VALIDITY AND PRACTICALITY OF THE EMKONTAN LEARNING MODEL TO IMPROVE CREATIVE THINKING, COLLABORATIVE AND LITERACY ENVIRONMENT OF PROSPECTIVE BIOLOGY TEACHER STUDENTS

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Abstract: The purpose of this study was to analyze the validity and practicality of the EMKONTAN model to increase creativity, collaborative skills and environmental literacy of prospective biology teachers. The method used is descriptive research through observation of the implementation of the EMKONTAN model in learning practice. Observation of the implementation was carried out by involving five learning observers. This research was conducted in the even semester of the 2020/2021 academic year at IKIP Budi Utomo Malang and FKIP University of Muhammadiyah Malang. Involving 80 second semester students through total sampling.

The validity aspects studied include content validity, face validity and construct validity. Content validity includes needs analysis and conformity with current knowledge. Face validity consists of the correctness of concepts, principles of measurement, instrument format and language. Construct validity includes rationality of the models, theoretical and empirical support, planning and implementation components of the model, learning environment, assessment and evaluation. While the practicality of the model is obtained from the results of observing the implementation of learning through the application of the EMKONTAN syntax which includes socialization and observation of environmental problems, identification and analysis of environmental problems, action plans for solving environmental problems and integration into conservation, actions for solving environmental problems and integration of conservation, monitoring and evaluating processes and the results of the conservation, monitoring and evaluating processes and the results of the action to solve environmental problems and the integration of KSDA, follow-up plans into PKM based on environmental problems and KSDA.

The results of the validity of the EMKONTAN model indicate that the model has content, construct, and facial validity with an average value of <3.7 in the very good category that meet the feasibility to be applied in the learning process. In addition, the results of the practicality of the EMKONTAN model include the implementation of each syntax with an average value of <3.6 in the very good category, student activities with an average value of <85% in the very active category, and the obstacles found, namely the existence of an appropriate alternative solution.

Keywords: EMKONTAN model, validity, practicality, creativity, collaborative skills, environmental literacy

PRELIMINARY

Environmental education and learning become the main focus of solutions to environmental problems that are increasingly worrying, because the causes of environmental degradation are mostly human behavior. Human behavior can be directed and modified through education. Environmental education is expected to be able to change human behavior to be friendly to the environment. Environmentally friendly behavior can reduce the risk of environmental problems. Environmental problems are increasingly complex and worrying, requiring environmental science learning at all levels and types of education to be able to foster environmentally responsible behavior (Garcia, 2017).

Understanding environmental issues is important for prospective teachers to be able to teach environmental problems, foster an attitude of caring for the environment, and strengthen environmental care behavior properly and correctly. Unfortunately, students' awareness of the environment is still relatively low, even understanding of environmental problems still needs to be improved. For this reason, innovative learning is needed that can improve creative thinking skills, collaborative skills and environmental literacy. Creative thinking skills, collaborative skills and environmental literacy are very much needed to solve environmental problems as mandated by ESD as well as part of the demands of 21st century life skills.

Facing increasingly complex, complicated and global environmental problems, environmental science learning needs to adapt to the dynamics of these challenges. Therefore, environmental learning should be emphasized more on a problem solving approach (Syulasmi, 2015). This approach encourages students to find problems, examine problems, propose hypotheses, collect data, prove hypotheses and determine problem solving options (Chotimah and Fathurrohman, 2018). Important components in environmental learning through the EMKONTAN model are through the stages of socialization and observation, identification and analysis of environmental problems, preparation of action plans, implementation of actions to solve environmental problems, monitoring and evaluation, and follow-up plans. Furthermore, environmental science learning through EMKONTAN is aimed at the following: (1) Students become careful in observing, identifying and analyzing environmental problems; (2) Students become creative in solving environmental problems and integrating them into KSDA; (3) Students become skilled in collaborating to solve environmental problems; (4) Students become increasingly literate in their environment

