The Importance of Need Analysis for the Development of Co-PjBL Models on the Creative Products and Entrepreneurship Subject at the Vocational Level

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Abstract
This study aims to analyze the needs of the development of learning models, especially in the subject of Creative Products and Entrepreneurship. This research is based on the results of responses to questionnaires given to the respondents. The subjects in this study were students and teachers in the Department of Informatics of Software Engineering expertise program at the vocational high school level. The questionnaire instrument used in this study was tested for validity with the value of the student response is 0.883 and the validity value of the teacher response instrument is 0.892 which was declared valid and feasible to use. Based on the results of the distribution of the questionnaire, it was found that a gap between the conditions of reality and expectations desired by respondents. The conclusion that can be drawn from the results of the analysis of the needs of students and teachers is the need for the development of the Cooperative-Project Based Learning (Co-PjBL) model. The results of this analysis are the basis for continuing the process of research and development of the Co-PjBL learning model.

Keywords: Need Analysis, Cooperative-Project Based Learning, Learning Model, Entrepreneurship, Vocational High School

Introduction

Education is said to be able to educate the nation if it has high quality at all levels of education. The problem that is happening right now is the low quality at every level and education unit, including what is happening now in vocational high schools (SMK). There are several factors that cause the low quality of education in Indonesia, including: the lack of facilities and infrastructure that support the learning process, the lack of quality teaching staff, the low level of teacher welfare, the lack of student achievement, the lack of equal education, the relevance of education to the needs of the business world that is still low, and high education costs (Aminullah, 2014). Other research shows that there are 3 determinants of educational success, namely (1) input factors, students who process in learning, (2) environmental factors, everything outside of learning or school, (3) instrumental input factors, such as learning objectives, learning curriculum , and learning media to students (Soedijarto, 2008).

The impact received from the low quality of education makes it difficult for high school graduates to find suitable jobs and it even makenthem becom unemployed. Many SMK graduates now do not get the feasible jobs because of the incompatibility of their competencies and skills with the needs of the business world and the industrial world (Sugiyanto, 2014). The large unemployment rate of SMK graduates is also influenced by the varied quality of graduates so that not all of them have adequate skills, expertise and insight (Khurniawan et al., 2019).

In general there are four alternative choices for students when they finish their vocational high school level, including: continuing education to college, taking courses or training, entering the world of work / industry, and having a family. Orientation of students after graduating from SMK generally wants to get a job and not be an entrepreneur. There are several social contexts that affect a person's future orientation, including: the role of gender, middle and lower economic groups and the environment or community where someone lives (Nurmi, 1991). Interest in entrepreneurship not only arises from birth but can be formed through education and training, for that the role of schools is very high in shaping the entrepreneurial character of vocational students.

To increase students' interest in entrepreneurship, it is necessary to develop a learning model especially in the subject of creative and entrepreneurial products so that the entrepreneurial spirit is inherent in students. This is in line with (Presidential Instruction of the Republic of Indonesia No. 9, 2016) which explains in detail the duties and authorities of each ministry to revitalize Vocational High Schools (SMK) to prepare graduates ready for work, entrepreneurship and independence. Other research shows that entrepreneurship education has a positive influence on students' interest in entrepreneurship (Rifai & Sucihatiningsih, 2016).

Literature Review
The Government through (Presidential Instruction of the Republic of Indonesia No.4, 1995) on the National Movement to Promote and Realize Entrepreneurship states the need to build an entrepreneurial spirit and increase the quantity of entrepreneurs. The government wants the entrepreneurial character to be an integral part of the work ethic of the Indonesian people so as to create reliable, strong and independent new entrepreneurs.

Entrepreneurship education can be defined as the process of applying professional knowledge, attitudes, skills and competencies. This education is not just teaching students to have independent businesses but also about creating and maintaining a learning environment that shows the nature and behavior of entrepreneurs, such as being creative and independent thinkers, risk takers, taking responsibility, and valuing diversity (Gautam & Singh, 2015) . To achieve learning objectives in entrepreneurship education, students need to actively participate in the learning process so that they are able to apply the characteristics of entrepreneurship that they have so that they can increase attitudes and interests in entrepreneurship (Jodhy et al., 2016).

