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# Improving teachers' skills on developing competence-based of e-student whorksheets

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## ABSTRACT

The Covid-19 pandemic has changed the learning process from offline to online. In responding to this change, innovations and the use of technology are needed so that learning process runs well and the goals set are achieved properly. One of an important material in learning is student worksheet. This community service program aimed at providing assistance in preparing competency-based of electronic student worksheet (e-student worksheet) using Google Form platform. The targeted participants of this activity were principals and all teachers of SMPN 25 Malang. The methods applied were workshop and mentoring. The workshop was delivered informatively with the materials that focused on student worksheet, e-student worksheet, and the use of Google Forms in preparing e-student worksheet. The results of this activity were the skills gained by participants in terms of compiling e-student worksheet. The participants have prepared student worksheet for blended learning. This e-student worksheet resulted was then implemented in the even semester of the 2020/2021 school year.

Meningkatkan keterampilan guru dalam mengembangkan e-student whorksheets berbasis kompetensi. Pandemi Covid-19 membuat proses pembelajaran berubah dari pembelajaran luring menjadi pembelajaran daring. Dalam merespon perubahan tersebut, dibutuhkan inovasi dan pemanfaatan teknologi agar pembelajaran tetap berjalan dengan baik dan tujuan pembelajaran tercapai, salah satunya dalam hal lembar kerja peserta didik. Sehubungan dengan itu, ipteks bagi Masyarakat ini bertujuan untuk memberikan pendampingan penyusunan Lembar Kerja Peserta Didik elektronik (e-LKPD) berbasis kompetensi dengan menggunakan moda Google Form. Sasaran kegiatan ini adalah kepala sekolah dan seluruh guru SMPN 25 Kota Malang. Metode yang diterapkan adalah workshop dan pendampingan. Workshop disampaikan secara daring dengan materi yang berfokus pada LKPD, e-student whorksheets, dan pemanfaatan Google Form dalam penyusunan e-LKPD. Hasil kegiatan ini berupa keterampilan dalam menyusun e-LKPD oleh seluruh guru SMPN 25 Kota Malang. E-LKPD ini selanjutnya diterapkan pada semester genap tahun ajaran 2020/2021.

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## INTRODUCTION

The Covid-19 pandemic has prompted the government in terms of the Minister of Education and Culture of the Republic of Indonesia to issue an online learning policy through Circular Letter No. 4 Year 2020 regarding to the Implementation of Educational Policies during the emergency period of the spread of Corona Virus Disease (Covid-19). In implementing this policy, teachers are required to upgrade their skills to avoid learning loss. Learning loss can be interpreted as a decline in the academic process, namely the loss of students' knowledge and abilities, both specifically and in general, due to various

factors. In this case, these factors including the changes in learning interaction pattern, teachers' and students' abilities in IT, and the availability of online teaching materials.

One type of teaching materials used by teachers in learning is student worksheet. student worksheet is one of the activity formats designed by teachers to regulate students during learning process. student worksheet plays a very important role in the implementation of learning process as it is able to improve students' performance in learning activities (Wulandari & Surjono, 2013; Anita et al., 2019), especially in constructing their knowledge according to the demands of the Curriculum 2013 (Anggraini et al., 2016). The elements in the student worksheet include title, learning instructions, learning indicators, supporting information, work steps, and assessments (Sari et al., 2017). In another version, it is stated that the student worksheet elements are subject, semester, place, targeted competencies, as well as tools and materials (Widyantini, 2013). The emergence of each element can be adjusted based on the characteristics of the subject.

In fact, not all of the student worksheets which are compiled and implemented in schools meet the standards. Student worksheets which are widely circulated and used in schools today are served in general form and only contain material summary (Elfina & Sylvia, 2020). It does not provide learning experiences for students (Dermawati et al., 2019). Furthermore, the development of the existing student worksheet was only focused on approaches, methods, or learning strategies. For example, student worksheet based on learning cycle (Anggraini et al., 2016), student worksheet based on scientific approach (Widodo, 2017), student worksheet based on environment (Dermawati et al., 2019), and student worksheet based on inquiry (Anita et al., 2019). It is still rare to find the preparation of technology and competency-based student worksheet.