The application of environmental science learning will be successful if it is supported by a learning model that provides opportunities for students to observe, identify and analyze environmental problems, plan actions to solve environmental problems, as well as integrate with natural resource conservation (KSDA), conduct monev and develop follow-up plans. The learning model plays an important role in the learning process because it is able to describe systematic procedures in regulating student learning experiences to achieve learning objectives (Baumfalk et al., 2019; Wehmeyer et al., 2012). The selection of learning models requires consideration of the student's character and the material being taught in order to provide a greater chance of success. The role of the lecturer as a facilitator is very important to encourage student-centered learning (Hines et al., 2019).

EMKONTAN is a student-centered learning model (students active learning), oriented to creative learning (creative learning), problem solving (problem based

learning), collaborative learning (collaborative learning) and providing opportunities for students to improve their environmental literacy. The EMKONTAN learning model has steps (syntax) consisting of step 1. Socialization and observation of environmental problems, step 2. Identification and analysis of environmental problems, step 3 action plans to address environmental problems, step 4 implementing actions to solve environmental problems and integrating them into natural resource conservation , the 5th step is monitoring and evaluating the resolution of environmental problems and integration into natural resource conservation, the 6th step is the follow-up plan

Environmental science is a compulsory subject in the department of biology education. The learning outcomes of environmental science courses are: a. Explain the meaning and role of environmental science in life; b. Explain the meaning of environmental insight and identify environmental problems c. Analyze population dynamics and solutions to population density problems d. Explain ecology as the basis of environmental science and apply the principles of environmental science e. Identifying National and Local Natural Resources, f. Explain the management of forest resources, clean water resources, coastal and marine resources, and mineral and energy resources. g. Analyzing soil, water and air pollution, h. Explaining waste management based on 6M and integrated waste management, i. Understand the laws and regulations governing environmental problems [16]. Environmental science courses are multidisciplinary subjects that are closely related to everyday life (17). Some environmentally unfriendly behaviors in the community are closely related to the understanding and concepts of environmental science, for example cleanliness ranging from the household environment, schools, markets, public facilities as a result of littering. The increase in electronic waste due to the massive use of cellphones and computers contributes to environmental problems [18].

Environmental science if taught with the right model (as EMKONTAN) can be a means of developing 21st century skills [19]. 21st century skills and environmental literacy are important for biology graduates to compete in a global and sustainable world like the SDGs. 21st century skills are organized into 4 categories as follows, (1) ways of thinking: creativity and innovation, critical thinking, problem solving, decision making, and learning to learn, (2) ways of working: Communicating and working together, (3) tools to work: general knowledge and skills of information and communication technology, (4) way to live: career, personal and social responsibilities including cultural awareness and competence [20]. The problem faced in learning environmental science is combining environmental science content with 21st century skills (critical thinking, creative, collaborative and communicative) and SDGs [21].

The character of students who think creatively is characterized by their ability to create new ideas and products that can be useful in their lives. The category of student creativity varies depending on the experience and knowledge they have (Roy, 2016). Creative thinking ability is the ability to present diverse, different, original ideas through various ways [25]. Creative thinking is related to the existence of novelty, the ability to create something that does not yet exist, apply new forms, produce many imaginative forms or or make something that already exists into something new [26]. Creative thinking skills are the ability to see things in new and original ways, the skills to learn from experience and relate to new situations, the ability to think in unconventional and unique ways, the ability to use traditional approaches to solve problems, and skills for something unique and original [27].

Creative thinking can be interpreted as a whole in a series of cognitive activities used by individuals in using their minds to generate new ideas, new things, new findings, and innovations in providing new services to society [28].

