



Vocational High School Entrepreneurship Learning Management Model based on Local Wisdom Products

Sherly^{1*}, Kisno², Adam Kešner³

¹Sekolah Tinggi Ilmu Ekonomi Sultan Agung, Indonesia

²Sekolah Tinggi Akuntansi dan Manajemen Indonesia (STAMI), Indonesia

³Czech University of Life Sciences Prague, Czech Republic

*Correspondence to: sherly@stiesultanagung.ac.id

Abstract: Entrepreneurship is a critical activity in driving economic development, and entrepreneurial talents and qualities align with the 4.0 Industrial Revolution and its impact on the economic sector. However, the implementation of Creative Projects and Entrepreneurship in Vocational High School (VHS) subjects tends to be theoretical and unrelated to societal problems. This study intends to develop a model of entrepreneurship learning management for VHS based on local wisdom products. A preliminary study, initial product creation, and initial product test using expert and practitioner validity, limited test, final product test using quasi-experiment, dissemination, and implementation were some of the techniques used to implement a research and development design. The study discovers that the local wisdom product and its marketing become a crucial component of social constructivism-based entrepreneurship education. The model design results in three main aspects such as general information (school identity, preliminary competency, Pancasila students' profile, facility and infrastructure, students' target, and learning materials), core competency (objective, meaningful comprehension, stimulus questions, learning process, assessment, remedial, and reflection), and attachment (students' worksheet, references, glossary, and works cited). The initial product's outcome demonstrates that every model plan and item generated falls within the "good" category. For the implication in the commencing year, the principals of VHS who implement the Emancipated Curriculum can adopt or adapt this initial model until the final testing process is carried out.

Keywords: vocational high school, school entrepreneurship, learning management model, local wisdom products

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INTRODUCTION

Entrepreneurship is a very important activity in driving economic development. The emergence of the entrepreneurial phenomenon creates great opportunities, especially in the resulting job choices, which ultimately have a positive impact on various aspects including increasing income, the country's economy, lifestyle, and other aspects (Bell & Bell, 2020; Brüne & Lutz, 2020). In essence, entrepreneurship is synonymous with doing other business ventures, but has several competencies that distinguish it from the traditional approach (Handayati et al., 2020), including (1) innovation which is one of the characteristics that involves criticizing current business scenarios and devising new ways to improve efficiency and effectiveness; (2) resource optimization, in which an entrepreneur makes full use of resources to produce efficient business processes; (3) risk-taking that is the root of entrepreneurship and is closely related to the ability and courage to take new risks; (4) the creation of new business fields that provide attractive job opportunities for people; and most importantly (5) creativity, which is a skill and characteristic that an entrepreneur must have. These five entrepreneurial competencies and characteristics are the focal point of entrepreneurship education.

These entrepreneurial competencies and characteristics are in line with the 4.0 industrial revolution and its impact on the economic sector which gave birth to various creativities for the smooth running of the production process. This results in the emergence of various small and large companies, industrial cities, and new jobs to boost the country's economy. This phenomenon is inseparable from human capital theory (Debarliev et al., 2022; Kang & Mok, 2022) which states that the assumption behind the human capital theory is that by putting more emphasis on education and training, people may become more productive and efficient. Human resource analysis is known as human capital and it discusses how our social structure influences the creation of economic value. The theories regarding entrepreneurship and human capital have relevance to the demands of the Emancipated Curriculum, especially in the Vocational High School (VHS) Creative Project and Entrepreneurship subjects whose main focus is to produce graduates who are creative, innovative, productive, and independent (de Sousa et al., 2022; Sherly et al., 2022). Creative Projects and Entrepreneurship are subjects that use a project-based learning approach to actualize and express the competencies mastered in the activities of making products/services work creatively and with economic value. Furthermore, the objectives of the

Creative Project and Entrepreneurship subject aim to shape and develop students' abilities to use soft skills and hard skills competencies through real experiences (Astiana et al., 2022).