The above phenomenon also occurs in SMPN 25 Malang. SMPN 25 uses student worksheet prepared by teachers. Unfortunately, the prepared student worksheets tend to lead students to learn the materials and questions that they can learn at home and mostly are paper-based. Parents or guardians take students' worksheet to school once a week and collect it back to school the following week. This is less effective from the learning aspect and less safe from the health aspect due to high parent mobility. Therefore, in the context of the new adaptation process of learning during the Covid-19 pandemic, more innovative student worksheet which is packaged in online form, in term of e-student worksheet, is needed (Hidayah et al., 2020). Converting the student worksheet into an electronic form is considered more effective during the Covid-19 pandemic because it can be operated using a smartphone or computer (Baihaki et al., 2021), so it can be accessed anytime and anywhere (Rochman, 2021). Previously, student worksheet content was limited to allow students to be active and study at home, which was built into an e-student worksheet with activities that were able to build student literacy competence.

Literacy, which was previously often defined as reading competency, now has a broader meaning and indicator. Literacy is no longer defined as the ability to spell word for word, but reading the comprehension (by the lines and beyond the lines) and critical reading. Similarly, writing is no longer just writing letter by letter, but writing to express ideas in various contexts of life. Conceptually, literacy is the ability to use reading and writing in carrying out tasks related to the world of work and life outside school. In other words, reading and writing are used as tools to achieve other higher skills. Basically, the essence of literacy activities is reading, writing, thinking (Suyono, 2009).

Based on the description above, science and technology for the community in SMPN 25 Malang is in the form of increasing the teachers' ability in compiling competency-based of e-student worksheet. In line with that, the expected outputs in this community service program were, teachers can: (a) improve understanding of student worksheet, (b) master the skills in compiling e-student worksheet, and (c) implement e-student worksheet in learning.

## METHOD

This service activity was carried out in SMP Negeri 25 Malang City with 13 participants consisting of 12 teachers and one school principal. The methods used were: discussion, workshop, and mentoring. The implementation of this community service program was carried out in three stages, namely pre-implementation, implementation, and post-implementation stages. In detail, the three activities can be seen in Table 1.

Table 1. Stages of implementation of competency-based of e-student worksheet preparation training activities

No	Stage	Activity	Method
1	Pre-implementation	a. Analyzing the situation and condition of the school in the form of discussions with the principal to dig up information related to the problems faced by the school and the possible solutions offered; b. Preparing activity forms and schedule; c. Preparing training materials.	Discussion
2	Implementation	a. Submitting competency-based student worksheet material. b. Submitting e-student worksheet material using Google Form c. Preparing e-student worksheet using google form	Accompaniment Workshop
3	Post-Implementation	Preparing the follow up plan	

Practically, the three stages targetted respective outcomes. Pre-implementation stage resulted a schedule for implementing activities and materials which would be delivered to the participants of the community service program. The first material was competency-based student worksheet which was presented by Dr. Daroe Iswatiningsih, M.Sc. The second material was preparation of e-student worksheet using Google Form which was delivered by Fida Pangesti, S.Pd., M.A. The both materials were given to participants at the implementation stage, and followed with the mentoring activity. The

workshop activity was conducted offline, meanwhile, mentoring activity were carried out online by considering the effectiveness of the time and technical implementation, as well as the conditions of the Covid-19 pandemic. The output of implementation stage was the compilation of competency-based of e-student worksheet which is ready to be implemented in learning. Finally, the output of post-implementation stage in term of follow up plan document which contained of the mechanisms for disseminating of e-student worksheet products and technical implementation of e-student worksheet in learning.

## RESULTS AND DISCUSSIONS

### Pre-implementation

In the pre-implementation stage, the community service team conducted several visits to the schools. The activities carried out at this stage included discussions of the analysis about school situation and condition. The discussions done with the school principal (Figure 1) and the teacher (Figure 2) to explore the information related to problems faced by the school and the possible solutions offered.



