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Worksheet Development based on RE-STEM for Science Literacy and Character

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Abstract: There have been several cases that reflect the moral and character decline of Indonesian students. Based on some previous studies that have been carried out, ethnoscience and STEM-based worksheet can improve scientific literacy skills and grow students' character. The aims of this research are to test the feasibility of RE-STEM-based (Religious, Ethnosains-Science, Technology, Engineering, and Mathematics) science worksheet to improve students' scientific literacy and character, and to find out the students' responses to science worksheet based on RE-STEM as an effort to improve students' scientific literacy and character. This research applies the development research method with the ADDIE model. The sources of data in this study are the results of expert validations and student response questionnaires, while the research subjects are the experts and students. Data collection techniques and instruments in this study used the expert validation sheets and student response questionnaire sheets. The data analysis technique consists of two things namely the worksheet feasibility test using the V'Aikens value, and the student response test using the Likert scale of student responses which is then converted to a score interpretation table of five criteria. The results showed that the validity of the developed worksheet was categorized as valid with an average V'Aikens value of 0.86, so that the product developed was feasible to use, while the students' response after using such the developed worksheet is very good with a percentage of 86.17 percent. Thus, the developed RE-STEM worksheet has accomplished the validity requirements and received a good response from students, so that it can be implemented in the learning process.

INTRODUCTION

The implementation of the 2013 curriculum in Indonesia is driven by some pivotal problems, including the decline of the nation character and the low result of science literacy skills. The latter indicator is represented by the PISA (Program for International Student Assessment) results which show that the achievements of Indonesian students are lagging and underdeveloped (Fuadi et al., 2020; Irianto et al., 2017; Mulyasa, 2013; Narut & Supradi, 2019). This indication referred to the results of the PISA survey from 2000 to 2018, in which Indonesia's position was ranked 38 out of 41 countries, 38 out of 40 countries, 50 out of 57 countries, 60 out of 65 countries, 64 out of 65 countries, 69 out of 76 countries and 62 from 71 countries (OECD, 2021). Meanwhile, related to the decline of the nation character, according to Omeri, it

generally can be highlighted from some cases: (1) 158 regional heads involved in corruption during 2004-2011; (2) 42 members of the DPR committed the corruption during 2008-2011; (3) 30 members of the DPR in the 1999-2004 period involved in a bribery case in BI's DGS election; (4) the accute corruption also occurred in various institutions such as KPU, KY, KPPU, Directorate General of Taxes, BI, and BKPM (Basyar et al., 2020). Apart from the massive corruption, anarchism, juvenile deliquency, drug abuse, promiscuity, and moral and ethical decadency among students are also other obvious evidences to depict the character decline as serious problems for Indonesia (Budiarto, 2020).

The facts above are of course really alarming. Such condition also eventually urges the government to implement the 2013 Curriculum which aims to cultivate the noble character to students since early age. The values implemented in the 2013 curriculum are developed through two ways, namely spiritual and social attitudes (Sholekah, 2020). As such, the character education is then integrated into the learning process. Even to support it, the books provided are also oriented to facilitate the development of students' character (Ayuningtyas & Mustadi, 2018).

In this sense, the concept of character education is a system for inculcating certain values toward school members, those of which include the components of knowledge, awareness, and acts believed as a truth (Sudarmin, 2014). Therefore, the nature of character education developed in Indonesia is the value education which comprises of, at least, three major components: religiosity, independence, and decency (Syahfriani et al., 2019). The value of religiosity, for instance, is taken from religious teachings in order to have an obedient attitude and behaviour. To be religious means not only doing religious teachings, but also being tolerant to the other faiths, and willing to live in harmony with followers of other religions. However, it is worth noting that the sources of virtous values within the character education do not always come from religion, but it can be delved from the nation's culture as well (Sudarmin, 2014).

What the culture means is the set of local values inherited from generation to generation, which grow and develop to be the ways of life for a particular group. Such local virtues provide the world view to build harmonious relationship with people in one hand, and keep balance between religion and nature (science) on the other hand (Zidny et al., 2020). In this respect, according to Sudarmin (2014), it is necessary for students to recognize local cultures surrounding them because they spend more time at home than at school in which it enables them to more know the norm, custom, and tradition that have existed in their own community. Local values will be a basis for students' view and character to develop scientific knowledge (Nureflia et al., 2018).

