Curriculum Development Based On INQF and Business/Industries Sector for Improvement Competency of Basic Pattern Making Students at Vocational High School

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Abstract. In this era of globalization, every human resource is faced with a competitive climate that will have a major impact on the development of the business and industrial sector. Therefore it is deemed necessary to research the development of curriculum based on INQF and the business/industries sector in order to improve the competence of Sewing Technique for Vocational High School Students of fashion clothing program. The development of curricula based on INQF and the business/industries is an activity to produce a curriculum that suits the needs of the business and industries sector. The formulation of the problem in this research are: (1) what is the curriculum based on INQF and the business/industries sector?; (2) how is the process and procedure of curriculum development of fashion program profession based on INQF and the business/industries sector?; And (3) how the result of the curriculum of fashion expertise based on INQF and the business/industries sector. The aims of research are: (1) explain what is meant by curriculum based on INQF and business/industries sector; (2) to know the process and procedure of curriculum development of fashion program profession based on INQF and the business/industries sector; And (3) to know the result of the curriculum of clothing expertise based on INQF and the business/industries sector. The research method chosen in developing curriculum based on INQF and business/industry sector is using by 4-D model from Thiagarajan, which includes: (1) define; (2) design; (3) development; And (4) disseminate. Step 4, not done but in this study. The result of the research shows that: (1) the curriculum based on INQF and the business/industries sector is the curriculum created by applying the principles and procedures of the Indonesian National Qualification Framework (INQF) that will improve the quality of graduates of Vocational High School level 2, and establish cooperation with Business/industries as a guest teacher (counselor) in the learning process; (2) process and procedure of curriculum development of fashion program profession based on INQF and business/industries sector is process and procedure of curriculum development of fashion program profession based on INQF and business/industries sector there are several stages: feasibility study and requirement, preparation of initial concept of curriculum planning based on INQF and the business/industries sector in the field of fashion, as well as the development of a plan to implement the curriculum based on INQF and the business/industries sector in the field of fashion, this development will produce a curriculum of fashion proficiency program in the form of learning competency of sewing technology where the implementer of learning (counselor) Is a guest teacher from business/industries sector. (3) the learning device validity aspect earns an average score of 3.5 with very valid criteria and the practicality aspect of the device obtains an average score of 3.3 with practical criteria.

1. Introduction

In this era of globalization every human resource is faced with a competitive climate that will have a major impact on the development of the business world and the world of industry will find ways to maintain their own existence, by always improving competent Human Resources (HR) Which occurred in this century resulted in changes in the overall life of society, not least the education sector. In this sector, education should be able to address and anticipate the development of labor market liberalization and development of science-based society. Therefore, innovations in various educational
methods and models should also be developed (UNESCO: 2006). Looking at the development situation and demands on the world of work or business/industry, then vocational school graduates should be able to print a skilled and competent workforce. To create competent graduates, schools must be able to provide the best for their student’s one of them, through learning with an innovative curriculum and in accordance with INQF. Therefore it is deemed necessary to research the development of curriculum based on INQF and the business/industry in order to improve entrepreneurship competence for SMK Students of fashion clothing programming. The expected result of this research is a learning tool for curriculum development based on KKNI and business/industry become feasible with the valid and practical element [1].

The formulation of the problem in this research are: (1) what is the curriculum based on INQF and the business/industries sector?; (2) how is the process and procedure of curriculum development of fashion program profession based on INQF and the business/industries sector?; And (3) how the result of the curriculum of fashion expertise based on INQF and the business/industries sector. In its development, the curriculum involves various parties, especially those who directly or indirectly have an interest in the existence of a designed education, ranging from educational experts, study experts, teachers, students, education officials, practitioners or role models or Other members of the community.

According to Hidayat, said six principles of curriculum development is as follows: principles of relevance, it is the closeness of the relationship. When associated with education with the community then must have a close relationship so that the educational results obtained will be useful for the life of learners in society. The principle of flexibility, the developed curriculum must have room for freedom of action. In this regard, it is related to the flexibility in choosing educational programs and flexibility in the development of learning programs. Efficiency principle, this principle relates to the effort, cost, time and energy used in the learning process can produce optimal learning process and result. Thus, curriculum development should be efficient. Principles of effectiveness It is the extent to which curriculum planning can be achieved in accordance with predetermined desires. The effectiveness of the curriculum is related to the teaching process of the educator, and the learning process of the learner.