Figure 1. Discussion of situation analysis on student assignment documents



Figure 2. Discussion of the observation activity done by teacher on students' assignment results

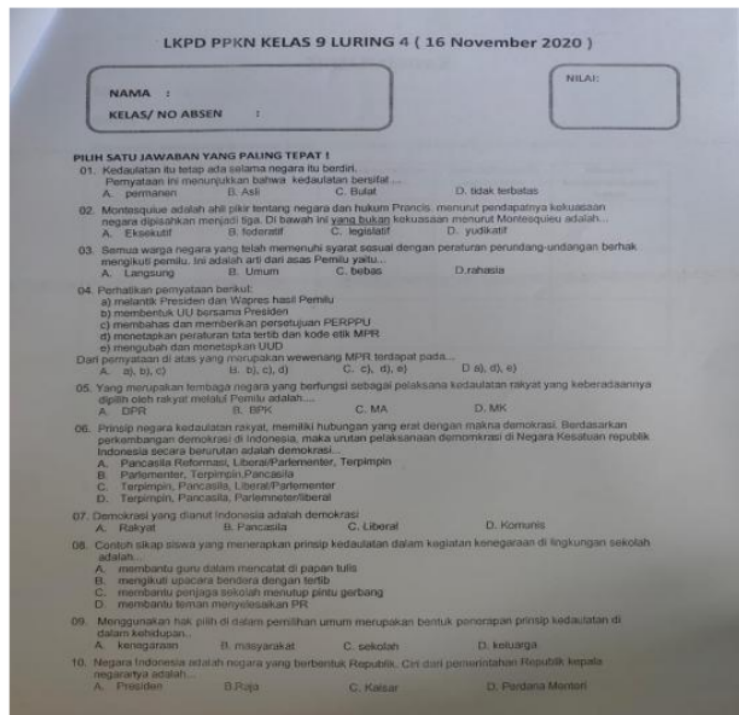


The results of the initial discussions showed that teachers of SMPN 25 have prepared student worksheet. There are eleven subjects which used student worksheet to cultivate students' understanding about the materials learnt. The student worksheets were given to students once for the entire subjects in a week. Those student worksheets were in printed version which were taken in school by parents to be studied and completed at home by students. In addition, in compiling those printed version of student worksheet, teachers tended to adopt from internet resources with various systematics. In general, the regulation on student worksheet development at SMPN 25 Malang can be seen in Table 2. Furthermore, the student worksheets which were prepared by teacher before the training given are served in Figure 3 and Figure 4.

**Table 2.** Student worksheet development regulations at SMPN 25 Malang City

No.	Student worksheet regulation
1.	The teacher makes student worksheet based on basic competence and learning achievement
2.	The subject teacher submits the task/activity file which is compiled into student worksheet to the coordinator
3.	The coordinator prints and copies as many as the number of students in each class
4.	The coordinator is assisted by the team to organize student worksheets of 11 subjects and stack them according to class
5.	The arrange of student worksheet in each class is given to the homeroom teacher and attached with a students' list
6.	The homeroom teacher informs students via WhatsApp or virtually meeting to take the student worksheets at school every Monday, during school hours.
7.	The students tell their parents to take the student worksheets. Based on school policy, only parents who have the right take student worksheets.
8.	The pick-up time of student worksheet is scheduled for each class to avoid crowd. Moreover, the parents must pay attention to the implementation of health protocols (using mask, washing hand/ spraying hand sanitizer and maintain social distancing during queuing process in each class.
9.	Students work on answering questions or carry out activities mentioned in the student worksheets according to the schedule every day,
10.	On Saturday, students submit the completed student worksheets to the school security guard who has prepared class identities
11.	The security guard arranges the student worksheets based on the subject, and puts them in the task locker according to the class identity which is placed in front of teachers' room
12.	Teachers conduct review on the collected student worksheets.

The observation activity on student worksheet development regulations until it is distributed to students can be grouped into four parts. *First*, the teacher preparation to arrange student worksheet includes three activities i.e., (1) identification of basic competence and learning objectives that have been taught, (2) transfer of learning outcomes into learning activities which are arranged on student worksheet in both question and activity forms, and (3) submission of student worksheet files to the teacher in charge of student worksheet.



