	-
5	$\bar{X} \leq 14$	Not Good	-	-
Total			2	100

Discussion

The cumulative value of LSP P1 SMKN 1 Tilatang Kamang's evaluation of the Computer and Network Engineering expertise program students' competency certification test in terms of context, input, process, and product aspects is 171.80. All factors (context, input, process, and product) are in a very good position, which is greater than 152.50 (≥ 152.50), according to the NPK category standards. The achievement value demonstrates that the overall aspect value is excellent in comparison to the field's actuality.

1. Context Aspect

The achievement value of the context aspect is 45.60, or 89%. The context element is in a very good position, which is greater than 39.00 (≥ 39.00), according to the NPK category's restrictions. This result demonstrates that the value of the context component is quite good in comparison to the reality in the field, which supports the achievement value obtained.

- a) The value of the context aspect has an achievement value of 45.60 or (89%). According to the limitations of the NPK category, the context aspect is in a very good position, which is greater than 39.00 (≥ 39.00). This result confirms that the achievement value obtained shows that the value of the context aspect is very good compared to the reality in the field.
- b) The implementation of this student competency test is an effort to improve the quality of education. Competency tests for vocational students are necessary to measure the achievement of learner competencies at a certain level according to the expertise competencies taken during the learning period at SMK concerning SKKNI and the development of the business world / industrial world. The results of the skills competency test of students will be an indicator of the achievement of graduate competency standards, while for stakeholders it will be used as information on the competencies possessed by prospective workers.
- c) The result is that it still needs to be improved, namely on indicators of technological progress used during the implementation of competency tests to be adjusted to the technology in the industry today.

2. Input Aspect

The accomplishment score for the input component is 58.40, or (88.25%). The input aspect, which is larger than 52.00 (≥ 52.00), is in a very good position given the restrictions of the NPK category. The achievement score demonstrates that the input aspect's value is excellent compared to the actuality on the ground.

- a) Productive teachers have very little work experience or internships. On the other hand, work experience or internship is very important to improve the quality of assessors in conducting competency tests.
- b) Competency test devices already have MUK by SKKNI, and assessment sheets, and assessment guidelines are well available. However, the test device has no validation from the company or industry related to suitability to the needs and requirements of the workplace, the importance of this competency suitability so that SMK graduates can work according to their field of expertise.
- c) Verification of competency test places provided by the LSP to the school has met the minimum requirements determined by the LSP seen from the input aspect is rated very well.

3. Process Aspect

The achievement value for the process component is 37.60, or (84.65%). The process aspect, which is more than 35.75 (≥ 35.75), is in a very good position according to the NPK category's restrictions. The achievement value

gained demonstrates that the process aspect's value is quite good in comparison to the field's reality.

- a) Participant schedules and assessor schedules can be read well, this means that the implementation of competency tests has been scheduled very well.
- b) The assessment is not determined by an examiner, but has been determined when the MUK is made, Remedial is not carried out at the time of the vocational competency test, where Remedial is carried out only by the assessor to confirm the answer of an assessor who is considered still lacking.
- c) MUK has been prepared by the LSP by the scheme package to be tested which consists of a set of theory question packages, a set of practical question packages, a set of theory answer sheets, a set of practical assessment sheets, and a set of registration and self-assessment forms.
- d) Assessors can be drawn from other school teachers or industry.
- e) An assessor is well prepared so that the results of his work in deciding student competence can be accounted for by the provisions and requirements issued by LSP / BNSP.

4. Product Aspect

The product aspect reveals that the component of the LSP P1 SMKN 1 Tilatang Kamang competency certification test for students in the Computer and Network Engineering expertise program has an achievement value of 30.20 or (88.87%). The product aspect, which is larger than 26.00 (≥ 26.00), is in a very favorable position when compared to the NPK category's limits. The achievement value obtained demonstrates that the product aspect's value is quite good in comparison to the field's reality.

- a) LSP P1 certificates do not reflect the SKKNI level 2 system that SMK graduates are required to master. The Computer Network Device Configuration cluster is the only one in which the scheme has been mastered.
- b) Product reliability needs to be modified to account for market demands and recent technological advancements.
- c) Certificates of competency that are provided by the BNSP and endorsed by the LSP offer details on the mastery of graduate competencies and are acknowledged by the business and industrial worlds.

Overall, the context factor, namely the use of technology, needs to be addressed because it lags far behind industry technology, and graduate hiring in the industrial sector, especially at the national scale, is still quite low. The effectiveness of assessors in the administration of competency tests is a factor that must be taken into account from the input perspective. Improvements need to be made to work experience and internship programs in business and industry. Understanding of the SMK students' characteristics and the quantity and caliber of resources and tools used for competency assessment by the assessor. The time allotted to test takers, the readiness of the assessor at the time of the test, and the fact that the assessor in charge at the time of the test is also the subject-matter expert all fall under the category of the process. This is in line with research by Nurtanto, et al., (2020) that by using recent technical

advancements, the product aspect, specifically the reliability of product competency test findings, needs to be improved. The graduate competencies that are required of vocational students in the SKKNI level 2 scheme have not been demonstrated by the exam system.

CONCLUSION

The context aspect is in the very suitable group, but the implementation of competency assessments has not been able to reflect students' competence to work in national-scale industries, which is still very low. The input component falls into the highly suitable category, and the availability of assessors based on competency is adequate. The process aspect falls into the extremely suitable category, but the implementation time allotted to test participants does not fully take into account the features of vocational students. The product aspect falls within the extremely suitable category, but the certificate issued by LSP P1 does not reveal the SKKNI level 2 scheme that SMK grads must understand. In all respects, the execution of the Competency Test for SMK Students in the Computer and Network Engineering competence program at LSP P1 SMK Negeri 1 Tilatang Kamang falls into the extremely suitable category.

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