

# ANALYSIS OF TEACHING MATERIAL DEVELOPMENT IN INDUSTRIAL TRAINING INSTITUTIONS TO PREPARE PROFESSIONAL WORKFORCE

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**Abstract:** The process of preparing teaching materials used in a training is recommended based on needs and can at least represent the needs that will prepare students to enter the industrial world. The research method used is a descriptive qualitative method. The research subjects were the manager and trainers at the training institution. The focus of the research is on the analysis of teaching materials used in training institutions. The purpose of preparing this article is to provide input to training institutions for the preparation and development of teaching materials. The results of the research indicate that the feasibility of the content has not yet been fully maximised in determining the material, so some material has not been conveyed. Graphic feasibility is deficient in the design of teaching materials, making them less attractive and reducing trainees' reading interest. The presentation still has deficiencies, including the lack of a table of contents, which will make it difficult to find the material needed. Language feasibility, the aspect of language use, the language used in these teaching materials is still inappropriate. In this case, the language is difficult to understand, and only a brief explanation of the tools' understanding and use is provided.

**Keywords:** Teaching Materials, Training Institutions, Professional Workers

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## 1 Introduction

An educator's competence is the ability to develop a module or teaching material. Teaching materials are basically all materials (both information, tools, and text) that are arranged systematically, which display a complete picture of the competencies that students will master and are used in the learning process for planning and reviewing the implementation of learning. (Tunggawardhani & Susanti, 2022). The process of developing or adding the latest teaching materials is very important for educators to make learning implementation more effective, efficient, and aligned with the competencies to be achieved.

The development of teaching materials cannot be separated from the design of the learning process. (Yetra, 2020). The process of creating teaching materials is carried out in line with the teacher's competence, so that the materials make it easier for the

teacher to deliver them. (Abdurahman et al., 2024; Fajriyah et al., 2024). Preparing the right teaching materials will help students more easily understand the material presented. Module development is carried out in line with developments in the industrial world and the needs faced by students upon graduating from school. Attractive teaching materials and neatly organised material will increase student enthusiasm in reading and learning the material presented (Razis et al., 2018).

At this time, the learning process in the world of education has used a variety of learning media to encourage and attract students to carry out learning. However, in the field, there are some who still use teaching materials in the form of packages or materials that are already available. The ability of educators to develop and compile their own teaching materials in line with what is being done in the field is a potential that can enhance educators' professionalism. Utilisation of field conditions during the learning process at training in-

stitutions is one strategy that can be used to develop teaching materials, meaning that teaching materials or modules that are in accordance with the teaching material and what is needed by students can make them feel comfortable and can be done well in the ongoing learning process. Teaching materials will reduce the burden on teachers in presenting material (face-to-face), so that teachers have more time to guide and assist students in the learning process. Teaching materials are useful to help educators in carrying out learning activities.

The field conditions found by researchers include the lack of ability to prepare and develop teaching materials within training institutions in the industry. The training institution also carries out a learning process in collaboration with the government to improve competence and prepare a professional workforce. The teaching materials at the training institution are still not optimal; by 'not maximising,' we mean the lack of breadth in the teaching materials provided. The teaching materials are included in the goal of the success of the learning process at the training institution. The characteristics of a teaching material include self-instructional, self-contained, standalone, adaptive, and user-friendly. (Famulaqih & Lukman, 2024). Preparing quality teaching materials is crucial for training institutions, as it directly impacts student learning outcomes and the development of competent professionals.

## 2 RESEARCH METHOD

The approach used in this research is a descriptive qualitative one. Based on the formulation of the problem, this research requires exploratory activities to explain and understand the problems under focus. Data and information will be collected through interviews, observation, and documentation of relevant data sources. This means that the data collected is not numerical but comes from interview results, observations, documentation, and other sources that support the research.

The research method is a case study. Case study research aims to maintain the integrity of the object under study and is characterised by its unique target and case focus. The research location is in one of the industrial training institutions in Yogyakarta City, Indonesia.

Respondent data sources are divided into two types: primary and secondary data. Primary data are data in the form of spoken words, gestures, or behaviours per-

formed by trustworthy subjects, namely research subjects or informants. Meanwhile, secondary data is data obtained from data collection techniques that support primary data. Based on the author's observations and literature reviews, this secondary data can be obtained from graphic documents, such as training modules.

