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The Effectiveness of "Sipentik" as an Authentic Assessment Application and for Increasing Student IT Literacy

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Abstract

MTs and junior high school teachers in Rowosari Kendal District have difficulty carrying out authentic assessments manually because the components being assessed and the number of students to be observed are not small, and it takes a lot of time and effort, and they are prone to errors or omissions in the assessment. In addition, they are aware that the assessment is still centered on the cognitive aspects of students through learning achievement tests, while the assessment of attitudes and skills is only at a glance without using assessment instruments. In addition, teachers must address technological developments that are increasingly accelerating and it is important to increase students' IT literacy. One of the potential learning methods to help teachers in authentic assessment and improve IT literacy is by implementing the Sipentik application. The purpose of this research is to describe and analyze the characteristics of Sipentik as an authentic assessment application for teachers and the effectiveness of the Sipentik application in the teaching and learning process in schools. This type of field research uses a mixed methods approach with an embedded experimental model design, with data collection techniques through documentation, questionnaires, observations, and interviews. The data that has been collected can then be analyzed through quantitative and qualitative data analysis. The results of the study show that: 1) "Sipentik" as an authentic assessment application for teachers has the characteristics of this internet-based application with its main feature being technology for authentically assessing students, besides that it can also help teachers manage the learning system in class more easily and directed, also makes teachers more able to improve IT literacy.

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INTRODUCTION

Natural Sciences is a branch of science that originates from natural phenomena. Natural science is defined as systematic knowledge and is compiled by connecting natural phenomena that are material in nature and based on the results of observation and induction. Science is essentially learning with an approach that includes four main elements which include four elements, namely products, processes, applications and attitudes. These four main elements of science should appear in science learning. Science learning is expected to be a vehicle for students to learn about themselves and the environment, and apply it in everyday life (Kemendikbud, 2017).

Science learning to be continuous between input and output requires a form of assessment to find out changes in student behavior including knowledge, skills, understanding, attitudes, skills and so on, a teacher needs to carry out activities to assess the results of student learning experiences. Therefore assessment as a central point in the teaching and learning process. The function of the assessment is to improve learning programs and help students to realize themselves in developing their behavior and encourage student learning motivation, namely by recognizing their own progress and stimulating them to make improvement efforts if some weaknesses and failures are found. The assessment used by the teacher is an authentic assessment that is rooted in the learning process and as a feedback process flow. Abidin (2012) states that authentic assessment is the most important channel because the use of authentic assessment will include the selection of teaching materials and learning models. Authentic assessment guides learning through the creation of various learning activities carried out by students during the learning process . Authentic assessment provides a real picture of students' ability to read and provides a measure of the achievement of student character development. The use of authentic assessment will contribute to increasing students' understanding and development skills (Abidin, 2012).

Authentic assessment is an activity assessing students that emphasizes processes and results with various assessment instruments that are tailored to the demands of competence in competency standards or core competencies and basic competencies. Authentic assessment refers to the achievement of learning outcomes based on the score obtained against the ideal score, not compared to other students. In an authentic assessment the teacher evaluates basic competencies, core competencies and graduate competency standards (Kunandar, 2014).

However, in a preliminary study in the form of interviews and observations with MTs and SMP teachers in Rowosari Kendal District, it showed that teachers had difficulty carrying out authentic assessments manually because the components being assessed and the number of students to be observed were not small, and it took a lot of time and effort, and prone to errors or omissions in the assessment. In addition, they are aware that the assessment is still focused on the cognitive aspects of students through learning achievement tests, while the assessment of attitudes and skills is only at a glance without using assessment instruments.

The application of technology in education and learning is a form of innovation that aims to balance and keep up with the times (Sudibjo, 2019). Another consideration behind it is the student factor which is far different in its characteristics when compared to before. Students are no longer interested in the teacher-centered learning process, but are more interested in something new that is oriented towards their own discovery process (Setiawan et al. 2015).

Indirectly, the role of IT will assist students in using technology to obtain and explore other additional information from the internet, process and apply it in life. These activities can be interpreted as IT literacy. IT literacy is indeed needed for individuals in the internet-based and digital 21st century. According to the Ministry of Education and Culture (2017), there are several skills that must be possessed by the world community, namely basic literacy, competence, and character. For students and educators, one of the basic literacy that must be mastered as capital in their lives is digital literacy (IT), literacy is defined as the ability to read (comprehensively) and write (invent, design, and produce). Thus it can be said that literacy moves from simply recognizing (recognizing) and comparing (comprehending) information to a higher level, namely the ability to think critically implicitly in questioning, analyzing,

evaluating information then designing, creating and creating new information in a form or format. different.

