Training on Making HOTS Questions with WQC Application in Merauke District

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A r t i c l e

A b s t r a c t

The use of question instruments as an evaluation tool in junior and senior high schools in the Merauke District is still based on paper and pencil, using multiple choice and essay types. It is not the expected output for 21st-century learning. Seeing these conditions, the service team conducts a training program for making HOTS-based question instruments with the WQC application to help improve teachers' abilities in compiling HOTS-based questions. The training is carried out offline in two sessions with 30 teachers as participants. The first session of the meeting provides material regarding procedures for compiling good-quality questions and HOTS. In the second meeting, the speaker gives a tutorial on using the WQC to collect computerized evaluation questions. The training results show that 1) teachers can compose HOTS-based questions using the *WQC* application, and 2) teachers are enthusiastic about participating in the training. Teachers' enthusiasm can be seen from the percentage of their responses calculated by the Likert scale, with the results obtain at 87.78% for the first-session presenters, 86.15% for the second-session presenters, and 84.40% for the use of the *WQC* application.

Keywords: HOTS; Softskill; Software; Wondershare Quiz Creator

Introduction

Assessment is an essential part of learning activities. Improving the quality of education can be seen in the quality of learning and assessment. Knowledge is said to be of good quality if the assessment results are promising (Mardapi, 2022). Learning outcomes are assessed to measure the depth of the material provided by the teacher during learning activities while measuring the students' success in mastering the material given. Thus, teachers need assessment instruments to evaluate learning activities. A good assessment instrument is one that meets the criteria of a good question, namely being valid and reliable. In addition, the questions created can also measure students' abilities specifically and representatively or represent the abilities of students, either high, medium, or low, and can be used practically (Arifin & Ratu, 2018; Arifin & Retnawati, 2017). Teachers often use two types of assessment instruments, namely descriptive tests and objective tests (multiple choices). Currently, we are in 21st-

century learning. The 2013 curriculum used at present is based on the independent learning curriculum, where students are required to have high cognitive abilities such as being creative, critical, logical, and systematic (P. H. Pratiwi *et al.*, 2017). Therefore, the teacher has a task to explore students' abilities by becoming a professional teacher in compiling and conducting assessments. Teachers must also master the abilities and skills needed to teach students how to write essays that can measure their reasoning power at a high cognitive level (HOTS). HOTS is the result of 21st-century learning in the form of critical thinking skills, problem-solving or the process of finding a problem, and skills in creative thinking (Sa'adah *et al.*, 2019). HOTS is also essential for teachers as educators since the indicators contained in HOTS are based on the current learning curriculum, namely independent learning, which promotes independent, active, and creative learning activities for students. Hence, with their HOTS ability, teachers can master the learning given to students. The independent learning curriculum can be applied correctly to achieve competency achievement indicators optimally.

In 21st-century learning, teachers should not rely on questions that are dominated by only remembering (C1) and understanding (C2) indicators or lower-level thinking skills (LOTS). Actually, the compiled questions should meet the HOTS criteria, namely analyzing (C4) a problem. Students can evaluate (C5) the causes of the pain and finally create (C6) solutions to existing problems (Magdalena *et al.*, 2020; Nafiati, 2021). Assessment instruments are usually used in printed form, but over time, they have also taken advantage of information technology (ICT), as can be seen from the growing development of computer-assisted online exams, one of which is the implementation of the National Examination. Utilizing computer-based assessment instruments is more effective than using paper and pencil (V. Pratiwi, 2016). In the era of Society 5.0, people's lives are centered on technology. The rapid development of technology has an impact on the world of education. It also aligns with previous research on needs analysis regarding training in developing multimedia learning, especially on evaluation questions (Fitriyani & Astuti, 2022).

Media development, both in teaching materials and evaluation tools, is urgently needed for teachers, especially junior high school teachers, to make learning activities more interactive and time-efficient in correcting questions. It can be seen clearly by the number of computer devices increasingly developed and used as learning media, one of which is developing evaluation instruments (Salsinha *et al.*, 2022). Many learning media have been designed to support the continuity of learning activities, one of which is the application of an ICT-based assessment instrument, namely Wondershare Quiz Creator (Setiawan *et al.*, 2021). This developed software has a variety of storage options and offers several advantages, including 1) more effective and efficient assessment, 2) user-friendly app, 3) minimizing humanerror, 4) randomized questions and answer options to reduce cheating in exams, 5) determining time allocation, 6) evaluation results or assessment scores can be directly viewed for corrections, and 7) the results obtained have high accuracy because corrections are carried out automatically using a computer (Meryansumayeka *et al.*, 2018; Pongkendek & Kristyasari, 2021; Setiawan *et al.*, 2021; Yusuf *et al.*, 2022).