Collaboration to do problem solving is one of the 21st century skills or 4Cs that are essential for successful learning and increased productivity in real work environments in the 21st century [29]. Collaboration as a partnership relationship that depends on each other. Problem solving collaboration skills are one of the keys to education in achieving a very effective learning process [30]. Probe solving collaboration is one type of social interaction in a specific learning process where each group member can be active and constructive in solving all existing problems [31]. Collaborative components include, effective communication skills, mutual respect, trust, giving and receiving feedback, decision making, and conflict management [32].

Literacy describes a person's ability to identify, understand, interpret, create, communicate, and use knowledge in various contexts (37). When the context studied is the environment, the competence becomes environmental literacy. This context is an important component in literacy and is a major issue in research in developed countries. One of the focuses studied is addressing environmental problems through educational programs, including at the university level (38). Therefore, instilling and evaluating students' environmental literacy skills is an important part in the implementation of environmental education (39).

Validity is a measure that shows the level of validity or validity of something. Rochmad (2012) argues that, "a development result (product) is said to be valid if the product is based on adequate theory (content validity) and all components of the learning product are consistent with each other (construct validity). Meanwhile, Sumarna (2005) states, the validity of teaching materials is determined to determine the quality of teaching materials in relation to measuring what should be measured.

According to Nieveen, the validity aspect can be seen from: (1) whether the curriculum or learning model developed is based on state-of-the-art knowledge; and (2) whether the various components of the learning tool are consistently linked to one another. Based on this explanation, it can be concluded that a product is said to be valid if the product is in accordance with the curriculum and has a relationship with each other. So, the validity test means testing a product that is in accordance with applicable regulations.

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According to Midleton (2019), reliability is a measure that shows the level of constancy when a study is carried out under the same conditions. A product needs to get an assessment of its reliability in order to ensure that the product does not change when applied in different places but under the same conditions. Aspects of reliability assessed on EMKONTAN products include stability reliability, represented reliability and equity reliability.

According to the KBBI (2008), practicality means being practical, meaning that it is easy and easy to use. Practicality referred to here is practicality in the field of education (models, syllabus, lesson plans, teaching materials, assessments, worksheets and other products). Practicality is related to the implementation and benefits obtained by students by using models, teaching materials, worksheets, instruments or other

products. Practicality is the level of usability and implementation of the learning model by students and lecturers using the intended learning model. The learning model has high practicability, if it is practical and easy to administer.

RESEARCH METHOD

This type of research is descriptive quantitative research. Data collection was carried out by using observation techniques and filling out questionnaires. This research was conducted in the Even Semester of the 2020/2021 Academic Year at IKIP Budi Utomo Malang and University of Muhammadiyah Malang on 5 lecturers as validators and 40 second semester students. The research sampling technique is saturated sample, meaning that all of them become samples. The instrument used to test the validity and reliability of the EMKONTAN model is a validation sheet while for the practicality test a learning observation sheet is used. Specifically, the type of research instrument to test the validity of the EMKOTAN model is an expert validation sheet for learning materials and content and users. In addition, the practical instrument of the EMKONTAN model is an observation sheet that focuses on the implementation of learning, relevant student activities, and the obstacles found in the use of the EMKONTAN model during the learning process.

The data analysis technique for the validity of the EMKONTAN model uses an average score with the following categories: very valid (80.26% <x 100%), valid (62.6% <x 80.25%), less valid (43.76% <x 62.5%), and invalid (25% <x 43.75%) (Aryadoust & Raquel, 2019). Practicality is the level of usability or ease of teaching materials to be used by students. Practical aspects that are measured are aspects of ease or implementation of use and aspects of usefulness. The ease of use aspect includes ease of understanding the material and language used in the model. While the usability aspect on the model display. The learning model is said to be practical if the results of the practicality assessment have reached the Good category in accordance with the established criteria.