**Figure 3.** Student worksheet of Civic Education Subject

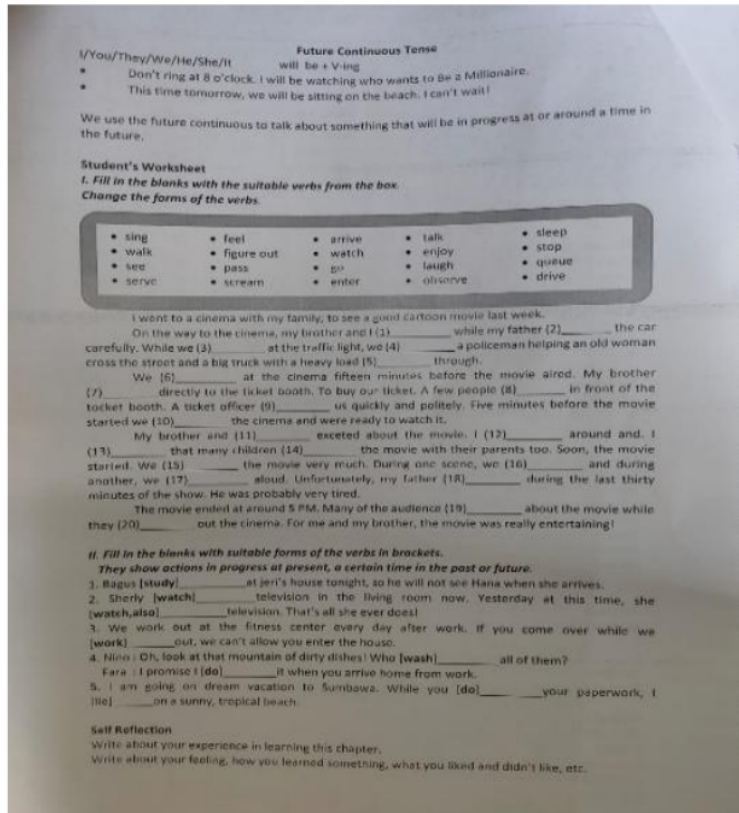


Figure 4. Student worksheet of English Language Subject

Second, documenting and distributing student worksheet include the following activities: (1) collection of student worksheet files from eleven subjects by coordinator; (2) printing and copying the student worksheet by coordinator; (3) the arrangement of student worksheets based on grade in terms of 7, 8, and 9 (each grade comprises of four parallel classes in which 12 classes in total); and (4) distribution of student worksheets to each homeroom teacher in which the student name lists were attached on each class' es worksheet arrangement.

Third, the submission of student worksheet with the following activities: (1) the homeroom teacher distributes the student worksheet to the parents of students, and (2) the homeroom teacher calls the names of the students and submit the student worksheet and then fills out the admission list. When parents come to school, the policy is to comply with health protocols, (a) parents wear masks, wash their hands/spray hand sanitizer, (b) parent queue according to the name of the child being called and keep their distance, and (c) guardians class motivates parents to keep monitoring and encouraging children to learn.

Fourth, return the student worksheets with the following activities: (1) students work on the student worksheet for one week, and it is considered in that one week as offline learning, (2) on Saturday morning, students return the student worksheet to school which was received by the school security guard according to , (3) students put student worksheet on the shelves that have been provided based on parallel classes, (c) school security guards organize student worksheet based on class and subject, and (d) security guards put neat student worksheet based on class and folder in each locker subject teachers.

Fifth, student worksheet assessment. Teachers who have received the results of the student worksheets will conduct an assessment and recap it in the assessment notebook. From the results of the student worksheet that students have made, the teacher knows the level of mastery of the material being taught. The teacher will provide reinforcement for students who are considered masters and provide remedies for students who are considered less than optimal.

In line with the initial design and the results of the situation analysis above, the service activities carried out were training in the preparation of electronic student worksheet by utilizing the google form. In this discussion, the technical implementation of activities, including the schedule for the implementation of activities, was also discussed. Next, the service team compiles material and activity modules.

### Community Service Implementation

The implementation stage of service activities includes three main activities, namely training, mentoring, and implementation. The expected achievement targets were (a) increasing understanding of learning literacy and student worksheet, (b) mastering skills in preparing e-student worksheet, and (c) using e-student worksheet in learning. To measure the achievement of these targets, observations and tests (pretest and posttest) were conducted. Broadly speaking, the materials, targets, methods, and achievements of this activity are set out in Table 2.

The initial stage of implementing community service activities was training activities. The training materials included learning literacy, student worksheet, and the preparation of e-student worksheet. This e-student worksheet was prepared by utilizing the Google Forms mode. The selection of Google Form was based on the consideration that most teachers have taken advantage of Google Classroom. In addition, the operation of Google Forms also tends to be easier than other modes. In this case, e-student worksheet was emphasized on literacy competence which is the part of character education. The use of information technology (online applications) is an alternative in strengthening the character education of students.