The effort how to link science and culture around students' home is often called as ethnoscience which is integrated into learning process in the school to increase Student's scientific literacy skills (Hidaayatullaah et al.,2021). Therefore, ethnoscience is an activity to transform the indigenous science derived from a group's culture and belief into scientific science (Septiaahmad et al., 2020). The implementation of ethnoscience is urgent considering that education in the 21st century has to relate to science, technology, engineering and mathematics (Silvia & Simatupang, 2020). The application of STEM is suitable in science learning because it can train students in adjusting their knowledge to solve the problems in their environment by creating innovative and creative designs and utilizing technology (Madden et al., 2016; Pimthong & Williams, 2020). Due to STEM, students who usually do not actively participate in the science activity can then be involved in the learning

science process (Stohlmann et al., 2012). Although the STEM learning develops rapidly, there are still many obstacles in its implementation, one of which is a teacher support in facilitating the student activities (Margot & Kettler, 2019).

Education is currently directed at the expansion of learning innovations that require teaching materials in line with the age and level of students' development (Wulandari et al., 2018). Purwanto (2014) stated that the development of teaching materials such as the student worksheet currently is a very important need. The student worksheet contains a set of activities which must be done by students to gain a maximum understanding in order to be able to create basic abilities in accordance with the determined learning indicators (Nugraheny, 2018). Through a worksheet, students are encouraged to obtain the impressive experiences by performing activities which allow them to discover their concepts and principles (Sari et al., 2019). The use of worksheet in learning aims to support the mastery of scientific knowledge, cultivate scientific attitudes, and foster student's interests through the steps of discussion and experiment (Toharudin et al., 2011). According to Paramartha et al.(2020), the use of worksheets in learning process can improve problem-solving abilities and build students' positive character. In fact, worksheet also encourages the creation of 21st century characters and skills.

The World Economic Forum has identified there are sixteen skills which should be mastered by students in the 21st century, those of which are divided into three major groups, namely foundational literacy (basic literacy), competencies (competence), and character qualities (character education) (Husin et al., 2016). There are six basic literacy skills that should be owned by the community including students, one of which is the scientific literacy (Dewi et al., 2021). The scientific literacy means a person's ability to understand and communicate science and also apply scientific knowledge to solve problems from which they have the attitude and sensitivity in making decisions both for themselves and their milieu based on scientific considerations (Toharudin et al., 2011). The scientific literacy is very necessary to be integrated into learning because it is expected that students can meet the demand of the times to be the problem solvers who are competitive, creative, innovative, collaborative, and have virtuous characters (Choiriyah, 2021; Klucevsek, 2017; Vandegrift et al., 2020). The application of science concepts in the science education aims to make students able to solve real-life problems in the 21st century (Flores, 2018; Pratiwi et al., 2019; Yuliati et al., 2018). Science learning will be meaningful for students when they have the adequate scientific literacy skills (Hastuti et al., 2020; Yanti et al., 2015).

The low scientific literacy skills of students can be caused by not paying attention to the aspects of socio-cultural environment around them (Dewi et al., 2021; Paramartha et al., 2020). Science learning in schools also tends to ignore the existence of local culture (Damayanti et al., 2017). The delving of the local wisdom is increasingly significant in learning science at schools or well-known called as ethnoscience which intends to introduce students on issues and facts that emerge in the middle of society by using scientific perspectives (Septiaahmad et al., 2020). The integration between the values of local wisdom and science principles in learning process should be conducted because it will bring positive impacts particularly for moral,nationalism and religious attitudes (Paramartha et al., 2020). Such efforts eventually can strengthen students' character at schools.

Many studies have been conducted on ethnoscience including the use of the PBL model based on ethnoscience (Nuralita et al., 2020), ethnoscience-based module (Nisa et al., 2015), ethnoscience-based worksheets (Nureflia et al., 2018).

In addition, Silvia and Simatupang (2020) examine learning science with a STEM approach. As a result, both conclude that STEM approach in learning science is in line with the demands of 21st century education through which students have scientific and technological literacy skills that can be seen in their writing, reading and developing competencies of science skills to deal with problems faced in everyday life. The other similar research with different focus related to the STEM approach in learning science comprises of STEM-inquiry for critical and creative thinking (Saregar et al., 2020), LKPD with STEM approach (Lestari et al., 2018; Sayekti & Suparman, 2020; Silvia & Simatupang, 2020), STEM based module (Cahyani et al., 2020; Irmawati et al., 2021).