ETS (2012) defines ICT literacy as the ability to use digital technology, communication tools and networks appropriately to solve information problems in order to function in an information society. ICT literacy includes the ability to use technology as a tool to research, organize, evaluate and communicate information, and have a fundamental understanding of the ethical/legal issues surrounding information access and use. Specifically Ali et al. (2010) mentions seven elements of IT literacy , namely: define, access, evaluate, manage, integrate, create , and communicate.

Teachers as the main actors of education should not close their eyes. Teachers must be smarter and smarter than their students in responding to the rapid development of technology. Don't let a teacher not master technology, considering that students are more familiar with the world of technology and communication. Teachers who are clueless (technologically illiterate) will lower their credibility in front of their students so that students tend to underestimate them, as if the teacher is an idiot in the middle of a metropolitan world. This is a phenomenon that often exists and occurs around us. Teachers may be products of the 90s, but their scientific capacity must not be inferior to the competition of the times (Tarigan , 2019) .

One of the learning methods that has the potential to help teachers in authentic assessment and improve IT literacy is by implementing the Sipentik application. This Sipentik application is the first application developed by Semarang State University lecturers. This internet-based application, in addition to its main feature as a technology for authentically assessing students, can also assist teachers in managing the learning system in the classroom more easily and purposefully, as well as making teachers more able to improve IT literacy. Teachers, students , and parents can access this application using a username and password . The features contained in Sipentik allow teachers, students, and parents to obtain information regarding academic and non-academic activities, student development, and as a place for online consultation . In addition, students can also learn by watching videos or simply reading material previously uploaded by the teacher, doing and submitting assignments, seeing grades and reviewing answers (feedback). Based on research conducted by Nurahman (2020) stated that the ICT-based authentic assessment instrument that was developed was feasible and effective for measuring students' cognitive competence, communication skills, and empathetic attitudes in learning the Theme of Things Around Us in Class V SD Gugus Bawana Ageng

SMPN 1 Rowosari has facilities and infrastructure that are able to support and support learning by using the Sipentik application with the availability of computers, LCD projectors, and internet signals (WiFi). So that the use of the Sipentik application is effective in authentic assessment and IT literacy by teachers. Technology that is integrated with the assessment process such as the Sipentik application is a strategy for achieving learning objectives that can increase efficiency and effectiveness as well as the quality of learning (Ameen et al., 2018; Winarni et al., 2016) . ICT-based assessments such as the *Sipentik* application are said to be effective because they offer opportunities to support assessment formats that can capture competencies and skills that are difficult to assess so that they are more accurate in conducting assessments (Redecker & Johannessen, 2013) . ICT-based assessments such as the *Sipentik* application are said to be of high quality because they can stimulate students' attention and understanding, arouse student motivation and learning performance, and help make it easier for students to find scientific principles in accordance with students' real lives (Ashari et al., 2016; Dewi, Nugroho, & Sulhadi, 2015; Winarni et al., 2016) .

METHODS

This research is included in the type of mixed methods research with an embedded experimental model design embedded experimental model 1 design to see the level of effectiveness of the sipentik application in the teaching and learning process in schools using a pre-test and post-test control group quasi-experimental design. In this study, the emphasis is on quantitative and qualitative as supporting data to describe Sipentik's characteristics as an authentic assessment application for teachers, students' IT literacy . This research was divided into

3 main stages, namely the pre-research stage, the research stage, and the data analysis stage. The focus of this research is the subject in this study. The research subjects were teachers and students who used Sipentik, namely teachers and students at SMPN 1 Rowosari. The data sources in this study were questionnaire answer sheets and students' IT literacy checklists. Based on the data on the results of the questionnaire answer sheets and students' IT literacy checklists, interviews with teachers and students will describe Sipentik's characteristics as an authentic assessment application for teachers and students' IT literacy skills. The population in this study were teachers and IT literacy students. Selection of the sample of students using cluster random sampling technique. The sample in this study was IT literacy class VIII students as an experimental class, namely the class that was subjected to learning and assessment using Sipentik. The research data were obtained through the documentation method, the questionnaire method, the interview method and the observation method, while the research instruments were in the form of teacher authentic assessment questionnaire sheets and students' IT literacy, observation sheets of students' IT literacy, and interview guidelines. After the data is obtained then analyzed using quantitative analysis and qualitative analysis. Quantitative analysis was carried out using the *one group pretest-posttest design* , homogeneity test, normality test, analysis of students' IT literacy observations, and effectiveness test (mean difference test), while qualitative analysis was carried out to describe data descriptions of participants' authentic assessment and IT literacy. students, as well as a description of the characteristics of "Sipentik" as an authentic assessment application for teachers and the learning process is carried out in a descriptive qualitative manner which refers to inductive data analysis.

