

## DEVELOPMENT OF LOCAL CULTURE-BASED STEAM LEARNING EVALUATION TOOL IN LABUAN, PANDEGLANG-BANTEN

Sendi Ramdhani <sup>1\*</sup>, Isti Rokhiyah <sup>2</sup>, Amalia Sapriati <sup>3</sup>, Tita Rosita <sup>4</sup>,  
Kristanti Ambar Puspitasari <sup>5</sup>

Universitas Terbuka

<sup>1</sup>[sendi@ecampus.ut.ac.id](mailto:sendi@ecampus.ut.ac.id), <sup>2</sup>[isti@ecampus.ut.ac.id](mailto:isti@ecampus.ut.ac.id), <sup>3</sup>[lia@ecampus.ut.ac.id](mailto:lia@ecampus.ut.ac.id),

<sup>4</sup>[tita@ecampus.ut.ac.id](mailto:tita@ecampus.ut.ac.id), <sup>5</sup>[ita@ecampus.ut.ac.id](mailto:ita@ecampus.ut.ac.id)

### Abstract

Community Service Activities (PkM) carried out in Labuan Regency aim to improve the ability of elementary schools to develop STEAM learning evaluation tools based on local culture. The main target audience of this training activity is elementary school teachers in the Labuan Banten sub-district. Based on the identification of the problem, it is known that elementary school teachers in Labuhan lack training in the development of evaluation tools, especially in STEAM learning. As a teacher, the ability to develop evaluation tools is needed to see student development. The target to be achieved in the implementation of this PKM is to increase the knowledge and skills of elementary school teachers in developing STEAM learning evaluation tools based on local culture. The method of implementing this community service activity is to use a training method that is packaged into two activities, namely seminars and workshops. The training activity began with a one-day seminar with an offline method to provide material on the scope of local culture-based STEAM learning evaluation tools, furthermore, the teachers trained themselves to develop evaluation tools with assistance from the PKM Team through online methods. The output of this service activity is a local culture-based STEAM learning evaluation tool developed by teachers and scientific publications. The results of this PkM are 3 packages of evaluation tools.

**Keywords:** Evaluation Tool, Local Culture, STEAM Learning.

### INTRODUCTION

Indonesian education is expected to always increase every year because Indonesia will reach the Golden Generation in 2045. Students must be encouraged to have 21<sup>st</sup>-century competencies, namely communication, creativity, collaboration, and critical thinking to achieve the Golden Generation in 2045 (Prameswari, 2020). In full, the skills that need to be mastered by students in facing the 21st century include skills in critical thinking, problem-solving skills, creative thinking skills, metacognition, communication skills, collaboration skills, various literacy, and the ability to live life and career (Greenstein, 2012).

The increase in formal learning in Indonesia has not been very significant. This can be seen from the results of TIMSS which measures the cognitive ability (knowing, applying, and reasoning) of grade IV and VIII students to put Indonesia still in the low category (Prastyo, 2020). So, it is necessary to apply a learning approach to improve the abilities of 21st-century students. One that can be applied is the proximity of STEAM because it can equip students

with various skills needed by students in facing competition in the 21st century (Wijaya, Karmila, & Amalia, 2015)

Teaching and learning activities must be able to equip students with life skills that are in accordance with the living environment and needs of students (Setyowati & Subali, 2011). Indeed, it is in accordance with the 2013 Curriculum that students are required not only cognitively but also effectively and psychomotor. So there is a mix of attitude, intelligence, and skill. Therefore, learning that has cultural values and love for the homeland as the next generation of the nation is expected to be able to build and develop Indonesia. Moreover, the Merdeka Curriculum integrates literacy skills, knowledge skills, skills, and attitudes as well as mastery of technology (Manalu, 2022).

If you look at the education of developed countries, let's call it America whose education is above us there is learning that has been modified so that education can improve optimally. Indonesia is also able to improve its education, one of which is by using STEAM-based learning. But of course, there must be modifications that characterize Indonesia compared to other countries. STEAM education is a learning innovation that combines science, mathematics, and art to be able to think logically and rationally, so that they can understand phenomena logically, and critically (Permananasari, 2016).

In addition to having to master learning, mastering teachers in developing evaluation tools is also important because the assessment activity can review the success of a program and determine a decision (Sutrisno, 2022). That's why teachers must have the ability to carry out evaluations. The ability of teachers to develop STEAM learning evaluation tools is expected to know the success of STEAM learning.

One of the characteristics of Indonesia is that it has a rich culture and diversity. This wealth can actually be utilized for the advancement of education through learning that is associated with local culture. The idea emerged to combine STEAM-based learning with local culture-based learning. Students can develop because they are influenced by a culture so the preparation of learning should be arranged according to the environment and culture where the student lives so that the learning process does not feel unfamiliar and can also interact reasonably with the surrounding environment (Nurani, 2014).