Rework or exams using Wondershare Quiz Creator can be done in two ways: offline and online. If the work is done online, the value recapitulation results will be sent directly via the teacher's email. Therefore, with the advantages of this software and its ease of use, the authorsconducted training on preparing HOTS questions with the Wondershare Quiz Creator application (Yusuf *et al.*, 2022). This training is expected to improve teachers' abilities and skills in compiling HOTS-based questions and provide insight for teachers in making innovative and fun learning evaluation tools for students. It aligns with research several people have conducted on developing assessment instruments using the Wondershare Quiz Creator. The development of an assessment instrument based on Wondershare Quiz Creator is considered effective in the selection of high school entrance examinations and is appropriate, valid, and practical to use as an assessment instrument (Candra Rolisca & Achadiyah, 2014; Dafitri, 2017; Kholifah & Rubhiyanti, 2018; Meryansumayeka *et al.*, 2018; Setiawan *et al.*, 2021; Yusuf *et al.*, 2022).

HOTS-based question preparation training using the Wondershare Quiz Creator application was carried out for teachers and tested on students with the help of three students involved in the training activities. The hope is that students can also learn about the Wondershare Quiz Creator assessment instrument to improve their soft skills in dealing with digitalization, which is growing in the era of society 5.0.

Research Method

Community service activities conducted in SMP Negeri (public junior high school) and aimed at three teachers in Merauke Regency were implemented in four stages, as presented in Table 1 below.

Table 1
Service Activity Stage

Program in Each Meeting	Achievement of Indicators of Success	Activity Progress Notes
Preparation	Explore partner school problems related to the evaluation questions	Partner schools still use ordinary evaluation questions with a paper and pencil system, not HOTS.
Implementation	The activity was carried out in two sessions	Participants can choose KKO on the HOTS criteria in the question indicators and enter evaluation questions into the WQC application
Monitoring	Monitoring the questions' indicators following Bloom's Taxonomy indicators of the HOTS question.	The trainees can make HOTS-based evaluation questions following the KKO Bloom's Taxonomy.
Evaluation	The trainees can make HOTS-based questions correctly and enter evaluation questions into the WQC application.	The evaluation questions made by the trainees already use the question indicators with KKO HOTS criteria and have been included in the WQC application

Based on the data presented in Table 1, the service team describes each activity stage as follows: the first stage is preparation. The preparations include identifying the problems junior high school teachers face in this era of globalization, especially the generation of society 5.0; specifying the number of junior high school teachers who participated in the training; and identifying the test instruments for learning evaluations. The team coordinated with the school as a partner and the organizer of this training activity.

The second stage is implementation. This activity was implemented online and divided into two meeting sessions. In the first session, resource persons providedmaterial regarding the procedures for compiling good=quality and HOTS-based questions. Then, participants were asked to collect HOTS-based evaluation instrument questions according to each participant's field of knowledge. Furthermore, the resource person assisted the participants in compiling the HOTS-based questions. In the second session, the resource person gave a tutorial on how to use the Wondershare Quiz Creator Software application. This software application was pre-installed on every computer in the IT laboratory. The resource persons guided the participants to try using the application by selecting the type of multiple-choice test to be used and then filling in the questions to be tested on students. The questions filled in the Wondershare Quiz Creator software were prepared as HOTS-based questions, which were already done at the first session meeting.

The third stage is monitoring. The team carried out this stage to monitor and check the effectiveness of using the Wondershare Quiz Creator software application and determine whether it was used correctly or if there were problems. In addition, it also looked at the resultsof the preparation

of HOTS-based questions that the participants had carried out before and checked whether or not they met the criteria of good questions according to the C4-C6 Competency Coverage criteria (Azura *et al*., 2020).