RESULTS AND DISCUSSION

A. Quantitative Research Results

Questionnaire Homogeneity Test and observation of IT literacy of Rowosari 1 Public Middle School students

The researcher tested whether the data from the questionnaire was homogeneous or not using the SPSS program from the IT Literacy questionnaire data presented in Table 1 as follows:

Table 1. Homogeneity Test

Test of Homogeneity of Variances

Levene Statistics	df1	df2	Sig.
,259	1	26	,615

Based on the SPSS output above, it is known that the significance value is 0.615 > 0.05 , meaning that IT literacy has the same or homogeneous variance. The researcher tested whether the data from the observations were homogeneous or not using the SPSS program from the IT Literacy questionnaire data presented in Table 2 as follows:

Table 2. Homogeneity Test

Test of Homogeneity of Variances

Levene Statistics	df1	df2	Sig.
2,827	1	26	,105

Based on the SPSSS output above, it is known that the significance value is 0.105 > 0.05 , meaning that IT literacy has the same or homogeneous variance.

IT Literacy Normality Test for SMP N 1 Rowosari students

The normality test aims to test whether in the regression model, the residual variables have a normal distribution. As it is known that the t and F tests assume that the residual values follow a normal distribution. If this assumption is violated, the statistical test becomes invalid for a small sample size (Ghozali, 2013: 160-165). More details can be seen in Table 3 as follows:

Table 3. IT literacy normality test

One-Sample Kolmogorov-Smirnov Test

		Experiment	Control
N		14	14
Normal Parameters [a.b]	Means	68.43	62.64
	std. Deviation	7.988	7.801
Most Differences	Extremeabsolute	. 173	.238
	Positive	.141	.238
	Negative	-.173	-.134
Test Statistics		. 173	.238
asymp. Sig. (2-tailed)		. [200c.d]	. [130c]

a. Test distribution is Normal.

b. Calculated from data.

c . Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Based on the results of the calculation above, it is known that the IT literacy of control class students has a value of *sig* = 0.130 which means more than 0.05 or it can be concluded that the group

has a normal distribution of data. The IT literacy variable for the experimental class has a *sig* = 0.200, which means more than 0.05, which means that the group has normal data distribution.

IT Literacy Observation Results

Analysis of the results of observations of students' abilities was carried out to measure students' IT literacy. Attitude measurement is carried out in each study and assessment using Sipentik. The results of observations of student attitudes were analyzed using the formula:

$$\text{Persentase (x)} = \frac{\text{skor yang diperoleh}}{\text{skor keseluruhan}} \text{x } 100\%$$

The results of the analysis of student attitude assessment are then converted to the assessment criteria presented in Table 4 below:

Table 4. Assessment Criteria

Percentage	Predicate	Criteria
93 ≤ P ≤ 100	A	Very good
84 ≤ P ≤ 92	B	Well
75 ≤ P ≤ 83	C	Pretty good
< 75	D	Need guidance

The results of the IT Literacy assessment of students in the control group and the experimental group can be seen in Table 5 as follows:

Table 5. Observation Results of IT Literacy Students of SMPN 1 Rowosari Control Class and Experiment Class

No	Control Class	Experiment Class
1	80	91
2	83	98
3	77	82
4	77	91
5	80	89
6	74	85
7	78	91
8	72	85
9	72	81
10	81	98
11	84	77
12	79	80
13	78	90
14	86	89
Average	78.6	88

Table 5 above shows that from the observations it is known that the IT literacy of students who use Sipentik is on average better than the IT literacy skills of students who do not use Sipentik.

Analysis (mean difference test)

The average difference test is used to find out the differences in students' authentic assessment and IT literacy, during the pre-test and post-test .