Labuan Subdistrict is within the administrative area of Pandeglang Regency, Banten Province. This district is located on the coast of the Sunda Strait. Pandeglang Regency has around 870 elementary schools and 34 of them are located in Labuan District. Based on data reports from the Banten Provincial School and Madrasah Accreditation Board in 2019, 70% of elementary schools in Pandeglang Regency have B accreditation and only 30% of them are A (dapo.kemdikbud.go.id, n.d.).

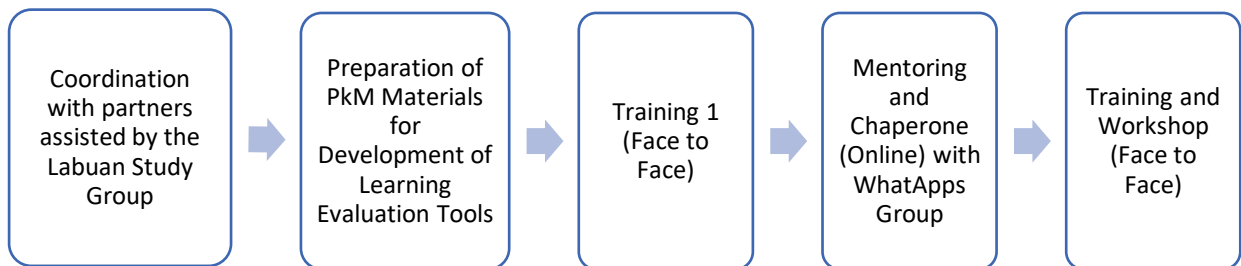
Based on the analysis of the situation that has been previously presented, there are problems that arise in elementary schools located in the Labuan District area, namely, the lack of facilities or facilities to gain knowledge and skills on how to develop STEAM learning evaluation tools.

**Table 1. Problem Identification n Partner**

<b>Condition</b>	<b>Problems</b>	<b>Necessity</b>	<b>Potential</b>
Has 34 primary schools	Rarely held training Only certain primary schools can take part in a training held in districts/provinces	Training Involving all elementary school teachers in Labuan District	Have an adequate number of teachers from 34 schools who can develop various models of learning assessment/evaluation tools and also have a local culture that can be linked to STEAM

**IMPLEMENTATION METHOD**

The purpose of this PkM is to improve the insight and skills of elementary school teachers in developing local culture-based STEAM learning evaluation tools and local culture-based STEAM learning evaluation tools developed by teachers and scientific publications. So it is hoped that this activity can help the government in an effort to improve the quality of elementary school teachers in Indonesia, especially in Labuan District through the development of knowledge and skills in developing STEAM learning evaluation tools based on local culture. To achieve this goal and provide benefits to elementary school teachers in Labuan Subdistrict, we make the following stages of activity:



**Figure 1. Stages of PkM Activities**

**RESULTS AND DISCUSSION**

The first training was held at SD Negeri Sukarame 2 Carita on March 26, 2022. The participants were 16 high-grade elementary school teachers (4, 5, and 6). The participants came from several elementary schools in Labuan District, including SD Negeri Sukarame 2 Carita, SD Negeri Banjarmasin 1, SD Negeri Pejambeun 1, SD Negeri Sukarame 2 Carita, SD Negeri Carita 2, and others.



**Figure 1. Opening of PkM Activities for the Development of Local Culture-Based STEAM Learning Evaluation Tools at SD, Labuan, Pandeglang-Banten**

At the first meeting, this was discussed in relation to: 1) Why STEAM Learning? ; 2) What are the components in STEAM?; 3) STEAM Learning Foundation; 4) STEM VS STEAM; 5) Novelty in STEAM; 6) STEAM Learning Design; 7) 21st Century Skills; 8) Pancasila Student Profile; and 9) Principles of Assessment and Evaluation



**Figure 2. Material Presentations and Group Discussions**

In the first training, 8 groups were successfully formed for the development of steam learning evaluation tools based on local culture. Each group is guided by PkM members with the following details

**Table 2. Group Division**

<b>No</b>	<b>Supervisor</b>	<b>Group Members</b>
<b>1</b>	<b>Dra. Isti Rokhiyah, M.A., P.hD.</b>	Group 1 AH RM
<b>2</b>		Group 2 SF SD
<b>3</b>	<b>Dr. Sendi Ramdhani, M.Pd.</b>	Group 3 AW SB
<b>4</b>		Group 4 DJ AM
<b>5</b>	<b>Dr. Ir. Amalia Sapriati, M.A.</b>	Group 5 SY US
<b>6</b>		Group 6 AM MR
<b>7</b>	<b>Dr. Tita Rosita, M.Pd.</b>	Group 7 RM MH
<b>8</b>	<b>Ir. Kristanti Ambar Puspitasari, M.A., P.hD.</b>	Group 8 BD EU

The mentoring process is carried out online through the WA Group. The teachers discussed in the WA Group. The supervisor encourages teachers to discuss. Mentors also provide feedback to teachers.

The second training was held at SD Negeri Carita 2 on July 30, 2022, in the form of a workshop on the development of Local Culture-Based STEAM Learning Evaluation Tools. The participants were said to come from several elementary schools in Labuan District, including SD Negeri Sukarame 2 Carita, SD Negeri Banjarmasin 1, and SD Negeri Pejambeun 1 which represented three groups.