Apart from a bunch of studies as above-mentioned, however, it has no the research which combines character education, ethnoscience and STEM approach in science learning process. Thus, this study will examine the student worksheet by using RE-STEM (Religion, Ethnoscience, Science, Technology, Engineering, and Mathematics) approach. The student worksheets are developed by using ethnoscience, character education, and STEM approach as an analysis to improve scientific literacy skills and characters of students. This study aims to test the feasibility of RE-STEM-based science worksheets and student responses to RE-STEM-based Junior High School science worksheets. The problem in this research focuses on the development of RE-STEM (Religious, Ethnoscience, Science, Technology, Engineering, and Mathematics) based-science worksheet on the materials of vibration, waves, and sound to improve scientific literacy skills and characters of students, particularly religious character. Therefore, the benefit of this research is to create RE-STEM-based worksheets which can be used to enhance scientific literacy skills and characters of students.

METHOD

The methods used in this study comprise of the designs, procedures, data sources and research subjects, data collection techniques and instruments, and data analysis techniques. This research design makes use of the Development Research (R&D) method (Sugiyono, 2016) with the ADDIE research model. The procedure for carrying out the research is schematically shown in Figure 1.

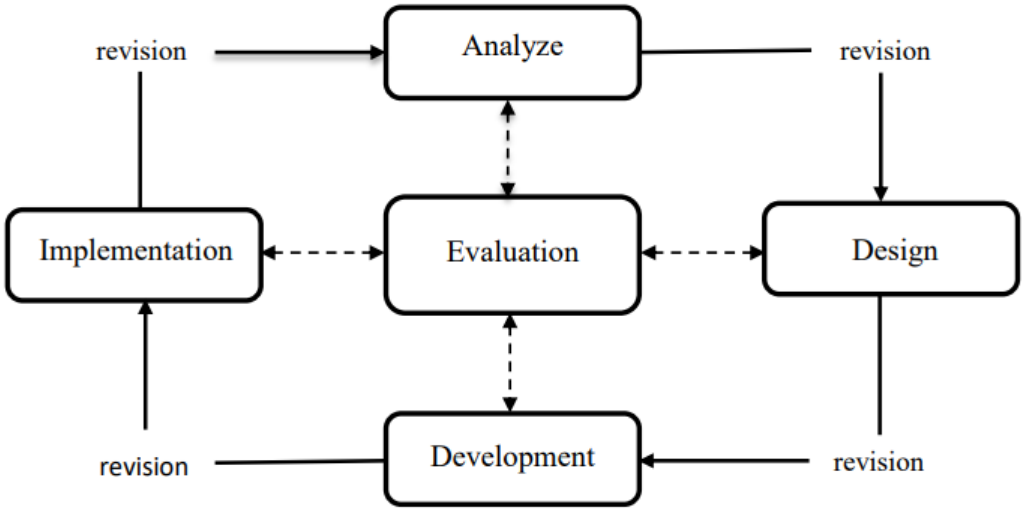

Figure 1. Research Procedure

The analysis in this research is conducted in two stages. The first is the literature study by seeking various references such as relevant journals, books and documents. The second is field observations, including interviews with science teachers, guidance counseling teachers, and village elder of Geblog to study ethnoscience through the art of cengklungan music. At this stage, a scientific explanation of the vibrations, waves, and sounds in cengklungan music is also carried out.

The initial step is to analyze the study of ethnoscience in the cengklungan musical instrument, and then analysis and integration are conducted in the materials of vibration and wave. The initial product design includes the title determination, standard competence, material, and design layout. Then, it is followed by defining the RE-STEM content in the worksheet and determine the structure of writing the worksheet.

At product development step, expert validation is carried out to determine the feasibility of the developed worksheet. If there are deficiencies, the worksheet will be revised before being tested on students.

Product implementation aims to collect data used as a basis to determine student responses to the developed worksheet. At this stage, the worksheet that has been made is tested on a limited number of 15 students of SMP N 6 Temanggung. From the results of that limited trial, the worksheet was revised based on suggestions and inputs from students. After that, a class trial was continued. After testing the product, it will be known the shortcomings of the developed products. The results of these trials are used as material to remedy and refinement of the worksheet in order to create a suitable worksheet.