There are several parties who are directly and indirectly responsible for the success of entrepreneurship education (Wijaya, 2017), namely: family (informal education), the school (formal education) and the community (non-formal education). In fact, schools try to implement entrepreneurial values to students by doing the following:

1. Fix the curriculum. Done by absorbing entrepreneurial values through curriculum material that has been revised and realized in the syllabus design and lesson plans.
2. Enhancing the role of schools in graduating young entrepreneurs. Educators should integrate creative values, full of innovation and courage to take risks in each learning process. Thus students will be created strong, dynamic, creative, never give up and intelligent.
3. Fixing and organizing the learning process. Revise and evaluate the organization of the learning process that can give students the opportunity to actively learn from their life experiences or even run a learning system based on a production unit.
4. Fixing the process of grouping students. Personal relationships between students have a role in student learning outcomes. The emotional atmosphere that occurs in the classroom is able to influence student attitudes and behavior. For this reason, educators are expected to be able to form the discussion groups in each class with a variety of characters in each group.
5. Fixing the teaching staff. Entrepreneurship training for educators is considered very important. In addition, teacher experience in the field of managing a business is also needed in order to be able to train skilled students according to their talents and interests. Educators must also be able to inspire students to grow high entrepreneurial spirit.

This research will focus on improving and organizing the learning process with the Co-PjBL model. The Co-PjBL learning model is a learning model developed based on an interactive learning model that is student-centered and in accordance with the national curriculum currently used in vocational high schools. The importance of work skills for students (Hendriyani,at al, 2020; Hendriyani, & Amrizal, 2019; Rukun at al., 2015; Bandri, at al, 2020) This competency-based learning model is a result of the merging of several existing learning models such as student-centered learning models, cooperative learning models, project based learning models and e-learning models. The Co-PjBL model is considered effective for improving students' abilities in terms of cognitive because it is able to direct students to develop the

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knowledge they have independently by cooperating with each other (Jalinus et al., 2018; Lubis at al, 2019).

The Co-PjBL model is intended to provide learning outcomes and impacts where students have skills and abilities in entrepreneurship without leaving the identity of their expertise. The process of designing a Co-PjBL learning model requires precise theoretical rational and is explained in detail by the developer of the model. The theory compiled must be logical and capable of being accounted for and supported by appropriate supporting theories. The Co-PjBL model has also been studied previously which shows that the implementation of cooperative-project based learning strategies can improve student learning outcomes motivation compared to conventional learning methods (Tafakur & Suyanto, 2015).

Methodology
The approach used in this study is a quantitative approach. This research was conducted at the Department of Informatics with a Software Engineering expertise program. There are 3 types of techniques used for data collection, namely: (1) questionnaire distribution, (2) interviews and (3) observation. The three instruments before they were given to respondents were validated first. The data was then analyzed to determine the curriculum used today, how students respond to the learning material delivered and the learning process carried out by the teacher. The data on the questionnaire showed the level of expectation and reality felt by students and teachers towards the learning that is carried out now. The difference in gap between the conditions of expectation and this reality is the basis for developing the Co-PjBL learning model**.**

Instruments Validity
Validators who tested this instrument have 5 people who were stated in V1 through V5, while for questions items stated in nominal terms 1 to 12. Validation sheets for the needs analysis instrument can be seen in the appendix. Data were then analyzed using Aiken's V approach with 4 assessment criteria and 12 question points. Research shows that the average value of Aiken's V for all questions is 0.883 and is declared valid. The validation test results of the analysis instruments needs to develop learning models of student responses can be seen in Table 1 below.

Table 1. The Results of the Validation of the Analysis Instruments Need Students' Responses

Assessed Criteria	Item Number	∑s	Aiken's V	Information
Concept Feasibility	1.	19	0,950	Valid
Content Eligibility	2.	15	0,750	Valid
	3.	18	0,900	Valid
	4.	18	0,900	Valid
Construction	5.	17	0,850	Valid
	6.	18	0,900	Valid
	7.	17	0,850	Valid
Language	8.	19	0,950	Valid
	9.	17	0,850	Valid
	10.	16	0,800	Valid
	11.	20	1,000	Valid
	12.	18	0,900	Valid
The Average Value of Aiken V			0,883	**Valid**

The next validation is an instrument of needs analysis with responses from the teacher. Validators who tested this instrument have 5 people who were stated in V1 through V5, while for questions items stated

in nominal terms 1 to 12. Validation sheets for the needs analysis instrument can be seen in the appendix. Data were then analyzed using Aiken's V approach with 4 assessment criteria and 12 question points. Research shows that the average value of Aiken's V for all questions is 0.892 and is declared valid. The validation test results of the analysis instruments needs to develop learning models of teacher responses can be seen in Table 2 below.