The practical data analysis technique of the EMKONTAN model is the implementation of learning based on the observations of five observers of the model syntax which includes: socialization and observation, identification and problem analysis, problem solving action plans, problem solving actions, monitoring and evaluation and follow-up plans. Next is the implementation category. learning consists of: 3.6 Very Good < 4.0; 2.6 good < 3.5; 1.6 bad < 2.5; and 1.0 very bad < 1.5 (Mustami et al., 2019). Meanwhile, data regarding relevant student activities were analyzed based on the frequency of activities that appeared for 5 minutes each, so that the average score of student activities could be determined which included reading teaching materials, understanding information, making observations, identifying and analyzing problems, making action plans, carry out actions, monitor and develop follow-up plans in the form of PKM. The categories indicated by the average value of student activity are as follows: 85% very active <100%; 70% active < 85%;

RESEARCH RESULT

Analysis of data from the EMKONTAN MODEL validity questionnaire by lecturers was based on three components, namely face validity, content validity and construct validity. For the face validity consists of 9 aspects of the question, content validity consists of 5 questions and construct validity consists of 8 questions. For practicality assessment is based on aspects of implementation and usefulness. The implementation aspect consists of 20 questions, while for the benefit it consists of 11

questions. The results of data analysis show that the EMKONTAN MODEL based on a problem based, student center, project based approach has an average validity value of 0.85 with a very valid category. While the results of the analysis of the practicality of EMKONTAN have an average practicality of 0.87% with a very practical category.

Face Validity

The advance validity of the EMKONTAN model is assessed based on 9 related questions, namely (1) whether the model contains systematic stages, whether the model has logically arranged stages, (2) whether the model is equipped with complete learning tools, (3) whether the model is supported by a social system that applies in the campus environment, (4) does the model encourage action and interaction between subjects, objects and the environment (learning resources), (5) is the model supported by a theoretical framework in the form of problem-based learning, especially environmental problems, (6) is the model supported by a theoretical framework in the form of case-based learning, (7) is the model supported by a theoretical framework in the form of student-centered learning, (8) is the model supported by a theoretical framework in the form of project-based learning (Project Based) and (9) whether the model translates and develops curriculum documents that apply in aspects of SKL, SI , SP and SE.

Against the nine indicators that assess the validity of the face of the EMKONTAN model, the validator gives an average of 3.7; 3,6; 3.8; 3.7; 3.8, 3.6. 3.5. 3.8; 3.7 and 3.8. Overall, the average value of advance validity is at 3.7, which means it is very good. Thus the EMKONTAN model has an established theoretical basis, has logical and systematic stages of the learning process, the model is a form of development and interpretation of the applicable curriculum so that the model has been equipped with applicable learning tools (syllabus, lesson plans, teaching materials, media and resources). learning, methods and evaluation). Besides that, there has also been integration between graduate competency standards, content standards, process standards and evaluation standards.

Construct Validity

The construct validity of the EMKONTAN model is assessed based on 8 related questions, namely (1) Environmental and KSDA problems that will be resolved through EMKONTAN are very relevant to problems faced by local, national, regional and international communities, (2) Projects developed in EMKONTAN provide appropriate solutions in solving environmental and KSDA problems (3) EMKONTAN Conceptual Framework builds students' knowledge, attitudes and skills in solving environmental problems, (4) EMKONTAN Conceptual Framework builds student creativity in solving environmental and KSDA problems, (5) EMKONTAN Conceptual Framework builds student collaborative skills in solve environmental problems and KSDA, (6) the EMKONTAN Concept Framework builds students' environmental literacy in solving environmental problems, (7) the EMKONTAN Concept Framework builds students' communicative skills in solving environmental problems and (8) the EMKONTAN Conceptual Framework builds students' critical thinking skills in solving environmental problems.

Of the eight tests that assess the validity of the contents of the EMKONTAN model, the validator gives an average of 3.7; 3,6; 3.8; 3.7; 3.8, 3.7. 3.5. and 3.8. Overall, the average value of advance validity is at 3.7, which means very good. Thus the EKONTAN model has requirements in terms of content validity. The fulfillment

of this content validity requirement is based on the EMKONTAN component which contains a conceptual framework to improve students' knowledge, attitudes and skills in studying environmental issues and natural resource conservation. The EMKONTAN component also pays attention to and accommodates environmental problems that occur on a local, national, regional and international scale. EMKONTAN construction is directed to study and solve environmental problems and integrate into natural resource conservation creatively, collaboratively and responsively.