The data collection techniques used are interviews, observation, and documentation. Informants who can provide information about the object of study are trainers who are in training institutions, as evidenced by the teaching materials used. While the data collection tool is to use equipment in the form of audio, video, and camera.

Data analysis used in this research consists of data reduction, data presentation, and conclusion drawing. Checking the validity of the data is done by the triangulation technique. The triangulation technique is a data analysis technique in qualitative research with a process of reviewing, sorting, and grouping data with the aim of compiling the focus of the research and developing it into a theory of research results.

## 3 RESULTS

The results of observations made by researchers on teaching materials contained in one of the training institutions in the company are as follows.

1. Teaching materials for machining  
The machining module was found to be only an outline of the material and images that were not the latest. This module still uses old references, and there is no development process in the machining module.
2. Engineering drawing teaching materials  
The results of observations on the technical drawing module still lack discussion related to technical drawing material in detail. The contents of the technical drawing module are only general and less specific.
3. 5S/5R teaching materials  
Training institutions in the industry have implemented 5S/5R, so there is a module about this. However, the findings on the 5S/5R module are only in the form of printouts of PowerPoint presentations, so it is only in the form of small writing with a brief explanation.
4. Teaching materials for operating CNC  
The results of observations found in this module are only in the form of steps with a less neat order, so that outside the module readers cannot understand the contents of this module.

#### 5. Teaching materials for measurement

The measurement module contained in the training institution was found to be lacking in terms of the material in general and incomplete in its discussion. This module has a front cover, making it less attractive in its presentation.

The findings on some teaching materials can still be categorised as not suitable as a student's guide for learning. With these findings, it is expected that there will be an evaluation of all training institutions to develop teaching materials regularly, so that they can keep up with developments outside and be able to prepare trainees to become a professional workforce.

## 4 DISCUSSION

### 4.1 Use of teaching materials and reasons for choosing teaching materials

Teaching materials have an important role in the learning process because they can help implement the learning process. The existence of complete teaching materials will make it easier for trainees and trainers to achieve the objectives of the training institution, which is to prepare a professional workforce. If teaching materials cannot be maximised in meeting the needs of trainees, it will make it difficult for participants to understand them. This can be exacerbated if the trainer delivers the material too quickly and less clearly. Teaching materials are very important to develop as an effort to improve the quality of learning. (Mutaqi & Nurcahyaningtias, 2021).

As a learning resource that is utilised indirectly, learning materials are supporting materials that function as a complement. Examples are reading books, magazines, video programs, leaflets, posters, and teaching comics. This learning material is generally prepared outside the scope of curriculum material, but has a close relationship with its main purpose of providing deepening and enrichment for trainees. Teaching material is a tool that helps students to learn a competency or basic competencies so that they can master all competencies thoroughly (Muqodas et al., 2015).

There are several types of teaching materials commonly used by teachers and students. Each has its own characteristics. Types of teaching materials can be divided into four, namely: (1) printed teaching materials which include, books, modules, student worksheets, brochures, leaflets, hand outs, wallcharts, photos/images, models/markets (2) audio program teaching materials which include, cassettes/discs, radio (3) audio visual teaching materials which include,

videos/films, people/speakers, interactive teaching materials (Azzahra et al., 2022). Teachers can choose one or more types of teaching materials that already exist or can develop their own as needed.

Based on the results of interviews with trainers at the training institution, the teaching materials used are makeshift; in other words, there are teaching materials that are only in the form of printouts of the PowerPoint presentations that have been delivered, so that the content is only a brief description of the material. The reason for using these teaching materials is the lack of competence of a trainer in developing teaching materials, as revealed by the manager of the training institution.

### 4.2 Analysis of teaching materials

The teaching materials to be analysed are teaching materials at training institutions in the manufacturing field. This training institution cooperates with the government to prepare a professional workforce in the field of manufacturing. Training institutions that will prepare professional workers are required to have appropriate teaching materials, which can improve competence and develop what has been obtained by trainees. The trainees in this training institute are graduates of SMK students with expertise in machining engineering.

Based on observations made by researchers on teaching materials used by training institutions that refer to the standards issued by the National Education Standards Agency, 2006, from Indonesia, are content feasibility, presentation feasibility, language feasibility, and graphic feasibility.