Table 2. The Results of the Validation of the Teachers' Response Needs Analysis Instrument

Assessed Criteria	Item Number	∑s	Aiken's V	Information
Concept Feasibility	1.	18	0,900	Valid
Content Eligibility	2.	18	0,900	Valid
	3.	19	0,950	Valid
	4.	19	0,950	Valid
Construction	5.	18	0,900	Valid
	6.	16	0,800	Valid
	7.	18	0,900	Valid
Language	8.	19	0,950	Valid
	9.	18	0,900	Valid
	10.	17	0,850	Valid
	11.	17	0,850	Valid
	12.	17	0,850	Valid
The Average Value of Aiken V			0,892	**Valid**

Results and Discussion

In general, the description of students' needs for the development of the Co-PjBL model based on the results of the distribution of needs analysis questionnaires is as follows:

1. Student perception

Students currently feel quite enthusiastic in following the Creative Products and Entrepreneurship lessons in class but some also said they were not enthusiastic. The method applied by the teacher is also still considered less attractive so some expect positive changes. Some students expressed difficulty in learning the Creative Products and Entrepreneurship due to unclear material presented. Students feel that if the Creative Products and Entrepreneurship material is delivered in a form other than lectures such as videos, PowerPoint slides, and pictures they will likely feel much more interested in learning. The results of the questionnaire from students' perceptions are shown in Figure 1 below.
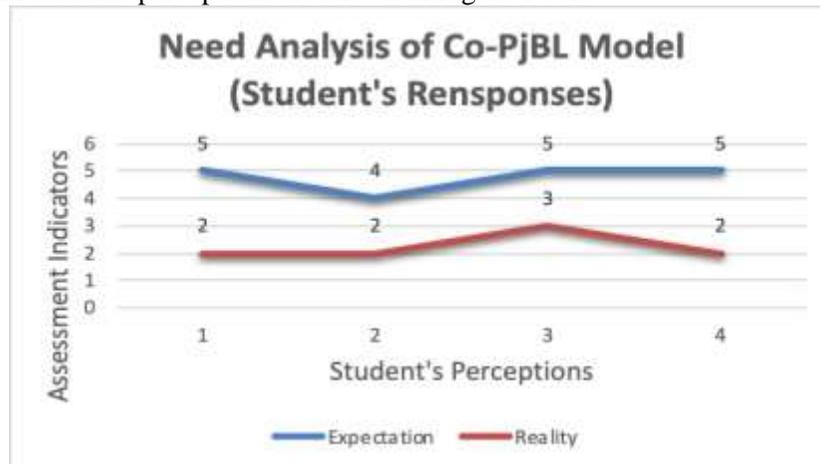