The data sources in this study are taken from the results of expert validation and student response questionnaires. The subjects in this study are the experts (two science lecturers at Universitas Tidar and three science teachers at SMP N 6 Temanggung), 15 students in class IX F and 32 students in class VIII at SMP N 6 Temanggung.

Data collection techniques used in this study are validation sheets and questionnaires. The research instrument is the expert validation sheet and student response questionnaires. The data analysis technique of this research includes two things, namely the worksheet feasibility test by using the V'Aikens value, and the student response test by using the Likert scale of student responses which are converted to a score interpretation table of five criteria. Score validity is obtained through the validity criteria in the V-Aiken table based on the number of raters and the highest score on the validation questionnaire. While the results of the questionnaire are calculated in the percentage of each aspect and then converted to a score interpretation table (Table 1).

Table 1. Questionnaire Score Interpretation Criteria (adaptation from Riduwan, 2016)

No.	Interval	Criteria
1	84 – 100 %	Very good
2	68 – 83 %	Good
3	52 – 67 %	Enough
4	36 – 51 %	Not good
5	20 – 35 %	Very less

RESULT AND DISCUSSION

Validity of RE-STEM based Worksheet

The expert assessment was carried out to stipulate the validity of RE-STEM (Religious, Ethnoscience, Science, Technology, Engineering, and Mathematics)-based SMP Science worksheet. The validation includes the aspects of appearance, content, presentation, and language. The worksheet validation analysis was done by using Aiken's V. The results of worksheet validation by the experts are shown in Table 2.

Table 2. Worksheet Validation Results

No.	Aspect	Score	Category
1	Display Eligibility	0.83	Valid
2	Content Eligibility	0.84	Valid
3	Serving Eligibility	0.91	Valid
4	Language Eligibility	0.86	Valid
	Average	**0.86**	
	Category	**Valid**	

Based on the test result of data expert validity, it is gained an average assessment on the aspects of appearance, content, presentation, and language with score 0.86 or with a valid category, so that it points out that the RE-STEM-based worksheet is feasible to use with revisions according to the expert advices.

Student Responses of RE-STEM based Worksheet

Students' responses to the RE-STEM-based and RE-STEM-based SMP science worksheet were analyzed by using the percentage of Likert scale scores. The results of the percentage analysis of the Likert scale scores for the responses of class IX F and VIII H students are shown in Table 3 and Table 4.

Table 3. Responses of Class IX F Students to Worksheet

No.	Aspect	Percentage	Category
1	Content	82.50 %	Very good
2	Layout	80.00 %	Good
3	Language	81.30 %	Very good
	Average	**81.27 %**	
	Category	**Very good**	

Table 4. Response of Class VIII H Students to Worksheet

No.	Aspect	Percentage	Category
1	Content	86.19 %	Very good
2	Layout	86.25 %	Very good
3	Language	86.09 %	Very good
	Average	**86.17 %**	
	Category	**Very good**	

Based on the response data of class IX F students in the limited test, an average assessment of the three aspects was obtained with a percentage of 81.27 %, so it can be concluded that the RE-STEM-based SMP science worksheet to improve scientific literacy skill and character of students was categorized as very good. Based on the response data of class VIII H students in the experimental class test, the average assessment from three aspects was obtained with a percentage of 86.17 %, so it can be summarized that the RE-STEM-based SMP science worksheet to improve scientific literacy skills and characters of students received the responses with very good category.

RE-STEM (Religious, Ethno-science, Science, Technology, Engineering, and Mathematics)-based science worksheet to increase scientific literacy skills and characters of students was assessed by the experts consisting of two science education lecturers at Tidar University and three science teachers at SMP N 6 Temanggung. Data collection is conducted by giving validation sheets and worksheets to the experts. The product is shown in Figure 2.

Figure 2. Product RE-STEM Worksheet

The material for *cengklungan* music in the worksheet also contains religious character values such as gratitude, praying to God, and balancing life in the world and the hereafter. The research of Paramartha et al. (2020) states that the integration of the local wisdom values in learning is necessarily carried out because it contains moral values, especially nationalism and religious attitudes.