The problems studied based on the results of previous research and became the focus of this research are as follows. First, the high unemployment rate resulted from VHS graduates (11.45%) compared to Higher Education graduates (5.98%), High School (9.09%), Junior High School (6.45%), even elementary schools (3.61%) (Indrawati & Kuncoro, 2021; Kholifah et al., 2021; Wibowo et al., 2022). Second, the implementation of Creative Projects and Entrepreneurship subjects tends to be theoretical and not in accordance with social problems that occur in society (Kakouris & Liargovas, 2021; Ratten & Usmanij, 2021), not related to the needs and potential of local wisdom products around the school environment or students, even though this is a potential that can be excelled (Fakhriati & Erman, 2022; Suartana et al., 2021). Local wisdom products are cultural products that rely on raw materials based on local wisdom (Onwuegbuzie & Mafimisebi, 2021) which are manifested in the ability to adapt, organize, and foster the influence of nature and other cultures which are the driving force behind the transformation and creation of cultural diversity (Atahau et al., 2020; Setini et al., 2020).

Thirdly, the study reveals a notable discrepancy between the expectations of the Emancipated Curriculum and the actual implementation of Creative Projects and Entrepreneurship in terms of creativity and innovation. This disparity arises due to the lack of entrepreneurial competence among educators or teachers responsible for delivering these lessons. Since they lack first-hand experience as entrepreneurs, they struggle to provide relevant references and practical insights to students. Consequently, this hampers the ability to foster genuine creativity and innovation in the realm of Creative Projects and Entrepreneurship (Maritz et al., 2022). Furthermore, the fourth point highlights the inconsistent findings in research studies on entrepreneurship. On one hand, some studies demonstrate a positive attitude towards entrepreneurship, indicating its potential for fostering economic growth and individual empowerment (Wang et al., 2022). However, on the other hand, some studies have failed to support the development of entrepreneurial competence (Kholifah et al., 2022). This inconsistency can be attributed to various factors, such as differing perspectives, methodologies, media used for research, strategies employed, and even variations in the content and definition of entrepreneurship itself. These discrepancies underscore the complexity of understanding and effectively promoting entrepreneurship, as it encompasses a wide range of elements that can yield diverse outcomes based on the context of the study and the specific aspects of entrepreneurship being investigated.

From these problems, a reconstruction of Creative Projects and Entrepreneurship learning is needed that is adapted to the context of Indonesian local wisdom. The theory of social reconstruction is very relevant to answering this problem as it links social problem-solving with the educational environment. In addition, this theory is also expected to be able to answer problem-solving starting from the individual to the social environment that is in the student's environment. This theory states that reality places individuals against their environment as a social reconstruction (Rannikmäe et al., 2020). This theory places learning as a collaborative process, a process of mutual interaction in the learning context (O'Connor, 2022). Several previous studies find that aspects of social interaction that emphasize entrepreneurship learning have a positive relationship with students' interest in entrepreneurship.

The study in this research is important for developing innovation in learning Creative Projects and Entrepreneurship based on local wisdom products by using social reconstruction theory as an effort to form VHS graduates who have entrepreneurial interests and behaviour, especially in creativity and innovation in creating or developing products and services. The development in this research is carried out to strengthen previous research through the establishment of entrepreneurship learning in the local context (Najib et al., 2020; Tran & Truong, 2022). The purpose of this research is to develop a learning model design for Creative Projects and Entrepreneurship based on local wisdom products at the VHS. The second objective is to create product prototypes of educational models, in the form of formulations/sharpening of learning outcomes, modules, textbooks, learning guidebooks, media, and assessment tools.

METHODS

The research and development model by Borg and Gall (1983) was the method used in this study. The steps of this model were modified and combined with constructivism-oriented design principles (Kara, 2018). The main stages in this research include (a) the initial stage, in the form of preliminary studies, initial product development, and initial product testing through expert and practitioner tests; and (b) the second stage, in the form of initial product testing through limited testing, field testing through quasi-experimental test, dissemination, and implementation as shown in Figure 1 below.