Figure 1 Results of Co-PjBL Model Needs Analysis Based on Students' Perceptions

2. Learning experience on Creative Products and Entrepreneurship
Some students said that the teacher had given LKPD even though it was not interesting in form, but some stated that the LKPD was not yet available. The teacher only uses PowerPoint a few times and the rest prioritizes the lecture and question and answer system. Computers are available for students in the laboratory but are not functioning properly so students still have to bring a personal laptop with very limited internet access. The current method is quite helpful although not entirely because this monotonous nature of learning also makes students tired and sleepy. This is in line with previous research which shows that students like learning that uses interactive multimedia that is supported by optimal use of technology (Lanos & Letari, 2019). The importance of the use of technology in vocational education. (Verawadina, at al, 2020; Feladi at al., 2020; Asnur at al., 2020)
The results of the questionnaire seen from the experience of students learning are shown in Figure 2 below.
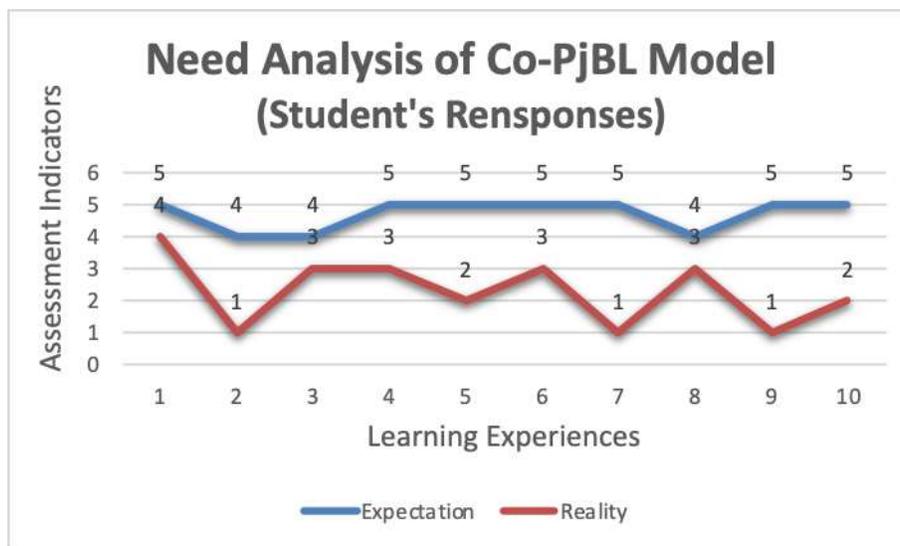

Figure 2 Results of Co-PjBL Model Requirement Analysis Based on Learning Experience

3. Need for developing Co-PjBL models
Students generally stated the need for a special learning model for PKK as offered by the Co-PjBL model. Students also expect an interesting LKPD so that students can repeat lessons through practice questions. Students also expect other interactive learning media besides material that is delivered by the teacher. Students also agree if they are required to work in a group to make a project with priority to independence. The results of the questionnaire from students' needs for developing learning models are shown in Figure 3 below.
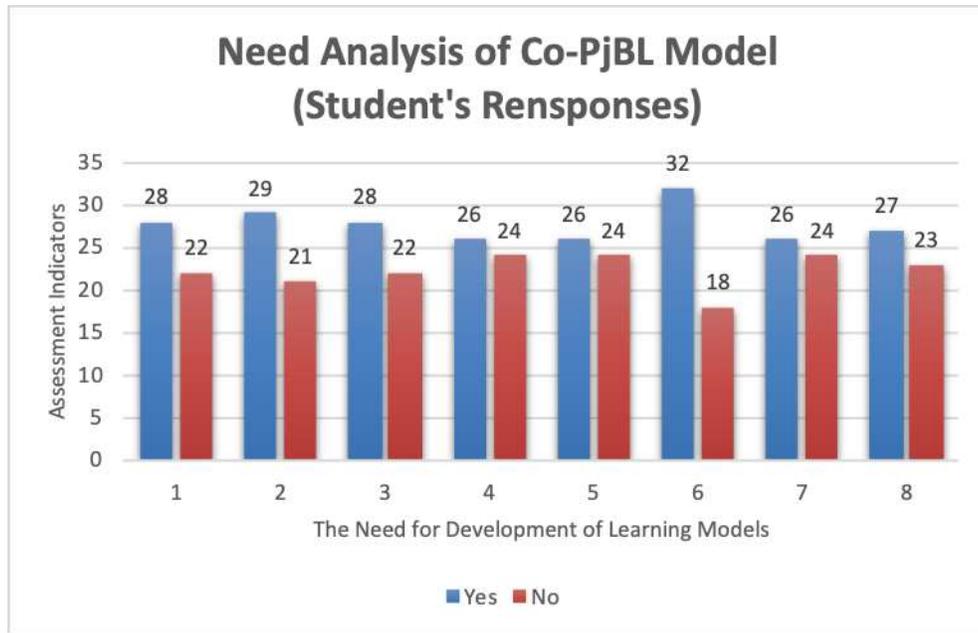
Figure 3 Results of Co-PjBL Model Needs Analysis Based on the Need for Developing Student Response Learning Models

Educators cannot be separated from the scope of this research because it plays an important role in the optimal learning process. Previous research shows that teachers have an important role to educate students to be interested in becoming entrepreneurs; this can be done if the teacher is able to become a reliable facilitator and motivator in learning entrepreneurship (Perwita, 2017). For this reason, an analysis of teacher needs is needed for the development of models by examining current teacher performance and aspects of teaching. The following will explain the results of the needs analysis from the teacher's perspective as seen from several indicators.