The scientific aspect is integrated into activities in the worksheet through simple experiments. In worksheet 1 related to vibration, for example, there is the simple experiment on a ruler and pendulum which can stimulate students to scientifically explain the phenomenon of vibration. It is supported by the research done Sudarno et al. (2015), which shows students' understanding and mastery of subject matter can be carried out well when the material is associated with the environment where students live. Then the technological aspect is integrated into the evaluation questions from each worksheet. In worksheet 1 (vibration), there is a question about evaluating the seismograph, a tool for measuring the earthquake strength. Students are asked to explain how a seismograph works. It requires students to be able to explain the phenomena how the seismograph works scientifically related to vibration. Students seek the information from textbooks or internet so that they can find out the answers. It is actually supported by the opinion of Sarwi et al. (2016), stating that in a guided inquiry, there is a process of questioning about the existing phenomena and seeking the answers. Meanwhile, the engineering aspect emerges in the part of the experimental activity in the worksheet while the mathematical element appears in the use of formula in learning.

The results of the worksheet validation on the aspect of display feasibility obtain an average score of 0.83 with a valid category. This aspect consists of four assessment sub-aspects, namely the arrangement or layout of the initial worksheet display, the worksheet background display, the worksheet cover display, and the clarity of the letter display on the worksheet. This aspect gets the lowest average score when compared to the other three aspects. This is due to the limitations of researchers in the field of graphic design. There are suggestions from the experts to change the order of writing titles on the worksheet cover.

The results of the worksheet validation on the content feasibility aspect gain an average score of 0.84 with a valid category. This aspect consists of 11 sub-assessments, namely the suitability of the material with the basic competencies in the curriculum, the relevance of the practice questions in the worksheet with scientific literacy indicators, the material and the worksheet experiment to stimulate the improvement of the student religious character, the suitability of the material with the truth concept, the suitability of the material with facts in daily life, the suitability of the material with the development of science and technology, the linkage of supporting information with the competencies which must be mastered by students, the presentation of

the material in accordance with the environment around students, the activities of students in the worksheet to support the achievement of competencies that must be mastered, the suitability of RE-STEM values with the concept of science, and packaging materials that are appropriate for the students' growth and development. There are suggestions from the experts that the technological tools presented in the worksheet evaluation questions are in the environment around the students. It is better if *cengklungan* video is made by showing the presence of vibrations, waves, and sounds or invites students to imitate the movements of the *cengklungan* dancers, and seek *cengklung* as a medium for learning on the material vibrations, waves, and sounds.

The results of the worksheet validation on the presentation feasibility aspect obtain the average score of 0.91 with a valid category. This aspect has nine sub-assessments which consists of the presentation of the material simply and clearly, the suitability of the image presentation with the material, the presentation of the material systematically and sequentially, the suitability of the presentation of the material with the characteristics of the subject, the clarity of the identity of the description of pictures and tables, the completeness of the worksheet components, clarity and the attractiveness of the presentation of the image, the suitability of the title and description of the image with the image, the contents of proportional worksheet. This aspect gets the highest average score when compared to the other three aspects. This is because there is no advice from media and material experts on this aspect.

The results of the worksheet validation on the language feasibility aspect obtain the average score of 0.86 with a valid category. This aspect has four assessment sub-aspects which consist of the use of communicative language, the ability to make interactive communication with students, simple and easy to understand language, and the use of spelling by PUEBI. In this aspect, there are no suggestions from the experts.

RESTEM-based worksheet products to improve scientific literacy skills and students' character were revised based on the expert advices after accepting an assessment. The revisions of product include: 1) *Change the writing order in the title on the cover worksheet.* The writing order of the title on the worksheet cover was changed from Worksheet Based on RE-STEM (Religious, Ethnosains-Science, Technology, Engineering, and Mathematics) Vibrations, Waves, and Sounds to Worksheet (Student Worksheet) Vibrations, Waves, and Sounds Based on RE-STEM (Religious, Ethnoscience, Science, Technology, Engineering, and Mathematics). This is intended to discuss from more general to specific things so that readers know better the priority order of the products being developed such as the types of the product, the subject matter (waves vibrations and sounds), and then the characteristics of the worksheet. 2) *Strive for the art of cengklungan as a medium for learning science on vibrations, waves, and sounds.* In this study, the researcher did not directly use the cengklung musical instrument because the size of it is too large and is not possible to bring it to the class. To directly watch the cengklungan performance people usually go to Geblog village where such musical instrument is preserved. Yet, as an alternative for learning, the cengklungan video is provided to show the concepts of vibrations, waves, and sounds. In the vibration material, the video shows the cengklungan dancer and invites students to imitate the dancer movements. In the part of the wave material, it shows a video of a person whipping a whip to the ground. Then, in the sound material, a video shows about the different tones produced by the four types of *cengklung* musical instruments. As the material of