#### 1. Content Feasibility

From the teaching materials analysed in the content feasibility section, several aspects can be seen. The first researcher found that, in terms of the overall content of teaching materials, the suitability of the material presented in the teaching materials did not meet the needs of the trainees. Because in some of the examples of cases contained in the teaching materials, there are incomplete explanations of teaching materials on basic mechanical engineering knowledge that will be conveyed to students. In addition to the incomplete theory in the material, there is a general lack of material about basic mechanical engineering knowledge; the material that has been included is material about the machines in the institution.

#### 2. Feasibility of presentation

The presentation used in teaching materials on ba-

sic knowledge of mechanical engineering is not good, because there is no table of contents in the teaching materials. The absence of a table of contents in teaching materials will make it difficult for trainees to find the material needed. Limited information about existing sources or materials, so participants must develop their own material to add insights that they want to know. In addition, the less systematic presentation of the material can hinder participants' understanding in learning the basic concepts of mechanical engineering sequentially (Magdalena et al., 2020). Therefore, improvements are needed in the structure of teaching materials, including the addition of a table of contents and more complete references so that participants can more easily access and understand the material.

### 3. Language feasibility

There are several errors found when analyzing basic mechanical engineering knowledge teaching materials at training institutions. Textbooks must have good standards of straightforwardness. Straightforwardness can be reviewed from 3 aspects, namely sentence effectiveness, word accuracy and term standardization (Purnanto & Mustadi, 2016) (Purnanto & Mustadi, 2016). In the aspect of language use, the language used in the teaching materials is still inappropriate. In this case the language used is language that is difficult to understand and only a brief explanation of the understanding and utilization of the tools. Aspects of word usage, the use of words that are less precise in their writing, what is meant by less precise is that there are several words that are wrong in their writing, not in accordance with the previous sentence.

### 4. Feasibility of graphics

The appearance or design of teaching materials is still sober and there are several other materials that are only in the form of printouts from power point. With the lack of attractive design of the module can result in less interest in training participants in opening or reading from these teaching materials. Ideally the module is in the form of exposure to the necessary theory and images, so that participants will be more interested in the teaching materials delivered by the teacher.

Of the four feasibilities that have been observed by researchers agree with the results of interviews with one of the trainers and managers of training institutions, that trainers are still not able to compile teach-

ing materials optimally. This shortcoming is because the trainer does not have a background in education but rather from a technician from the company, so the trainer has difficulty in preparing teaching materials.

Teaching materials have criteria to maximize learning, including (1) feasibility of material content, (2) feasibility of presentation, (3) feasibility of language, and (4) feasibility of graphics. The characteristics of the teaching materials are (1) self instructional, (2) self contained, (3) stand alone, (4) adaptive, and (5) user friendly (Arsanti, 2018).

## 5 CONCLUSION

Based on the results of research and analysis of teaching materials that have been carried out, the results of this study can be concluded that the level of suitability of the material to the needs of the trainees in the teaching materials is still not fulfilling because there is some material that is not contained in the teaching materials, so that participants experience difficulties if the material needed must search for themselves.

The level of language used in the textbook is still unclear because there are several spellings that are not in accordance with the applicable Indonesian language rules. In addition to the lack of conformity with Indonesian language rules, the preparation of sentences and the description of the material is still incomplete and only an outline is conveyed in the teaching materials.

Although still lacking in the development of teaching materials used, it already has positive values for trainees in the learning process in training. Overall, the graphics on the teaching materials still have shortcomings in design so that there is less interest in trainees to read them.

In choosing the teaching materials to be used, the training institution should recommend or develop teaching materials that are considered to meet the needs of the trainees, because the training institution knows better the needs and characteristics of the trainees. For trainers, training should be included in making or developing good and correct teaching materials, so that trainers can develop materials independently and can adjust the learning process in the field. An increase in the literacy of a trainer must be developed. With the high literacy of a trainer, it will be easier to develop existing teaching materials. Teaching materials that are rich in literacy will make it easier for trainees to learn, and can be used as a reference in carrying out work in accordance with the fields they

have learned.

Interesting teaching materials are one of the factors for trainees in reading the teaching materials provided. With high enthusiasm in studying interesting teaching materials, it will have a positive impact on trainees who are conducting training. Creativity here is one of the needs that trainers must have, the higher the creativity of the trainer will have more ideas in developing interesting teaching materials.

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