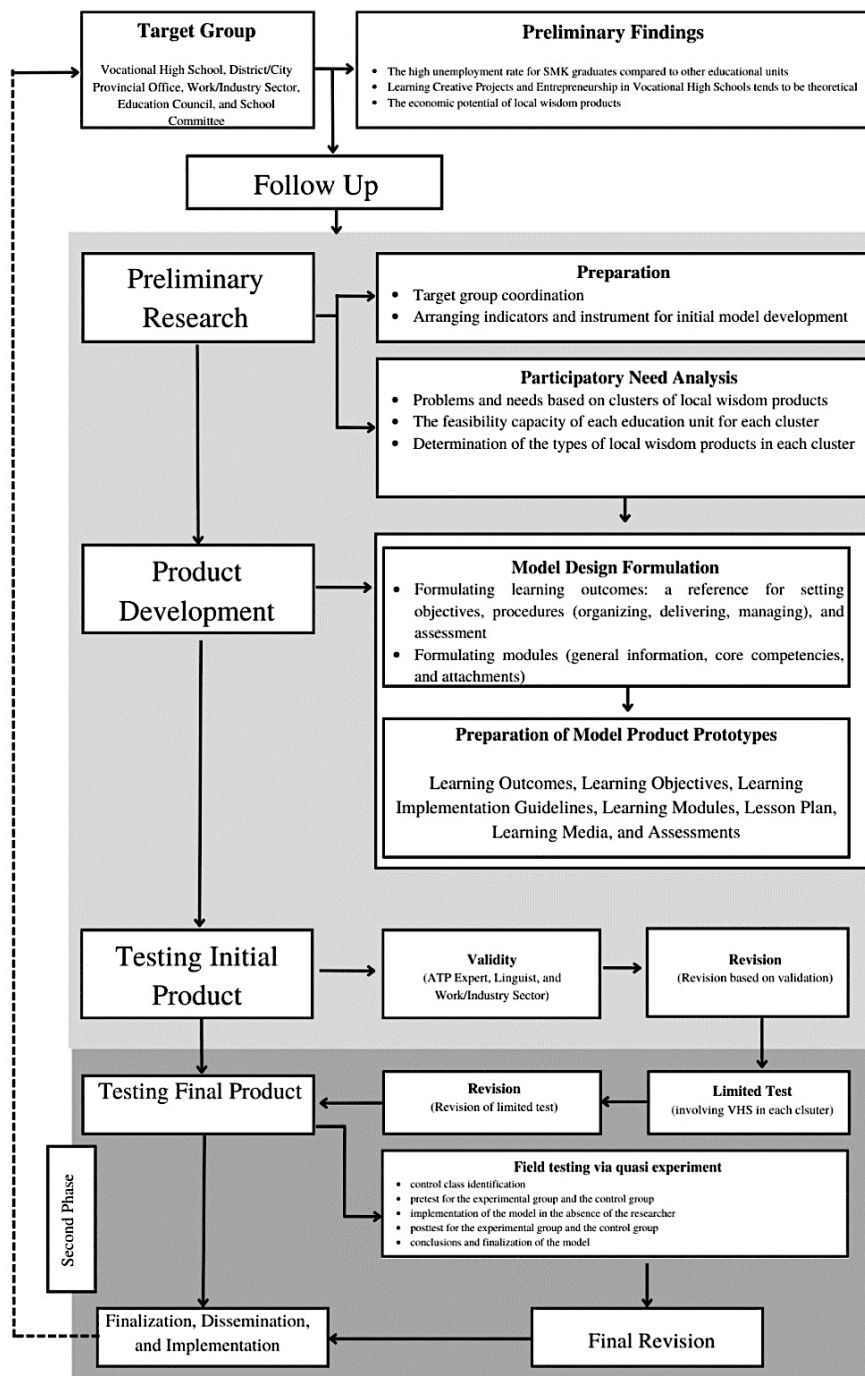


Figure 1. Roadmap for research and development of learning models for creative and entrepreneurial projects based on local wisdom products

The fishbone diagram method by Ishikawa (1968) (in Pham et al., 2022) was used in the preliminary study which included people, materials, procedures, equipment, and environment variables. Teachers of Creative Projects and Entrepreneurship, school principals, and vice principals in the field of the curriculum are the subjects interviewed using cluster sampling. Of the five districts in the Tapanuli region in North Sumatra, it was determined that Samosir Regency represented the Gorga Batak carving craft industry and Toba Regency represented the local *ulos* cloth craft industry. School committees, education boards, curriculum development teams from the local education office, and groups of local crafts/skills entrepreneurs or the business world, the industrial world, and the world of work (DUDIKA) were also interviewed as informants using purposive sampling. Data collection used questionnaires, Focus Group Discussion (FGD) guidelines, interviews, and document review. The instruments used were questionnaires arranged in the form of FGD guidelines and interview guides to obtain data or reality about the problems, needs, and carrying capacity of schools related to Creative and Entrepreneurial Projects. Document studies were conducted to complement and verify results, especially related