sound hearing mechanism, a video is shown about sinden and wiraswara singing in the performance of *cengklungan* music. Learning videos are used as a substitute for the original cengklung musical instrument. In this sense, video appearances intend to make students simply understand the materials of vibrations, waves, and sounds even if they do not directly watch the cengklungan music performance. It is relevant with the statement that science learning videos are needed by students in learning due to making it easier for students to understand the concepts that are being studied (Chang et al., 2020; Zhan et al., 2022). *3) The technological tools presented in the worksheet are objects that are found in the environment around students.* The technological tools contained in the questions of evaluation worksheet are adapted from the environment around the students. In worksheet 1 (vibration), the technological tool presented has not been changed, namely the seismograph which is an instrument for measuring the strength of an earthquake. In worksheet 2 (wave), the technological tool presented was changed from a buoy (tsunami wave measuring device) to the Early Warning System (EWS) which is a flood detection device usually installed in large rivers. It is needed becuase the highland areas such as in Temenggung are far from the sea and closer to the river. Meanwhile, in worksheet 3 (sound), the technological instrument presented has been changed from a guitar to a cengklung musical instrument. This is to help students to more familiar with their own culture around them. Then, in the worksheet 4 (a sound hearing mechanism), the technology tool presented is a sonar system, but it was changed from a sonar system to measure the depth of the sea to a sonar system to measure the depth of a river or pond.

In addition the changes of the technological tools presented in the worksheet are proposed to make students have better understanding toward the scientific concepts of vibrations, waves, and sounds by connecting them to technological tools that are usually found in their environment. This view is paralel with the opinion of Sudarno et al. (2015), saying that the subject matter associated with the milieu around can insist students to more understand and master the subject matter well.

The RE-STEM-based SMP science worksheet to improve scientific literacy skills and characters of students was tested on a limited basis to only 15 students in class IX F. It is to stipulate students' responses to the worksheet developed before being tested to the experimental class. Data retrieval is done by using student response questionnaires. The population in this limited trial is class IX of SMP N 6 Temanggung while the sample is 15 students of class IX F of SMP N 6 Temanggung. Learning in this limited test is done online. There are four materials which are given in learning process, consisting of vibrations, waves, sounds, and the mechanism of hearing sound. Students are also asked to fill in the questionnaire link that is sent via the WhatsApp group. The researcher then analyzed the results of the questionnaire to determine the students' responses to the developed worksheet. Then the product was tested in the experimental class (VIII H).

The results of student responses in limited trials and class trials on RE-STEM-based SMP science worksheet to improve scientific literacy skills and characters of students in the aspects of material or content, presentation, and language shown in Figure 3.