Content Validity

The assessment of the validity of the content (content) shows that EMKONTAN has met the accuracy in five aspects of content validity which include: (1) The model contains material on environmental issues, (2) the model contains material for natural resource conservation, (3) the model contains methods or how to study environmental problems, (4) the model contains methods or ways to study environmental and natural resource conservation, and (5) the model contains methods or ways to integrate solving environmental problems with natural resource conservation.

Of the 5 indicators that assess the validity of the contents of the EMKONTAN model, the five validators give an average of 3.7; 3,6; 3.8; 3.7; and 3.7. Overall, the average value of practicality in the aspect of expediency is at 3.65, which means very good. Thus, the EMKONTAN model has fulfilled the content validity requirements. The fulfillment of this content validity requirement is supported by the contents of the EMKONTAN model in accordance with learning outcomes (CPMK), supporting materials (basic competencies), learning processes, media, learning resources and evaluations determined by environmental science courses at IBU and possibly at other universities.

Reliability

To meet the reliability value, the EMKONTAN model is described in 3 aspects of the assessment, namely stability reliability, represented reliability and equity reliability. On the reliability and stability of the assessment points, the focus is on the consistency of the EMKONTAN process or procedure for students from various study programs (not only prospective biology teacher students), various faculties (not only from FKIP) and from various institutions (not only for LPTKs). The same thing also happened to the implementation of EMKONTAN for various target groups, it had procedural reliability, namely there was consistency without modifying its components or stages when applied to different batches or semesters.

EMKONTAN's equity reliability shows that the learning procedure or process can be directed to achieve learning indicators covering aspects of knowledge, attitudes and skills (KAP). The equity of the EMKONTAN model leads to the achievement of consistency in learning outcomes, learning materials, learning processes and evaluation of learning outcomes in the three domains (KAP).

The 5 validators gave very good scores on stability reliability, represented reliability and equity reliability with an average of 3.7. Therefore, the EMKONTAN procedure applies to various kinds of inputs, applies to various domains (KAP) of learning achievement and also applies to various basic competencies in environmental science courses.

PRACTICALITY

Implementation of the EMKONTAN Model

A total of 40 students and 5 lecturers of the Environmental Science Court have assessed the implementation of the EMKONTAN model in class implementation and field activities. The implementation assessment is based on 20 question items which include (1) whether the EMKONTAN model is equipped with identity information and learning objectives, (2) whether the EMKONTAN model is equipped with instructions for carrying out the activity steps, (3) whether the EMKONTAN steps can be carried out easily (4) are the EMKONTAN steps simple enough, (5) are the sentences used in the EMKONTAN activity instructions very operational, (6) are the EMKONTAN steps not confusing, (7) are the EMKONTAN steps very interesting, (8) are the EMKONTAN steps very interesting? EMKONTAN challenges students to implement them, (9) do EMKONTAN steps challenge students to understand environmental problems, (10) do EMKONTAN steps challenge students to solve environmental problems, (11) do EMKONTAN steps challenge students to integrate solving environmental problems with KSDA , (12) whether EMKONTAN steps challenge students to think creatively, (13) do EMKONTAN steps challenge students to be skilled in collaboration, (14) do EMKONTAN steps challenge students to be environmentally responsible (environmental literacy), (15) do EMKONTAN steps challenge students to think critically, (16) whether EMKONTAN steps challenge students to be skilled in communication, (17) whether the time used to do EMKONTAN assignments is sufficient, (18) whether students can carry out a series of EMKONTAN activities completely within the available time, (19) does following EMKONTAN's work instructions provide an opportunity to produce rational products or projects, (20) does the project produced by EMKONTAN benefit multiplayer effects (environmental problem solving**,** KSDA, PKM**)**