1. Teacher's perception

The teacher currently feels that he is still enthusiastic in giving PKK learning as the task he has been carrying out so far. The teacher also feels that the current method is quite interesting and is conveyed through several media. The teacher did not feel any difficulties during the PKK learning process. Questionnaire results from teacher perceptions are shown in Figure 4 below.
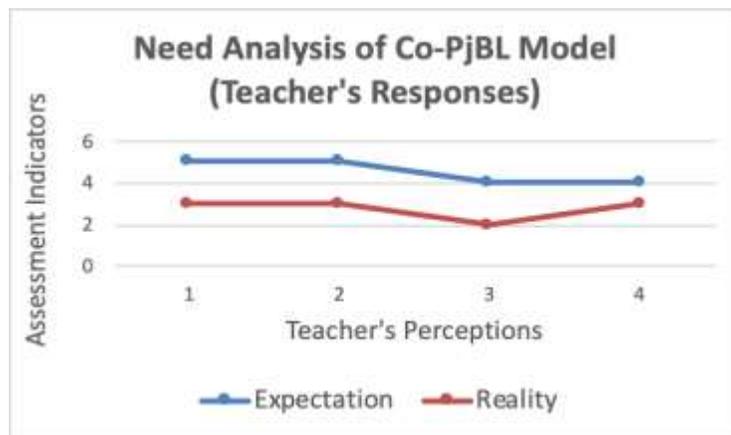

Figure 4 Results of Co-PjBL Model Needs Analysis Based on Teacher Perception

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2. Learning experience on Creative Products and Entrepreneurship

For LKPD the teachers acknowledged that they had given it to the students but because it was not attractive enough so it was not resumed. For PowerPoint media, the teachers have done it before, although it was realized that it was not too interesting for students to see. For laptop facilities and internet connections for teachers, they are available and free to use it responsibly. The teacher realizes that the current method is still limited to lectures, questions and answers, and practicum. There is no training for the use of interactive learning media which is an obstacle for teachers to make updates in the learning process of Creative Products and Entrepreneurship in schools yet. To reduce student boredom in the classroom, teachers often ask students to do practical work or presentations in front of the class. According to the teacher, there are still many student learning outcomes that do not meet the score of Minimum Master Criterion which causes the holding of a remedial. Some shortcomings of the teacher centered learning system are also revealed by previous studies where students generally want the teacher as a feeder by positioning students as active learners (Surbakti, 2015). The results of the questionnaire seen from the teaching teacher's experience are shown in Figure 5 below.
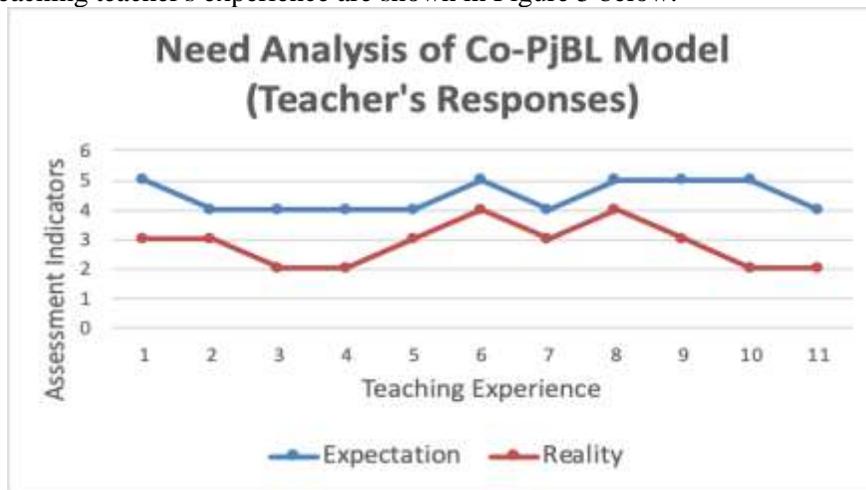