Table 2. Material, target, and training method

No	Material	Target	Method	Achievement
1	Learning literacy	Teachers can better understand learning literacy	Discussion in form of workshop	Increased teachers' understanding of learning literacy, from an average of 55 to 88.
2	Student worksheet	Teachers can better understand the nature, function, and types of student worksheets.	Discussion in form of workshop	Increased teachers' understanding of student worksheet, from an average of 70 to 91.
3	Competency-based of e-student worksheet preparation	The teachers are able to compile a competency-based of e-student worksheet for each subject from the selected lesson plan	Demonstration and implementation	The compilation of 12 e-student worksheets done by teachers
4.	The use of student worksheet for learning	The teachers make student worksheets for a-week learning activities	Implementation and action	The implementation of e-student worksheet in the 2020/2021 of odd semester reached 80%



Figure 5. Competency-based student worksheet preparation training

In delivering material to participants, the service team used e-modules that had been prepared previously. This e-module is a learning resource which eased the participants to comprehend and improve their ability to compose student worksheet (Nisa et al., 2020). The purpose of compiling this e-module is to: (a) simplify and clarify the presentation of learning messages; (b) anticipate the limitations of space, time, and memory, both trainees and instructors; (c) increase the learning motivation of the trainees; (d) guide self-study; (e) measuring and evaluating learning outcomes; and (f) become a reference to improve capabilities (Wijaya & Iriani, 2020).



Figure 6. E-student worksheet preparation training

After listening to the presentation of the material, teachers practiced to compose e-student worksheet by referring to the previous paper-based student worksheet they have made. However, this e-student worksheet has been improved, both in terms of systematics and substance. Systematic improvement refers to the opinion of Sari et al. (2017) which stated that the elements in the student worksheet include the identity of the student worksheet, learning instructions, learning indicators, supporting information, work steps, and assessment, with the addition of an element at the beginning, namely student identity. The improvement in substance refers to the content of the student worksheet which was referred to learning literacy. Figure 7 shows the example of an e-student worksheet that has been prepared by the teacher.

LKPD 1

Option 1

Nama siswa  
Jawaban Anda

Kelas  
Jawaban Anda

Berikutnya

Figure 7. Section 1 of teacher's e-student worksheet



In general, the e-student worksheet composed by teachers consisted of four parts. The first part (Figure 7) contained of student's identity. This student identity included name, class, and absentee number. This serves to make it easier for teachers to check student work and served as the attendant list check at the same time.

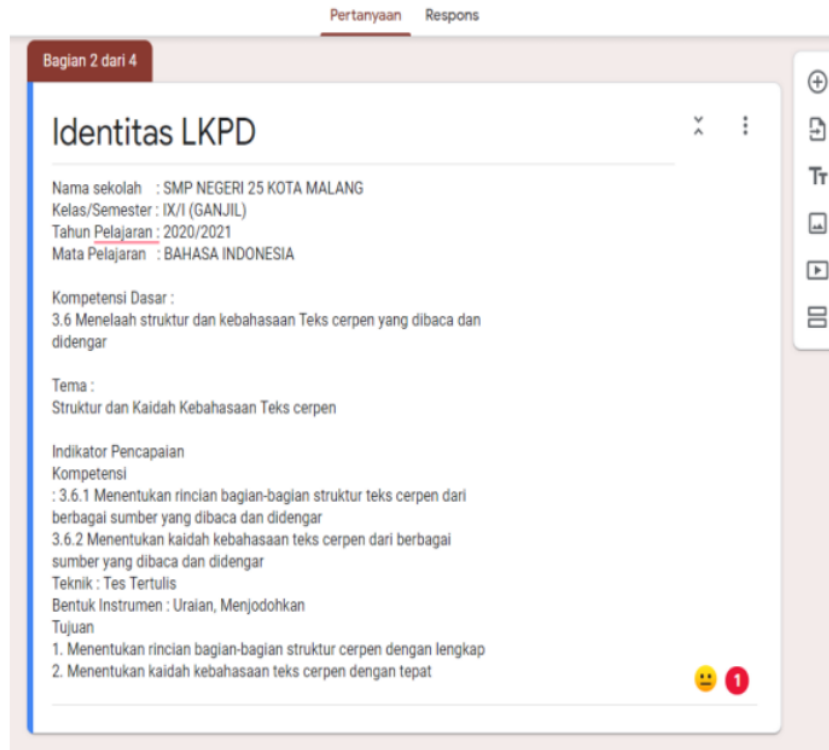


Figure 8. Section 2 of e-student worksheet

Section 2 (Figure 8) contained of the identity of the student worksheet. The identity of this student worksheet comprised of school name, class and semester, academic year, subjects, basic competencies, themes, and indicators of competency achievement. This section provided information about the materials they will learn in certain subject. Section 3 (Figure 9) contained of study instructions. From these learning instructions, students are able to understand the detail activities they must do.