Of the twenty indicators that assess the practicality of the implementation aspect of the EMKONTAN model, the five validators gave an average of 3.7; 3,6; 3.8; 3.7; 3.8; 3.6; 3.5; 3.8; 3.7; 3.7; 3.9, 3.8;3,7;3,6; 3.9; 3.8; 3.8; 3.7; 3.8 and 3.8. Overall, the average practicality value in the implementation aspect is 3.7, meaning very good. Thus, the EKONTAN model already has a feasible predicate. This implementation is supported by operational or practical model components, such as the availability of instructions for carrying out logical and systematic activities, the model has been equipped with applicable learning tools (syllabus, lesson plans, teaching materials, media and learning resources, methods and evaluations). Besides that, carrying out learning with the EMKONTAN model can be completed in a timely manner according to the available schedule and with the simple equipment needed.

Besides being able to be carried out in accordance with the support of materials and tools as well as available time, by applying EMKONTAN, according to the validator the benefits that can be obtained include students getting challenges to think creatively, work together to build collaborative skills and seek to improve environmental literacy, all of which are important aspects to complete environmental problems. Another challenge that can be obtained by applying the EMKONTAN learning model is that students can produce products in the form of student creativity (PKM) which are in the national program category, Lectures with the EMKONTAN model in the treatment class have produced 8 PKM titles in the community service scheme and written ideas (PKMM and PKMGT). Thus, the implementation of EMKONTAN provides multiple benefits, solves environmental problems, integrates it into natural resource conservation and simultaneously produces student scientific work.

Benefits of the EMKONTAN Model

In the aspect of the usefulness of this model, there are 11 points that are of concern and assessment by the validator. The 11 aspects are (1) Applying the EMKONTAN model provides benefits in increasing understanding of environmental problems, (2) Applying the EKMONTAN model provides benefits in increasing awareness of environmental problems, (4) Applying the EMKONTAN model provides benefits in increasing responsiveness to problems environment, (5) Applying the EMKONTAN model provides benefits for improving skills in solving environmental problems (6) Applying the EMKONTAN model provides benefits for increasing environmentally responsible behavior (REB), (7) Applying the EMKONTAN model provides benefits for increasing creative thinking skills, (8) Applying the EMKONTAN model provides benefits for increasing critical thinking skills, (9) Applying the EMKONTAN model provides benefits for improving collaborative skills, (10) Applying the EMKONTAN model provides benefits for improving communicative skills and (11) the material learned is easy to understand.

Of the 11 indicators that assess the practicality of the usefulness aspect of the EMKONTAN model, the five validators gave an average of 3.7; 3,6; 3.8; 3.7; 3.8; 3.7; 3.6; 3.5; 3.8; 3.7; and 3.7. Overall, the average value of practicality in the aspect of expediency is at 3.7, which means it is very good. Thus, the EMKONTAN model has a useful predicate. This benefit is supported by a model component that is designed to make a real contribution to aspects of increasing knowledge on environmental issues, improving attitudes on environmental issues, increasing skills to solve environmental problems, increasing creative thinking, critical thinking, collaborative, communicative and environmental literacy skills which are all relevant. with the demands of 21st century life skills.

DISCUSSION

EMKONTAN is a learning model based on various modern learning approaches and strategies. Among them are inquiry based activities, problem based, case based, active students, project based and collaborative. Stated as inquiry based, because in the EMKONTAN model there are steps to find environmental problems through observation and identification and analysis of environmental problems around students. The EMKONTAN model is stated as a problem-based framework, because the material being studied is material in the form of environmental problems and natural resource conservation. EMKONTAN emphasizes on student learning activities, therefore MKONTAN has an orientation on student active learning (SCL). EMKONTAN also uses cases of environmental problems and conservation of natural resources as PKM themes to serve as tasks in preparing follow-up actions. Therefore, EMKONTAN has procedures as case based learning. EMKONTAN also wants the realization of the work in the form of a proposal for the Student Creativity Program (PKM) and this is a project carried out by each student study group. Thus EMKONTAN can be stated as based on Project Based Learning (PjBL). EMKONTAN in its implementation requires student collaboration in study groups, therefore this model also accommodates collaborative learning.