to Creative and Entrepreneurship Project development policies, learning achievement documents, modules, textbooks, and other supporting tools owned by schools. The initial product development stage was carried out in the form of preparing a model design and compiling a product prototype model. The preparation of this design was carried out using a backward design by Gagne ([O'Connell et al., 2022](#)), namely by determining learning outcomes in advance. The results of the drafting formed the basis for compiling product prototypes, in the form of sharpening learning outcomes and learning objectives, modules, learning implementation plans, media, and assessments. The subjects involved were also similar to the subjects in the preliminary study. The feasibility of development results was measured by the accuracy of the design with the formulated learning outcomes, while the feasibility of product prototypes was measured by the accuracy of the resulting design. Therefore, the instruments used were the FGD guide and the development result feasibility interview guide. The initial product test was carried out in two ways, namely through expert/practitioner validation tests and limited trials. For the initial stage, only a validation test was carried out involving one learning technology expert, one Indonesian language expert, and DUDIKA practitioners/local craftsmen. The instrument for the validation test used a questionnaire adapted from the indicators developed by Divayana et al. (2021) and Jena (2020). Practitioners' validation test instruments were collected using FGD guidelines. Assessment and input at the initial product test stage were a reference for making product improvements. Data from expert and practitioner validation results were analysed using a quantitative descriptive technique with scores in the interval 1-5, as listed in [Table 1](#).

Table 1. Assessment/Response
(AR) Criteria

Intervals	Category
pt > 4	Excellent
3 < pt ≤ 4	Good
2 < pt ≤ 3	Moderate
1 < pt ≤ 2	Poor
pt = 1	Very Poor

RESULT AND DISCUSSION

Problems of Creative Projects and Entrepreneurship based on [Ishikawa's](#) fishbone diagram (1968) show several findings. First, from the material aspect, it is found that the learning materials do not focus on creativity and innovation but are in the form of general entrepreneurship reference books, and are not yet based on local wisdom products. Second, aspects of the learning process are conveyed through lectures without joint activities and interactions, and without going through entrepreneurial practices. Third, the aspect of people shows that Creative Projects and Entrepreneurship teachers have fulfilled the requirements, although there are still deficiencies found in exploring the content and learning process of Creative Projects and Entrepreneurship. Fourth, the aspect of the equipment is available even though it has not fully met the standards. Fifth, the environmental aspect shows that there is support from DUDIKA/local craftsmen in facilitating students' entrepreneurial practices.

From the results of the needs analysis with research subjects, it is found that learning Creative Projects and Entrepreneurship based on local wisdom products is urgently needed because this potential is found around the educational unit environment. Furthermore, the results of tracking the needs of students and research subjects require industrial production skills of local wisdom products as a top priority. The results of this analysis are in line with the objectives of the Creative Project and Entrepreneurship subjects as one of the VHS group subjects. The purpose of this subject is for students to develop an entrepreneurial spirit by utilizing the potential that exists in the internal and external environment of VHS. Concerning this goal, the Creative Project and Entrepreneurship subject emphasizes the formation of entrepreneurial spirit competencies, so that this goal tends to lead to the actualization and expression of the competencies mastered in the activities of making products/services work in a creative and economically valuable manner.

The development model in this study used a backward design as the theory of [Gagne et al. \(1992\)](#) (in [Kurban, 2022](#)) in the form of first formulating learning outcomes. Regarding the results of the needs analysis, the formulation of learning outcomes is that students have creativity and innovation competence in producing local wisdom products. The formulation of the learning outcomes becomes the basis for developing the design model embodied in three main aspects, namely: objectives, learning procedures, and assessment ([Reigeluth et al., 1980](#)). The design of the Creative Project and Entrepreneurial Project model based on local wisdom products is presented in [Table 2](#). The model is equipped with product prototypes, including learning outcomes, modules, textbooks, learning guidebooks, media, and assessments.

Table 2. Design of creative and entrepreneurial project learning models based on local wisdom products

Component	Explanation
Learning Objectives	Contains subject objectives, core competencies, basic competencies, and teaching indicators. All learning objectives are focused on the production capacity of local wisdom crafts and their marketing capabilities.
Learning Procedure	
a. Organization	Contains organization of the organization, presentation of drawing and text design materials, overview, evaluation, exercises, reference lists, and lists of words/terms. The organization of the material displays the steps of the production procedure.
b. Delivery	Contains material delivery using a social reconstruction approach that focuses on communication, cooperation, interaction, and practice immediately.
c. Learning Management	The learning procedure follows the flow of social reconstruction syntax, namely: (a) activation of initial knowledge; (b) presentation of new knowledge; (c) comprehension exercises; (d) practice outside academic hours with DUDIKA/craftsmen; and (e) reflection
Assessment	Assessment uses project-based assessment, which includes: (a) group project task guidelines; (b) assessment criteria on each aspect (planning, implementation, results/products, and reporting); (c) instruments; and (d) assessment rubrics.