The principle of continuity, this principle in curriculum development indicates a link between education level, type and educational program and field of study. A purpose-oriented principle, the principle asserts that the goals are the direction for the development of other components in curriculum development. For that purpose, the curriculum should be clear, meaning that the curriculum objectives must be clearly understood by the curriculum implementers to be elaborated into other, more specific and operational objectives. Curriculum objectives should also be unity, meaning that cover various aspects of education. [2]

According to Hamalik, the curricula development consists of six stages. Phase 1 is a feasibility study and needs, phase 2 is the preparation of the initial concept of curriculum planning, stage 3 is the development of plans to implement the curriculum, stage 4 is the implementation of curriculum trials in the field, stage 5 is the implementation of the curriculum, and stage 6 is the implementation of assessment and monitoring the curriculum, and stage 7 is time Frame repairs and adjustments.

Stage 1: Feasibility study and needs the curriculum developer conducts the program needs analysis activities and formulates the basics of consideration for the development of the curriculum. For that, the developer needs to do documentation studies and/or field studies. Stage 2: Preparation of the initial concept curriculum. This initial concept is formulated based on the formulation of ability, and then formulate the objectives, content, learning strategies in accordance with the pattern of the systemic curriculum. Stage 3: Develop a plan to implement the curriculum. The preparation of this plan includes the preparation of syllabi, the development of lesson materials and other material resources. Stage 4: Implementation of the curriculum in the field. The field curriculum testing is intended to determine the level of reliability, its possible implementation and success, the constraints and problems that arise and the supporting factors available, and others related to the curriculum implementation. Stage 5: Implementation of the curriculum There are 2 activities that need to be done, our dissemination activities, namely the implementation of the curriculum within the broader scope of the sample and implementation of a comprehensive curriculum covering all educational units.
at the same level. Stage 6: Implementation of curriculum assessment and monitoring. During the curriculum implementation, it is necessary to conduct a review and monitoring regarding curriculum design and the results of curriculum implementation and its impact. Stage 7: Implementation of improvements and adjustments. Based on the assessment and monitoring of the curriculum, accurate data and information can be used as a material for conducting the curriculum if necessary or adjusting the curriculum to the circumstances. Improvements were made to several aspects of the curriculum [3].

Regulation of the President of the Republic of Indonesia Number 8 Year 2012 regarding the Indonesian National Qualification Framework which explains that the level of Vocational qualification is at level 2 which has the following competencies: 1) Ability to carry out a specific task, using commonly used tools, information and working procedures, and demonstrate performance with measurable quality, under the direct supervision of his / her supervisor, 2) Have basic operational knowledge and factual knowledge of specific work areas, to be able to choose available solutions to common problems, 3) Responsible for selfemployment and Given the responsibility of guiding others [1].

According to Yunus, business/industry is one of the important elements in the world of employment, so the need for adjustment between business/industry with the world of education as a source of labor income and employers appropriate with industries sector needed [4]. According to Megasari in his research, the role and function of the curriculum are: (1) as the structural path of the psar as well as the absorption of human resources and the users of scientific and technological knowledge; (2) to help develop relevant curriculum with the SMK; (3) to help provide experienced workforce as guest teachers in order to improve the quality and skills of educators in accordance with the development of science and technology; (4) to provide information on the development of science and technology in business world and work world; (5) provide technical advice in related fields; (6) to give input to SMK about job opportunity concerning SMK study program of kind, type and specification; (7) provide facilities of good means, facilities and to support the accuracy of teaching in accordance with industrial procedures; (8) provide suggestions on improving the quality of SMK graduates in accordance with the needs of the world of work, so that students who have completed vocational education can be ready to work in accordance with their respective expertise field with all the power it has [5].

2. Method

This research takes place in SMKN 3 Kediri because this school is one of the schools that often use guest teachers from the business/industry in the process of learning. The method used in this research is the research and development, using the Four-D models. According to Thiagarajan, here are four stages of research and development using the Four-D models that define, design, develops, and disseminate. 4D development model consists of four main stages: Define (Define), Design (Design), Develop (Development) and Disseminate (Spreading) [6].