The fourth stage is the last stage where theservice team evaluates all activities that have been carried out. The evaluation was carried out twice.First, the assessment was carried out with the internal service team. Second, the review was conductedwith participant feedback through a training participant response questionnaire. The participants' responses were assessed using a feedback questionnaire that was divided into three response categories: responses to presenter 1, reactions to presenter 2, and software answers. The percentage of training participants' response results was based on the grouping carried out by (Riduan & Sunarto, 2014) as shown in Table 2.

Table 2
Response Grouping

%	Description
85-100	Very good
69-84	Well Enough,Not good
53-68	Awful
38-52	
0-37	

The procedure or flow of community service activities is illustrated in Figure 1 below.
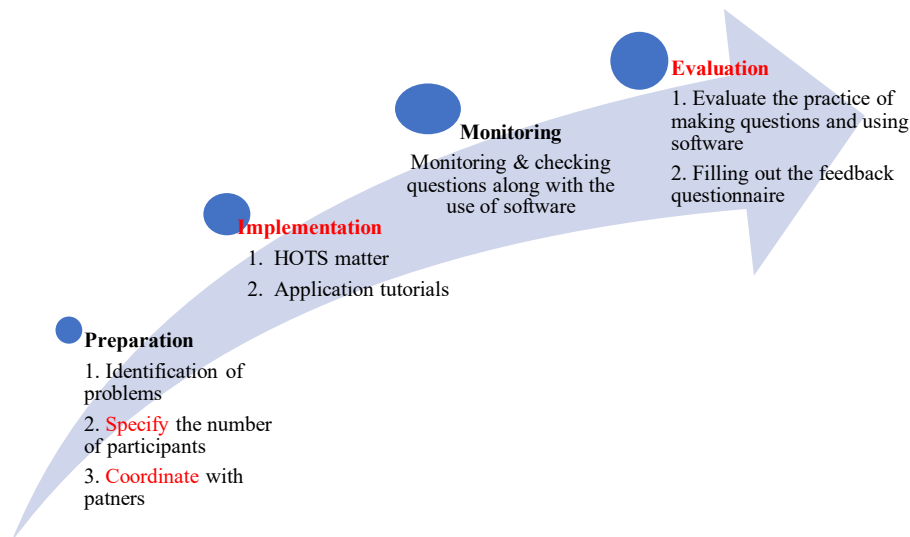

Figure 1. The Flow of Training Activities

Results & Discussion

This service activity was carried out on September 19 and October 21, 2022; the first day lasted 6 hours and was divided into 2 meeting sessions. The first session lasted for 3 hours, from 9:00 to 11:00 WIT. In this delivery session, teachers, as training participants, were asked to practice compiling HOTS-based questions being taught according to their field of knowledge. In preparing HOTS-based questions, several teachers were still confused about determining competency indicators and Operational Verbs (KKO) included in HOTS. So they asked a lot of questions related to how to choose KKO that had HOTS; at the same time, they shared experiences that at that school, teachers very rarely applied HOTS questions during exams.

Figure 2. First Session Training

Knowledge and the ability to make HOTS-based questions are crucial for a teacher, especially in society 5.0. Higher-order thinking skills (HOTS) are needed in 21st-century learning. Teachers mustbe able to develop and apply HOTS-based questions to improve the quality of students' thinking, suchas problem-solving, decision-making, and critical and creative thinking skills (I. Pratiwi *et al*., 2021).The questions included in the HOTS criteria are questions that can measure students' ability to analyze (C4) problems or case studies given by the teacher, evaluate (C5) the factors that cause these events, and create (C6) something as a form of solution to these problems (M.Yani, Bekti Suroso, 2019; Manurung *et al*., 2021; Rafli, 2021). So that in this way, participants can think logically, systematically, critically, and creatively.

The second session lasted for three hours. The first hour of 11.00–12.00 WIT contained presentations by speakers about tutorials on how to use the Wondershare Quiz Creator Software application. Furthermore, for the remaining 2 hours, from 13.00 to 15.00 WIT, participants practiced the Wondershare Quiz Creator Software while guided by resource persons and the community service team. In this functional activity, participants try to set up the application according to the subject's needs, the number of questions, the identity students must fill in, and the system used (offline or online). Next, participants began to choose the type of test used, such as multiple choice. After that, the participants started to enter questions made in the first session, namely HOTS-based questions, in the Wondershare Quiz Creator Software application. The final step is that the questions are finished and ready to be tested, uploaded, and stored in the computer folder.