The design in [Table 2](#) above is a reference for preparing products in the form of sharpening learning outcomes, modules, textbooks, media, learning guidebooks, and assessments. Learning outcomes and modules are prepared based on the results of model design by placing local wisdom product production skills as the main focus which is then supported by marketing skills. Textbooks as model products are also prepared based on the results of the model design which are arranged in the following manner: determining textbook identity, instructional analysis, identification of indicators, description of textbook material based on indicators, and determining evaluation in textbooks. The preparation of learning guides has components such as objectives, stimulus questions, general instructions for teachers, materials, and tools, time allocation, a summary of learning steps, descriptions of learning steps, and learning evaluation. Learning media is packaged using interactive multimedia by utilizing Wondershare Filmora, which includes text, images, sound, and video according to the demands of the material. The design of the Learning Process is structured based on the flow and structure of preparation such as lesson plans for other subjects. The final product is the preparation of an assessment tool based on project assessment according to the demands of the design model.

Table 3. Design of creative and entrepreneurial project learning modules based on local wisdom products

Component	Explanation
General Information	Contains school identity, initial competencies, Pancasila Student Profile, facilities and infrastructure, target students, learning materials
Core Competencies	Contains objectives, meaningful understanding, stimulus questions, learning processes, assessment, remedial, and reflection
Attachment	Contains student worksheets, references, glossaries, and bibliography

From [Table 3](#), the designed modules are adapted from the emancipated curriculum modules. This module contains general information consisting of school identity, initial competencies, Pancasila Student Profiles, facilities and infrastructure, target students, and learning materials. The core competencies consist of objectives, meaningful understanding, stimulus questions, learning processes, assessment, remedial, and reflection, and attachments containing student worksheets, references, glossary, and bibliography. Initial product testing is carried out through expert and practitioner tests. The first expert test was conducted to assess feasibility and presentation by involving education technology experts. [Table 4](#) data shows that the product model produced was good and proper to use.

Table 4. Properness test results and product presentation of creative and entrepreneurial project models based on local wisdom products

Model Products	Average	Category
Formulation learning objectives	4.1	Excellent
Book for students	3.5	Good
Module	3.2	Good
Teachers' guidance	4.3	Excellent
Media	3.7	Good
Project-based assessment rubrics	4.2	Excellent
Total	3.83	Good

The next test is a test for the properness of the substance which is carried out through FGDs with DUDIKA partners/local craftsmen. Table 5, as a whole shows that the substance of creative and entrepreneurial projects is following local wisdom products. In addition, the stages of production as stated in the formulation of core competencies and indicators are correct.

Table 5. The results of the substance test of the content of creative and entrepreneurial projects based on local wisdom products

Model Products	Average	Category
Learning achievement accuracy	5	Excellent
Accuracy of learning objectives	4	Good
Material coverage	3	Good
Depth of material	4	Good
The sequence of the material	3	Good
Image precision	4	Good
The usefulness of the material	4	Good
Total	3.85	Good

Table 6. Language accuracy test results of creative and entrepreneurial projects based on local wisdom products

Component	Average	Category
Readability	5	Excellent
Clarity of content and information	4	Good
Sentence structure	3	Good
Precision of language	4	Good
Easiness of language	3	Good
Punctuation accuracy	4	Good
Cohesion and coherence	4	Good
Size and fonts	4	Good
Spacing	4	Good
Image accuracy	4	Good
Total	3.9	Good

The final test is in terms of the accuracy of using the Indonesian Language as is described in Table 6, which shows that all model products (especially textbooks and learning guidebooks) have fulfilled the rules for using the correct Indonesian language. Some inputs that need to be corrected are related to sentence structure and easiness of use of language. The initial findings as described above have confirmed the results of previous studies (Najib et al., 2020) that entrepreneurship education that relies on social reconstruction is relevant to solving social problems. The main focus of this theory is solving social problems (McKernan, 2013), and has implications for the following things. First, the source material or content used comes from the potential that exists around the school environment and students as emphasized by the theory of Freire (1992) (in Harb & Thomure, 2020). Curriculum and learning experts, G.A. Beauchamp and W.F. Pinar, also agree about the urgency of content or material that is relevant to the needs of students (Melesse & Belay, 2022) so that from a learning psychology perspective, this can generate interest and motivation for students' learning (Wu & Chen, 2021). In this study, the content or material for the Creative and Entrepreneurship Project focuses on the