![Figure 1. 4 D model of development](image-url)
Development and trial stage: The purpose of the define phase is to determine and establish learning objectives. This initial stage will be analyzed the needs of learning tools (RPP, LKS, and LP) in accordance with the curriculum based on INQF and the business/industry then set the learning objectives and teaching materials and constraints that will be developed. Stage define or definition has five steps which the analysis of the front end (front-end analysis), analysis of learning (learner analysis), analysis of the task (task analysis), analyzes the concept (concept analysis), set a goal (Specifying instructional objectives).

The purpose of the design phase is to design a learning device (lesson plans, worksheets, and test). This phase can begin with the preparation of test grids, media selection, format selection, and initial design. Four steps in the design phase (design) are constructing the criterion-referenced tests (establishing the criteria and grating tests), media selection (selection of media), the format selection (selection format), the initial design (the initial design). The purpose of step develop (development) is to modify the type of design of learning materials through the validation and expert assessment (expert appraisal). The empirical test phase is to test the revised learning tool to get consistent and effective results. To declare a learning tool that is compiled valid or not is to interpret the criteria of the assessment of 1 guest teacher from the business/industry (fashion businessman "yayuk' modes"), 1 person deputy of the head of the curriculum and 3 teachers productive clothing, as follows.

| Table 1. Criteria of validity coeffitien of tets instrument |
|------------------------------------------------------------|
| Range           | Assesmen criteria |
|-----------------|-------------------|
| 3,4 s/d 4       | very valid        |
| 2,6 s/d 3,3     | Valid             |
| 1,7 s/d 2,5     | less Valid        |
| 3,4 s/d 4       | invalid           |

The analysis performed is the result of the research with the average score ($x$) of the validator in accordance with the validity criterion.

$$x = \frac{\sum xi}{n}$$

Information:

$x$ = Average value of validation results

$\sum xi$ = Number of answers observer

$n$ = number of observer

3. Results And Discussion

3.1. Meant by curriculum based on INQF and business/industries sector

According to According to Allais 2011, the national framework or the level of qualification/type of learning qualification at a certain level of education and sector that has been agreed by the government to improve the quality of graduates of an educational institution [7]. According to Toma 2013, the national vocational qualification framework is the entire educational qualification structure that contains all the qualifications of vocational education to improve the learning achievement or improve student achievement [8].

According to Serbian Ministry of Education 2013 or Kemendikbud in Serbia in 2013, the national vocational qualification framework is a qualifying instrument that organizes students in vocational schools such as labor market/industry as well as applying long-life learning [9]. According to Stanciu, the framework of the national qualification is the introduction stage of learning that is bleeding the world of work as well as adjusted to the needs of the world of an industry will be labor market and society [10].
According to Gudeva, the national qualification framework should be elaborate, comparable and appropriate for application at the vocational secondary education level, in order to create graduates, with the capacity to work, the level and the learning. [11] Thus, all graduates can enter the workforce in accordance with their capacity. The business world/industry is one of the important elements in the world of manpower ... so it is necessary to adjust the business/industry with the education world as a source of a competent workforce and in accordance with the needs of the world [4]. According to Notonegoro, cooperation between vocational schools or SMK with the business world/industry is an effort to print students (graduates) into the appropriate workforce needed by the industry. Schools that make guest teachers from the business world/industry should have practical equipment in accordance with industry procedures in order to support the learning process. [12] This is very important to do because with the complete equipment then the guest teacher will easy to carry out the learning.

According to Indriaturahmi, et al, education field / vocational skills programs in collaboration with business/industries sector also must apply INQF and has the infrastructure, financing and adequate teaching staff so that the potential of graduates according to the needs of the workforce. [13] Based on the study above that can be interpreted is a curriculum-based INQF and business / industry is a curriculum that is made by applying the principles and procedures Indonesia National Qualifications Framework (INQF) that will improve the quality of graduates of Vocational High School at level 2, and establish cooperation With the business / industry as a guest teacher (counselor) and using equipment in accordance with industry standards in the learning process.

3.2. Process and procedure of curriculum development of fashion program profession based on INQF and the business/industries sectors.

Stage 1: Feasibility study and needs the curriculum developer conducts the program needs analysis activities and formulates the basics of consideration for the development of the curriculum. For that, the developer needs to do documentation studies and/or field studies. Stage 2: Preparation of the initial concept of curriculum planning. This initial concept is formulated based on the formulation of ability, then formulate the objectives, content, learning strategies in accordance with the pattern of a systemic curriculum. Stage 3: Development and plan to implement the curriculum. The preparation of this plan includes the preparation of syllabic, the development of lesson materials and other material resources. Curriculum development in these empirically using only three stages to stage 3 curriculum developments and implement the plan covers the development of appropriate learning tools KKNI and business/industries sector.