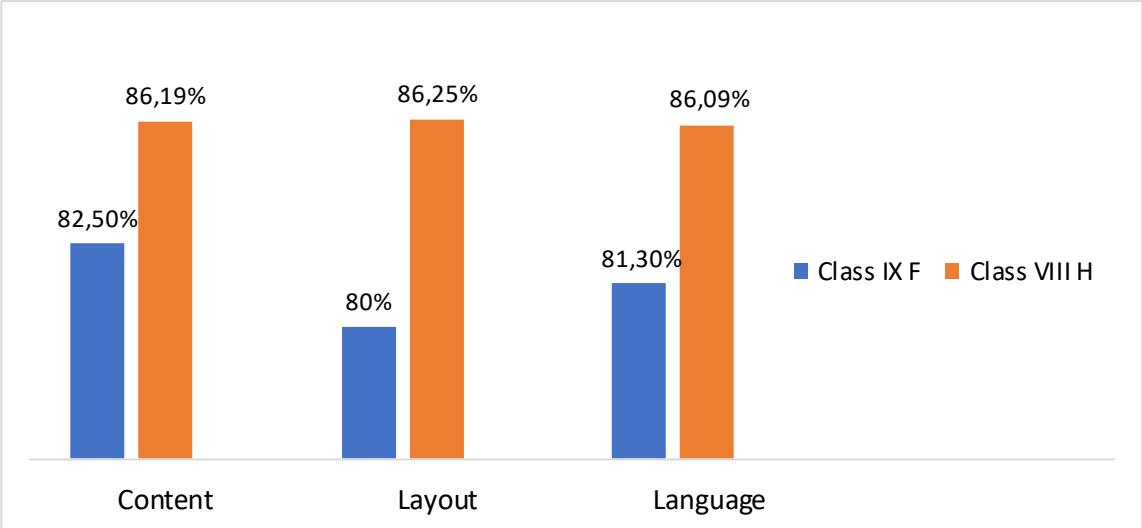

Figure 3. Diagram of Student Response Results for Class IX F and VIII H

The average percentage of the total response results of students in class IX F (limited test) in the three aspects is 81.27 % with a very good category while in class VIII H is 86.17 % with a very good category as well. The results of the responses of class IX F students (limited test) on the material or content aspect got the highest average percentage, which was 82.50 % with a very good category. The results of the responses of class VIII H students on the material/content aspect got an average percentage of 86.19% with a very good category. This shows that class IX F and VIII H students are more interested in the material or content described in the worksheet. Class VIII H students commented that the worksheet makes them easier to learn and understand the material for vibrations, sounds and waves. This is the opinion of Pasani & Kamaliyah (2021) who states that one of the functions of the worksheet is as a teaching material for the sake of making it easier for students to understand the material given by the teacher. Another opinion is that worksheet helps students to learn more independently because in worksheet there is a summary of material and practise questions that students can use to learn vibrations, waves, and sounds material even outside of class hours. It is supported by the statement that one of the goals of worksheet is to train students' learning independence (Dewimarni et al., 2018; Pasani & Kamaliyah, 2021). There are other comments from students in which worksheet provides information and helps students find new knowledge, including about the scientific concepts of sounds, waves, and vibrations, related to technology, ability to design experiments, mathematical equations, local culture of cengklungan music, values and religious character in the local culture. The students obtain a new information through the activities in the worksheet. This view is in line with the argument of Mutlu (2020) and Piawi et al. (2018), arguing that one of the objectives from the worksheet is discovery in which students are guided to investigate certain phenomena in order to find patterns from such phenomena and generalize them to make an estimate.

The results of the responses of class IX F students (limited test) on the presentation aspect got an average percentage of 80 % with good categories. This aspect obtains the lowest average percentage result when compared to other aspects. There are additional comments from students that it is better to add more interesting supporting pictures in the worksheet for the sake of avoiding the feeling bored quickly in learning process. The results of the responses of class VIII

H students in the presentation aspect got the highest average percentage of 86.25 % with a very good category and increased from the results of the limited test for class IX F. This is because researchers have revised certain parts by adding supporting pictures in worksheet. Students also comment that worksheet is interesting and easy to understand because the pictures truly clarify the information. This is actually supported by Suhono & Sari' opinion (2020) that one of the technical requirements for creating the worksheet is the pictures in the worksheet which effectively conveys the contents of images to worksheet users.

The results on the responses of class IX F students (limited test) on the language aspects obtained an average percentage of 81.30 % with a very good category. Then, the results of the response of class VIII H students on the language aspect got an average percentage of 86.09 % with a very good category. Based on such data, students comment that the worksheet is quite understandable and the explanation is detailed. It makes it easier for students to learn the materials for vibrations, waves, and sounds. The sentences used in worksheet are also quite effective. It is supported by the statement that the construction of requirements for the preparation of worksheet is to use an appropriate language to the maturity level of students (Hasibuan et al., 2019; Melati et al., 2019; Syarifah & Iswari, 2021).

CONCLUSION

The RE-STEM-based worksheet contains the main elements of religion, ethnoscience, science, technology, engineering, and mathematics. The results of the worksheet development test gained a validity value of 0.86 by which the worksheet was feasible to use. In addition, the results of student responses after using the worksheet are categorized as very good, with score 86.17%. Based on the two results, the developed RE-STEM-based worksheet can be applied in the learning process to improve students' scientific literacy skills and characters. The weakness from the development of this product is the difficulty to integrate ethnoscience and STEM aspects. This is because not all STEM elements are contained in the ethnoscience aspect. The follow-up of this research is to apply the RE-STEM- based worksheet to see its effectiveness in improving the students' scientific literacy skills and characters. Thus, to develop and examine the same worksheet on different materials and other ethnoscience studies is posibly suggested for the future research.

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