Figure 5 Results of Co-PjBL Teacher Response Need Analysis Results Based on Learning Experience

3. Need for developing Co-PjBL models

The teachers expect special learning models and media such as Co-PjBL that can help them deliver learning to be more interesting. The teachers also expect the creation of LKPD that is in accordance with the characteristics of vocational students with an attractive appearance. The teacher also agrees with the nature of student-centered learning that requires students to be independent, creative, and able to work in teams to create a work project. The teacher also strongly approves the use of Google Classroom to facilitate the distribution of information and assignments and is believed to be able to improve student learning outcomes. The results of the questionnaire from the teacher's need for the development of the learning model are shown in Figure 6 below.
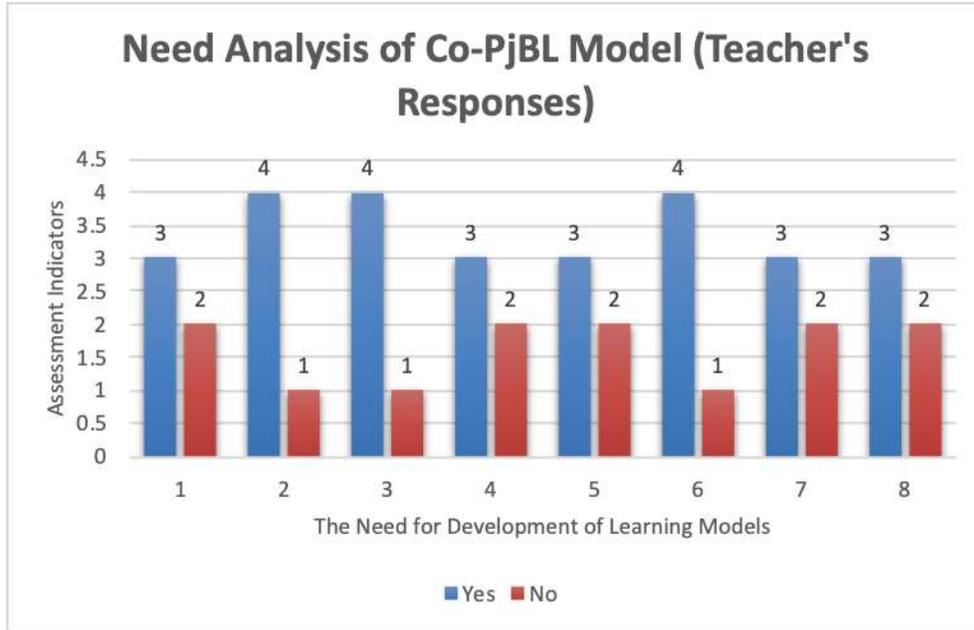
Figure 6 Results of Co-PjBL Model Needs Analysis Based on the Need for Development of Teacher Response Learning Models

The results of the distribution of questionnaires to educators and students above show that the methods currently used are not relevant to the learning objectives, the learning environment is not conducive, and the optimal use of technology and the characteristics of students themselves are different compared to students in public schools.

Conclusion

The instrument in the form of a questionnaire has been tested for validity and this is in line with previous studies where the coefficient value > 0.80 was declared appropriate for use both in terms of construction, language and aspects (Ramadani et al., 2017). The conclusion that can be drawn from the results of students' needs analysis is that the students really need the development of Cooperative-Project Based Learning (Co-PjBL) models based on these competency skills. The results of the analysis based on facts and data in the field indicate a high level of importance to conduct research and development in order to obtain a Co-PjBL model design that can be tested as well. From the analysis of teacher needs, it can be seen that the teachers really need the development of Cooperative-Project Based Learning (Co-PjBL) models. The results of this analysis are the basis for continuing the process of research and development of the Co-PjBL learning model.

Recommendations

1. It is necessary to formulate a learning syntax that is tailored to the characteristics of Vocational High School students, especially in the Department of Informatics with the field of Software Engineering expertise in Learning Creative Products and Entrepreneurship.
2. It is necessary to design several supporting products that are able to optimize the implementation of Cooperative Project Based Learning models, especially in the industrial era 4.0.
3. Some elements of the learning model also need to be formulated, among others, the social system, the principle of reaction, the instructional impact and accompaniment of the developed learning model in order to synergize properly.

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