Section 4 (Figure 10) comprised of materials and exercises. In this part, teachers can put the link of the learning video that they have uploaded on Youtube. Teachers can also display the text that must be analyzed along with guiding analysis questions as shown in Figure 10. The combination of text, images, and animations makes the e-student worksheets are more interesting and makes the learning process more interactive (Jazuli et al., 2018). In this section, teachers can design the steps that students must go through in constructing their knowledge systematically. In the fields presented, students can write down the results of their work on each learning experience or task according to their respective learning trajectories. The learning trajectory of each student is reflected in the work track or evidence recorded at each work step in the student worksheet (Rosidah et al., 2021). In addition, the application of e-student worksheet has indirectly been able to improve students' abilities in mastering the Internet of Things, Operational Technology, and Information Technology, so that later they can produce graduates who are skilled and competitive in mastering data literacy as a form of finding learning resources (Widyanto et al., 2020).

After the training activities, the community service team assisted in the preparation and implementation of e-student worksheet. Mentoring activities were carried out online via email and WhatsApp. Participants submitted their e-student worksheet links to get feedback from trainers. The results of e-student worksheet preparation showed an increase of the e-student worksheet in term of its quality. Previously, teachers compiled student worksheet with various systematics, with substance that was more directed to questions taken from the internet, but, after the training conducted, teachers could compile e-student worksheet with competency-based systematics and substance. Although it is not 100%, yet teachers have compiled the materials and/or exercises in their e-student worksheet work steps. Teachers have also used images,

4  
video links, podcasts, and so forth to be added to their e-student worksheet to optimize the attractiveness of the e-student worksheet they compiled as considerable as to achieve student competencies.

Bagian 3 dari 4

## Petunjuk Belajar

1. Masing-masing peserta didik membaca materi yang ada pada bahan ajar dan Buku Siswa halaman 62, 76 – 77 serta menyaksikan tayangan video tentang materi struktur dan kebahasaan pada tautan <https://youtu.be/7bHIWuPUgGw> serta <https://www.youtube.com/watch?v=kM4X1f4a0YU&t=343s>.
2. Membentuk kelompok terdiri dari empat sampai lima orang
3. Setiap peserta didik menentukan stuktur dan kaidah kebahasaan teks cerita pendek
4. Setiap kelompok mengunggah hasil diskusi di Google Form yang sudah disediakan.

Figure 9. Part 3 of e-student worksheet

dirawat. Meskipun, kamu sangat sibuk. Itu sudah tugasmu, Nita. Sekarang, semua kesedihan yang kau alami akibat kesalahannya, kamu tumpahkan kepada Bi Rindi yang tak tahu menahu tentang kucingmu," kata ibunya lembut dan merangkul bahu Nita. Nita pun terduduk. Sambil mengelus mayat si manis, ia berkata, "Maafkan aku, Bi. Aku yang salah..." "Iya, Non. Tidak apa-apa. Bibi juga minta maaf, ya," kata Bi Rindi seraya menyerahkan Pussy kepada Nita. Dan, Nita pun menerimanya. Ia elus Pussy dengan kasih sayang. Semurni dulu waktu ia menemukan si Manis. Dan, sejak itu, Nita selalu merawat Pussy dengan kasih sayang. Sesibuk apa pun dia, ia tak mau mengulangi lagi kejadian masa lalunya yang membuat nyawa si manis hilang. Pikirannya pun melayang menuju masa indahnya bersama si Manis, masa-masa yang membuatnya terharu dan menangis. Kini, setelah setahun sejak kejadian itu, Pussy telah menjadi kucing yang patuh dan menggemaskan seperti si Manis. Nita pun sudah mulai berubah, ia mulai selalu mengasahi peliharaannya, sesibuk apapun dia dan secapei apapun dia. Dikutip dari <https://free.facebook.com/398889196838615/photos/a> dengan perubahan