H_o : $\mu_1 \leq \mu_2$ (The average post test for authentic assessment and IT literacy of experimental class students is less than the same as the control class

H_1 : $\mu_1 > \mu_2$ (The average post test assessment of authentic and IT literacy of experimental class students is more than the same as the experimental class)

a. Analysis of the effectiveness of teacher Authentic Assessment tests

Based on the test of differences in average data (via post test) obtained t_{count} = 4.164 t_{table} significance level of 5% (14 + 14 - 2) = 26 = 2.056 . In analyzing the Anava test, the SPSS Version 22 assistance program was used which is presented in Tables 6 and 7 as follows:

Table 6. Test of Differences in Authentic Assessment of Rowosari 1 Public Middle School teachers

Group Statistics					
	Class	N	Means	std. Deviation	std. Error Means
Teacher Authentic Assessment	Experiment	14	72.21	3.620	.967
	Control	14	62.64	7.801	2.085

Table 7. SPSS Results of the Test for Differences in the Authentic Assessment of SMP N 1 Rowosari teachers

Independent Samples Test

		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Differences	std. Error Difference
Results	Equal variances assumed	4.164	26	.000	9.571	2.299
	Equal variances not assumed	4.164	18.350	.001	9.571	2.299

Based on the Independent Samples Test output table in the Equal variances assumed section, it is known that the sig (2-tailed) value is 0.000 < 0.05 so that it can be concluded that the hypothesis $H_{0\ is}$ rejected and $H_{a\ is}$ accepted. Thus it can be concluded that teacher's authentic assessment using sipentik is better than using the manual.

b. Analysis of Student IT Literacy Effectiveness Test

Based on the test of differences in average data (via post test) obtained $t_{count} = 8.044$ t_{table} significance level of 5% (14 + 14 - 2) = 26 = 2.056 . In analyzing the Anava test, the SPSS Version 22 assistance program was used which is presented in Tables 8 and 9 as follows:

Table 8. Test of Differences in IT Literacy of Rowosari 1 Public Middle School Students

Group Statistics					
	Class	N	Means	std. Deviation	std. Error Means
IT LiteracyExperiment		14	69.57	4.146	1.108
Students	Control	14	60.14	4.348	1.162

Table 9. SPSS Results Testing Differences in IT Literacy of Rowosari 1 Public Middle School Students

Independent Samples Test						
		t-test for Equality of Means				
		t	df	Sig. (2-tailed)	Mean Differences	std. Error Difference
Results	Equal variances assumed	5.873	26	.000	9.429	1.606
	Equal variances not assumed	5.873	25.941	.000	9.429	1.606

Based on the Independent Samples Test output table in the Equal variances assumed section, it is known that the sig (2-tailed) value is 0.000 < 0.05 so that it can be concluded that the hypothesis $H_{0\ is}$ rejected and $H_{a\ is}$ accepted. Thus it can be concluded that the IT literacy of SMP Negeri 1 students using sipentik is better than not using the sipentik application

B. Qualitative Research Results

Student IT literacy

The IT literacy of the control class students of SMPN 1 Rowosari, has a normal data distribution. This shows that the average student in general has the same ability before the experiment is carried out. The same thing was also expressed by the teacher of SMPN 1 Rowosari who stated that the average student's IT literacy ability is the same because students depart from the same background in mastering IT.

Students need the application of technology in education and learning is a form of innovation that aims to balance and keep up with the times (Sudibjo, 2019). Another consideration behind it is the student factor which is far different in its characteristics when compared to before. Students are no longer interested in the teacher-centered learning process, but are more interested in something new that is oriented towards their own discovery process (Setiawan et al. 2015).

The application of the Sipentik application, which is an internet-based application, apart from its main feature as a technology for authentically assessing students, can also assist teachers in managing the learning system in the classroom in an easier and more directed manner, as well as making teachers more able to improve IT literacy. Based on the results of observations and answers to student questionnaires, it is known that the IT literacy of Rowosari 1 Public Middle School students who use Sipentik is on average better than the IT literacy abilities of students who do not use Sipentik and the assessment results show that the IT literacy of Rowosari 1 Middle School students using Sipentik is better than don't use the sipentic application.

Based on the results of interviews with students of SMP N 1 Rowosari who do not know the Sipentik application and operate the Sipentik application, they do not know the benefits of the Sipentik application and so far their IT literacy skills

are standard. Whereas students who have used the Sipentik application such as students of Rowosari 1 Public Middle School stated that the Sipentik application is an application that is used to work on questions, it is very easy to just click on it but earlier I was confused to continue with the next question, the picture is clearer so it's easier to work on the problem so that it makes it more understandable regarding the assessment system, IT literacy has increased because cellphones are usually used for WA, play games now to work on questions, are more able to work on questions, save questions using cellphones, there has been an increase in learning outcomes obtained after using the sipentik application, and broaden insight into applications using cellphones , the only problem is that the memory is full, so you need to install the Sipentik application again.