Based on the theoretical foundation developed for the EMKONTAN model, it can be stated that this model will be able to develop students' creative thinking skills, collaborative skills and environmental literacy. This assumption is supported by several previous studies which state that Inquiry has benefits in

developing creative thinking skills as stated by Evelyne (2016), inquiry-based learning is to teach: how to ask questions, when to ask, and what to ask to receive the best answers. about the subject matter. This will encourage creative involvement of students from the beginning of the lesson.

Agree with Hosnan's theory which states that the Inquiry learning model will make students learn active and the thinking process will last longer (Hosnan, 2014). The results of Purwaningrum's research (2016) state that when solving problems in groups with different thinking abilities, they will be given the freedom to express ideas. That is what makes the Inquiry learning model better than conventional learning. Research by Chrysmawati et al. (2017) showed that learning that applied the discovery learning model had an increase in mathematical creative thinking skills. The results of the research are supported using the application of creative thinking skills, namely a person's ability to generate various ideas in working on a problem using different ideas from existing ones so that students are motivated to take part in learning and are able to work on solving problems.

Regarding the EMKONTAN model which is stated as a PBL-oriented model, Septian (2017) states that the increase in creative thinking skills of students who study with the PBL learning model is better than students who study with conventional learning. Thus, EMKONTAN is also stated by the validators as a model that has benefits for improving critical thinking skills.

Regarding the EMKONTAN model, which is stated to be oriented to students active learning (SAL), it is indeed structured with learning steps that require student learning activities as well as the syntax it developed. Starting with the socialization step to the follow-up plan, all of which involve the active participation of students. The student activities are in individual units and group units. In individual units, students make observations in their respective environments, in group units, students coordinate and discuss to choose which problems will be the representation for the next study, Bonwell and Eison (1991) describe active learning strategies as "instructional activities that involve students in do something and think about what they do." In Creating a significant learning experience, Bonwell and Eison describe a holistic view of active learning that includes all of the following components: Information Experience, Ideas, Dialogue and Reflective. This framework can be a useful tool for considering how students learn actively.

In fact, the EMKONTAN model in its learning steps requires cooperation and mutual assistance to solve environmental problems in student study groups. This fact makes EMKONTAN included in the type of collaborative learning. The last step of the EMKONTAN syntax is to follow up in the form of compiling student work submitted to the PKM (Belmawa-Dikti) program. This step shows that learning through the EMKONTAN model produces a product in the form of a student creativity program in the form of a PKM proposal. Based on this fact, it can be understood that EMKONTAN has similarities with the Project Based Learning (PjBL) model. Recent studies are emphasizing the benefits of PBL; increased academic achievement, increased application and retention of information, critical thinking, communication, and collaboration (Condliffe, 2016; Iwamoto et al., 2016; Harmer & Strokes, 2014; Holmes, 2012; Bell, 2010; Thomas, 2000),

CONCLUSION

1. The EMKONTAN Learning Model has a very valid status with a validity level of 0.85%
2. The EMKONTAN learning model has a reliable status with the reliability level according to the validator reaching 0.87%
3. The EMKONTAN Learning Model has a practical status with the level of practicality according to lecturers reaching 0.86% and according to students reaching 0.88%
4. The problems encountered in the EMKONTAN learning model during the covid19 pandemic as online learning are generally related to internet stability both where students access and where lecturers do learning
5. It is necessary to adapt the online EMKONTAN learning model with the use of synchronous and asynchronous types of services

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