Tentukan ciri isi dan ciri bahasa teks cerita pendek pada struktur rangkaian peristiwa! \*

Jawaban Anda

Tentukan ciri isi dan ciri bahasa teks cerita pendek pada struktur komplikasi! \*

Jawaban Anda

Tentukan ciri isi dan ciri bahasa teks cerita pendek pada struktur rangkaian resolusi! \*

Jawaban Anda

Figure 10. Part 4 of e-student worksheet

The assistance of e-student worksheets implementation was carried out in the odd semester of 2020/2021. Teachers implemented the e-student worksheets that have been prepared in their class sessions. Previously, students were given a technical explanation of the e-student worksheet use. The results of the observations showed that there were no special obstacles in implementing e-student worksheets. Students showed positive attitude towards the use of e-student worksheet as it is considered more effective. This is in line with the research results of Dermayati et al. (2019) and Zaraturrahmi (2016) which concluded that students had a positive attitude towards e-student worksheets, namely the percentage of student responses to student worksheets was 95%. Students were happy because the e-student worksheet is interesting and allows them to study independently (Zaraturrahmi et al., 2016). Students do not depend on others, set learning goals, diagnose learning needs, have self-confidence and responsibility and carry out self-evaluations (Wati, 2020). What can be improved was the system of providing feedbacks to students.

### Follow Up Plan

The final activity in the implementation of this community service was reflection and a follow-up plan which was carried out in a focused discussion forum. This reflection activity is important to do in order to find out how effective the mentoring activities are in improving teachers' skills in compiling competency-based of e-student worksheet.

The reflection results showed that teachers felt that the training is very useful. According to teachers, the training has improved their understanding on learning literacy, student worksheet in general, and the preparation of e-student worksheet. Furthermore, this training also improves their skills in utilizing technology in learning. This is in line with the report of Sinsuw and Sambul (2017) which stated that information technology-based learning development training is very helpful for teachers in mastering the use of technology in the 21<sup>st</sup> century learning. In 21<sup>st</sup> century learning, teachers are required to be able to integrate ICT in learning by using more attractive media so that students can participate actively and have sufficient space to be creative and independent according to their interests, talents, and psychological development. This is important in order to facilitate students to achieve 4C skills in 21<sup>st</sup> century learning, namely critical thinking, creative thinking, communication, and collaboration. In addition, through this training, teachers are able to improve pedagogic abilities (Myori et al., 2019; Sa'bani, 2017) and improve their performance (Khadijah, 2018).

The obstacle faced by teachers in the preparation of e-student worksheet is the limited time. The training activities which were carried out only during a semester means that teachers did not have enough time to develop e-student worksheet optimally. In addition, the obstacles in implementing e-student worksheet were more technical for students. Some students did not have personal cellphones, the students' quota was limited as not all of them were succeeded to get a student quota. In terms of student independence aspect in completing e-student worksheet and looking for additional references were another constrains.

The results of the above reflection have been basis for the follow-up plan preparation. First, teachers conducted internal dissemination to teachers who have not attended training so that in the next semester the percentage of e-student worksheet usage will reach 100%. In addition, teachers will conduct dissemination in the MGMP forum. Second, schools hold workshops on the preparation of e-student worksheet before the next semester learning is conducted so that teachers have enough time to prepare their e-student worksheet. Third, in the preparation of the e-student worksheet, teachers provide additional links as references for students. This is in line with the view of Astuti and Setiawan (2013) which stated that e-student worksheet is not the only source of student learning, so teachers should advise students to read other relevant sources. Fourth, additional training and assistance activities are needed in the management of technology-based learning. This is because mastery of technology is a complex skill, so there is a need for continuous guidance (Yantoro & Idrus, 2020).

### CONCLUSION

Assistance in the preparation of competency-based e-student worksheet at SMPN 25 has been carried out with 13 participants consisted of teachers and school principal. The results of the activity showed that there was an increase in teacher understanding in learning literacy and the preparation of student worksheet. Teachers have also been able to develop competency-based of e-student worksheet and implement it in their classroom in the odd semester of the academic year 2020/2021.

### ACKNOWLEDGEMENT

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