3.3. Results-based curriculum development and INQF business/industry based on analysis of 4D

Stage Define
From the analysis of existing devices obtained data that learning tools consist of the syllabus, RPP, and the question sheet, still not oriented stimulus of desired learning outcomes. The test is only done at the end of learning materials, which only prioritize aspects of knowledge, and test questions never in test valid test.

The material presented is good and covers the current developments; the material uses examples that can be understood by the students. The language used by the teacher is appropriate and easy to understand by the students, teachers is attractive in the learning process. From observed result can be concluded that learning device can be accepted with some improvement. a) Define Stage, From the analysis of existing devices obtained data that learning tools consist of a syllabus, RPP, and the question sheet, still not oriented stimulus of desired learning outcomes. Test only has done at the end of learning materials, which only prioritize aspects of knowledge, and the test never In test valid test. The material presented is good and covers the current developments; the material uses examples that can be understood by the students. The language used by the teacher is appropriate and easy to understand by the students, teachers activities in the learning process from observed result can be concluded that learning device can be accepted with some improvement. b) Design stage, based on the availability of facilities and infrastructure that adjust to the learning materials to be delivered then used sewing machine industry (high speed). Learning model used in this learning process using direct learning model. So every step in the RPP will be developed using syntax in the direct learning model.
that will be developed in accordance with the curriculum based on INQF and the business/industries sector. The stages of preparing the test plan begin with the analysis of student tasks, concept analysis, and learning objectives so that the grid can be developed into a matter of test. Question made include aspects of attitude, knowledge, and skills. c) Develop stage, In this development stage, learning tools are validated by the instrument. The result of the instrument assessment is calculated using the average formula. With the following results:

| No | Material       | Average | Category  |
|----|----------------|---------|-----------|
| 1  | Syllabus       | 4       | Valid     |
| 2  | RPP            | 3.0     | Valid     |
| 3  | LKS            | 3.3     | Valid     |
| 4  | LP and keys    | 3.7     | very valid|
|    | Average rate   | 3.5     | very valid|

Based on descriptive analysis by categorizing valid learning tools based on the development of INQF-based curriculum and business world/industry that syllabus shows average score 4 is in very valid category, RPP shows average score of 3.0 is invalid category, LKS shows average score 3.3 are In the valid category as well as LP and key of LP shows the score of 3.7 are in very valid category, so the overall average shows the 3.5 score is in very valid category. Based on descriptive analysis by categorizing the practicality of learning devices based on the development of INQF-based curriculum and business world / industry that the opening shows average score 3.6 is in the category of very practical, the content shows the average score of 3.0 is in the practical category, the cover shows the average score of 3.3 is in the category of practical as well as class management showed 3.3 scores are in the practical category, so the overall average shows a score of 3.3 in the practical category. d) The disseminate stage. At this stage of deployment is not done but there is in this study.

### 4. Conclusion

The conclusions of this study are: Developing a curriculum-based KKNI and business / industry is a curriculum that is made by applying the principles and Indonesia National Qualifications Framework (INQF) procedures that will improve the quality of graduates of Vocational High School at level 2, and establish cooperation with business / industry as a guest teacher (supervising personnel) using equipment in accordance with industry standards in the learning process. The process and procedures for curriculum development program membership dressmaking based INQF and business/industry are processes and procedures of curriculum development program membership dressmaking based INQF and business/industry there are several stages of a feasibility study and needs, drafting the initial concept of curriculum planning Based on KKNI and the business world / industry in the field of fashion, as well as the development of a plan to implement the curriculum based on KKNI and the business world / industry in the field of fashion, this development will produce a curriculum of fashion proficiency program in the form of learning competency of sewing technology.
where the implementer of learning (counselor) a guest teacher from the business/industry. Results of devices based learning KKNI and World business/industry terms of validity learning device obtained an average score of 3.5 with very valid criteria, And the practicality aspect of the device obtained an average score of 3.3 with practical criteria. It can be concluded that the eligible device for use in learning because it is very valid and practical criteria.

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