At this second meeting, an example of the STEAM Learning Evaluation Tool was given. Then continued with independent work that developed a Local Culture-Based STEAM Learning Evaluation Tool.



**Figure 3. Development of STEAM Evaluation Tools**

From the results of the development, 3 STEAM Learning Evaluation Tools based on Local Culture were obtained, namely:

1. Making Miniature Banten Traditional Houses
2. Making a miniature boat
3. Creating a Miniature Mosque

MEMBUAT MINIATUR RUMAH ADAT BANTEN. ①

Sebagai siswa kelas IV kalian harus mampu membuat rancangan rumah adat Banten, karena kalian adalah orang yang punya adat budaya Banten, yg berdomisili di daerah Banten.

Ketertarikan kalian tentunya mempunyai aspirasi masing-masing, salah satunya, pekerjaan kalian mungkin akan di kerjakan dengan bersama-sama dan ide-ide yg berkaitan. ada yg sinaman, ulaman dan usuyur juga takang reji. tugas kalian adalah membuat rumah adat Banten.

- Buat desain rumah Banten kalian
- Buat integrasi struktur rumah supaya bagus dan kuat (seberapa kuat dan sebalik).
- Pertimbangkan dampak estetisnya (tampilan dan tanggapan orang terhadapnya) serta ketahanan.
- Merancang rumah adat Banten dengan selili dan penuh aspirasi.
- memilih bahan bangunan yg berkualitas (agar terangi bangun tersebut)
- memberikan presentasi tentang pekerjaan kalian
- ptkikan pemahaman akan rumah adat Banten yg kiranya perlu kita jaga keberadaannya.

MEMBUAT MINIATUR PERAHU SDN Sukun? ①

DESAIN PERAHU

- GAMBAR DESAIN PERAHU, SERTAKAN JENIS BAHAN DAN SELASAKAN BAHAN MANA KALIAN AKAN MENEMPATKAN DAN MENEMPEL

- mengapa kalian memilih bahan ini untuk perahu yang dibuat

- mengapa kalian mendesain seperti itu

- mengapa kalian mencubungkan/ memampatkan BAHAN - BAHANYA DENGAN TANE KALIAN BENCANA KAN

- apakah pengetahuan kalian benda-benda padat membantu kalian dalam merencanakan miniatur perahu dengan lebih baik

- sediakan bahan apa saja. untuk menempel Miniatur Perahu

- TERMASUK BAHAN / Apa apa saja!

Analisa Pembuatan Miniatur Masjid. ①

- ketahanan bahan
- langkah-langkah pembuatannya
- keindahan bentuk
- kesesuaian warna
- kesesuaian kelompok
- Hasil / produk

1. Buatlah desain rumah yang akan di buat!

2. Sediakan bahan yang digunakan untuk membuat rumah masjid tersebut? Sediakan!

3. Sediakan langkah-langkah pembuatan miniatur masjid?

4. Sediakan bahan dan alat yang digunakan!

5. Apakah bahan tersebut mudah di temui di lingkungan tempat kalian?

6. Gambar kembali miniatur hasil kerja kalian!

**Figure 4. Example of STEAM Tracking Evaluation Tool**

PkM activities for the Development of Local Culture-Based STEAM Learning Evaluation Tools in elementary schools need to continue because they are beneficial for teachers, especially for teachers who very rarely receive innovative learning training. However, in the implementation of PkM activities, it is necessary to pay attention to several things, namely:

1. Online mentoring and mentoring are not only carried out with the WA Group but need to be added synchronous activities, for example using zoom. Although online activities must still

pay attention to the readiness of the participants, especially those related to the internet network.

2. The place where face-to-face PkM activities are carried out should be carried out in schools in the middle of the sub-district so that they are easily accessible to all students in the sub-district.
3. Coordination with the local education office so that the invitation to participate in the activity comes from the education office.
4. The certificate given to participants contains 32 Hours of Training (JP) which is beneficial for teacher promotion.
5. JP's weight for the task of developing evaluation tools is made large in order to encourage participants to produce products.

## CONCLUSION

PkM activities are carried out in 3 main stages, namely: 1) Training 1 which is carried out face-to-face by discussing STEAM Learners and Evaluation; 2) Mentoring through the WA Group; and 3) Training and workshops on STEAM learning evaluation tools based on local culture. PkM activities in general can run smoothly even though the attendance of participants is still low because the area of Labuan District is large and consists of nine villages. The attendance of participants was low, especially in training activities and workshops because participants were worried about having to collect the results of the development of STEAM learning evaluation tools based on local culture. The results of this PkM activity are 3 packages of local culture-based evaluation tools, namely: 1) Making miniature Banten traditional houses; 2) Making miniature boats, and 3) Making miniature mosques. The results of the local culture-based evaluation tool package from this PkM activity may still be low because what is expected is 8 packages of local culture-based evaluation tools according to the group which is formed.

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