Figure 3. Practice Participants Use the Wondershare Quiz Creator

The results of practice with participants using the Wondershare Quiz Creator Software application can be stored on both online and offline systems. If the system is stored online, students can work on the questions later through the website or open them using Firefox. However, if the

questions are kept offline, students can work on them via a PDF stored in the exam folder. There are several advantages offered by the Wondershare Quiz Creator Software. In addition to being practical in use or user-friendly (Setiawan *et al.*, 2021) and reducing the use of paper or paperless, this application also makes it easier for teachers to give assessments. It is because the scoring in each question can be set in this software. It means that when students finish working, the scores obtained will immediately appear. Another advantage is that each question and answer option can be randomized to minimize the possibility of students copying other students' work. Wondershare Quiz Creator software has been widely used as a media display for student exams, daily tests, midterm exams, and final semester exams (Iqbal *et al.*, 2018; Sa'adah *et al.*, 2019).

Wondershare Quiz Creator software is very appropriate to be applied in the era of Society 5.0, as this new era focuses on humans with a technological base. In other words, humans can solve various social problems and challenges by utilizing multiple innovations from the previous generation, namely the Industrial Revolution 4.0, centered on technology. Thus, using learning media, one of which is the Wondershare Quiz Creator Software, can improve students' digital literacy abilities and direct them to be more active in exploring existing problems and findings. This training also enhances a similar activity regarding developing evaluation instruments using online media. Previous research was limited to evaluation questions in general and using the Google Form, where this platform still has some drawbacks, one of which is that it can only be accessed online. For this reason, our community service team conducts training on developing HOTS-based evaluation questions with the WQC application (Fitriyani & Astuti, 2021). By keeping up with the times, 21st-century learning can be designed to build the character of students who are more prepared to face the era of education in society 5.0 (Pihung & Padmawati, 2022).

Monitoring and evaluation are service activities carried out on the second day, October 21, 2022. Monitoring was conducted to examine the performance of the WonderShare Quiz Creator Software and whether there were problems or not. In addition, it also observed the participants' progress in compiling HOTS-based questions and checked if the HOTS-based questions that had been prepared fulfilled the good criteria or not. The final stage is evaluation. The evaluation was carried out by presenting the work of representatives of two teacher participants, submitting the final project in the form of a HOTS-based question training product that had been uploaded in the WonderShare Quiz Creator Software, and filling out the participant's response questionnaire. This evaluation activity also closes a series of community service training activities. The training program was completed by the Principal of SMP Negeri 3 Merauke, Mr. Simon L. Holenger, S.Pd., M.Pd. The results of the participant response questionnaire can be seen in Table 3.

Table 3
Participants' Responses Questionnaire Results

Category	Total Response Score	% Response
Speaker 1	1185	87.77
Speaker 1	1163	86.14
WQC Application	633	84.4

The results of Table 3 show that the training participants responded excellently to the implementation of this community service activity. The results obtained from the participant response questionnaire for Speaker 1 were 87.77%, 86.14% for Speaker 2, and 84.4% for Wondershare Quiz Creator Software. These three categories are included in the excellent criteria. So, it can be said that this service training was successfully carried out since it achieved the expected goals: 1) participants could compose HOTS-based questions following the guidelines for writing HOTS questions and had met the criteria for good questions; 2) participants could utilize the Wondershare Quiz Creator Software application as a medium display for learning evaluation activities, making it easier for teachers to make corrections and also user-friendly; and 3) the responses given to the service team during the training activities were very good, as seen from the results of the response questionnaire.

Figure 4. Evaluation of Community Service Activities

Conclusions

Based on the evaluation results carried out by the service team and partners, it can be concluded that: 1) this training can provide additional knowledge, skills, and understanding of teachers in compiling and writing HOTS-based questions following the stages based on guidelines for writing HOTS questions provided by the service team, 2) teachers have been able to use the WonderShare Quiz Creator Software application as a medium in learning evaluation activities for either daily tests, midterms, and final semester exams, 3) participants were enthusiastic during training activities, and 4) questionnaire results from participants' responses were excellent, as seen from the three categories given that obtained a percentage above 80%. From the results of the conclusions above, the advice givenas a follow-up to this activity is that the school must form a unique work team to make HOTS-basedquestion instruments with various subject teachers as representatives. Thus, the results of this training can be implemented for students as a form of learning evaluation, and the resulting output is not only learning outcomes but also the HOTS abilities of students.

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