potential of local wisdom products as a source of material so that they contribute to solving social problems. This design is in line with the research finding of [Vogt \(2022\)](#) which recommends the importance of developing a curriculum in the field of social and economic studies that is based on social reconstruction to solve social problems, social change, and global challenges. The second implication lies in the learning process of Creative Projects and Entrepreneurship. The design of learning management is carried out interactively by actively involving students. This design is relevant to the opinions of other social reconstruction thinkers, such as Harold Hug who stated that the interaction between internal and external factors of learning and its relationship with the social environment of learning is important ([Sun et al., 2022](#)). The results of other studies also state that interaction is the main focus of social reconstruction learning ([Vlachopoulos & Makri, 2019](#)). Other studies also suggest that the application of social reconstruction-based learning that focuses on interactive, dialogic, and participatory learning enables students to achieve higher thinking skills ([Kim & Wilkinson, 2019](#); [Teo, 2019](#)). The application of habitual and dialogic, participatory, and interactive learning patterns has resulted in social regeneration and renewal of thought in society in the 21st century in England. Interaction in the learning process is not only carried out in the classroom but also outside the classroom. The interaction of the learning process outside the classroom is based on the idea that the potential that exists around the school environment and students is an environment-oriented learning resource so that the existence of the environment becomes a resource that can be utilized by educators and students. In other words, learning that takes place outside the classroom can open and provide opportunities for students to gain knowledge and skills through real-world involvement. In addition, boredom, and the perception of learning only in the classroom can be avoided.

The study's third key implication is the adoption of authentic assessment through project-based evaluation. This model, derived from the research findings, has the potential to revolutionize how we assess students' performance. Incorporating project assessment into the design model allows students, teachers, and partners from various work sectors to actively engage in the assessment process. This approach is underscored by ([Silva, 2019](#)), who highlights the significance of examining concrete evidence, such as students' actual performances and the products they create. The authentic assessment model prioritizes practical application, encouraging students to participate in real-world projects to demonstrate their understanding of the subject matter. This not only enhances their comprehension but also hones crucial skills relevant to professional settings, like creativity and critical thinking. Project-based assessment enables students to showcase their abilities, leading to a more holistic and comprehensive evaluation of their capabilities. The implementation of this assessment model is evident through the integration of project-based evaluation during presentations and self-assessments. Through presentations, students have the opportunity to communicate their ideas effectively and showcase their project outcomes, while self-evaluations promote autonomy and self-awareness by encouraging students to identify areas for improvement. Moreover, this approach benefits teachers by providing valuable insights into students' progress and enabling tailored instruction to meet individual learning needs. Engaging partners from work or industry sectors in the assessment process ensures greater relevance and alignment with real-world expectations, ultimately preparing students for their future careers. In conclusion, integrating authentic assessment through project-based evaluation offers a dynamic and comprehensive approach to evaluating students' performance, fostering practical application and critical thinking skills, and enhancing the overall learning experience for students and educators alike.

CONCLUSION

The implementation of learning Creative Projects and Entrepreneurship based on local wisdom products in VHS requires optimal improvement. The needs of students and the economic potential of local wisdom products as their substance need to be given more attention. The results find that the skills to produce local wisdom products, such as local specialties as the substance of Creative and Entrepreneurial Projects, require the use of a social reconstruction-oriented learning approach. Then, the developed model results in three main components, namely learning objectives, learning procedures, and assessment. From the design model, the products are in the form of core competencies formulations, modules, textbooks, learning guidebooks, media, learning process designs, and assessment tools. In addition, the module design of the revised model consists of three main aspects, namely general information (school identity, initial competencies, Pancasila Student Profiles, facilities and infrastructure, target students, learning materials), core competencies (goals, meaningful understanding, stimulus questions, learning process, assessment, remedial, and reflection), and attachments (student worksheets, references, glossary, and bibliography) to adapt to the Emancipated Learning Curriculum. Initial product test results through expert and practitioner validation tests show that the overall design and product model are in a good category. For the implication in the commencing year, the principals of VHS who implement the Emancipated Curriculum can adopt or adapt this initial model until the final testing process is carried out. Policymakers can disseminate this model by multiplying and facilitating schools to hold workshops/ education and training. For further product development, especially for other researchers, it is possible to use

this initial model as a basis for developing and expanding the model and or expanding the focus on the entrepreneurial aspect.

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