The Sipentik application in general has been able to provide students with an overview of the assessment system and answer questions so that it provides benefits in increasing students' IT literacy skills. The features contained in Sipentik allow teachers, students and parents to obtain information regarding academic activities. In addition, students can also learn to work on sample questions that have been uploaded by the teacher before, see grades and review answers (feedback).). Based on research conducted by Nurahman (2020) stated that the ICT-based authentic assessment instrument that was developed was feasible and effective for measuring students' cognitive competence, communication skills, and empathetic attitudes in learning the Theme of Things Around Us.

This is supported by research conducted by Hamid (2016) who developed an ICT-based learning outcome assessment instrument in basic electronics learning. The average value of the product design validity of ICT-based student assessment instruments is 88.61 % in a very valid category. Based on the practicality tests that have been carried out, the practicality percentage of the product based on the teacher's response is 82.73 % in the very practical category and the percentage of product practicality based on student responses is 80.69% in the practical category. The results showed that ICT-based student learning outcomes assessment instruments were declared valid and practical to be used as an evaluation tool or assessment of learning outcomes. ICT integration such as the Sipentik application in learning supports the increase in IT literacy needed by students to cope with today's social, economic and educational changes. (Aesaert, Nijlen, Vanderlinde, & Braak, 2014; Febrianti & Susilowati, 2018) .

Sudibjo (2019), Soni et al. (2018), Siddiq et al. (2017), Gunawan et al. (2016), and Dewi et al. (2015). A synthesis was obtained from this research that the ability of students' IT literacy and/or digital literacy is directly proportional to learning that provides interactive learning media or with virtual classroom learning systems (e-learning). Besides that, critical thinking skills, investigative skills, mastery of concepts, and student learning outcomes can be increased.

Sipentik application as a form of ICT-based learning can stimulate student creativity, generate learning motivation, and help facilitate student understanding (Winarni et al., 2016) so that learning outcomes will be boosted and achieve the expected learning objectives (Halidi et al., 2015; Maria & Sediyono, 2017) . In addition, ICT-based learning can build understanding as well as solutions to authentic problems in students' real lives (Dewi et al., 2015) .

Student IT literacy

A teacher needs to carry out an authentic assessment by utilizing IT, because the teacher has difficulty carrying out authentic assessments manually because the components being assessed and the number of students to be observed are not small, and it takes a lot of time and effort, and is prone to errors or omissions in the assessment. In addition, they are aware that the assessment is still focused on the cognitive aspects of students through learning achievement tests, while the assessment of attitudes and skills is only at a glance without using assessment instruments. The characteristics of authentic appraisers are as follows: 1) Can be used for formative or summative. 2) Measuring skills and performance, not remembering facts. 3) Continuous and integrated. 4) Can be used as feed back (Kunandar, 2014). According to Richardson et al. as quoted by Abidin (2013), put forward several characteristics of authentic assessment as follows: 1) Contains a set of important tasks that are broadly designed to represent a particular field of study. 2) Emphasize higher-order thinking skills. 3) Criteria are always given in advance so students know how they will be assessed. 4) Assessment is integrated

into daily curriculum work so it is difficult to distinguish between assessment and learning. 5) The teacher's role changes from conveying knowledge (or even antagonist) to acting as a facilitator, model and friend in learning. 6) Students know there will even be a public presentation of the work that has been achieved so that they will actually do the task. 7) Students know that there will be an examination of both the processes they use in learning and the products resulting from learning. This can be achieved if teachers use ICT-based assessments such as sipentik and it is proven that authentic SMPN 1 Rowosari teacher assessments using sipentik are better than using manuals.

According to Supriyanto, S.Pd teacher at SMPN 1 Rowosari, the sipentik application is an application that is used for authentic assessments, the use of the sipentik application is because it is easier when used for assessing attitudes, performance, knowledge than manuals which require a long time, Sipentik's characteristics as authentic assessment applications for teachers are very easy to use and very helpful when assessing students, especially in assessing attitudes, knowledge and performance, sipentic applications in the teaching and learning process in schools are very effective, and save me more time when giving assessments to students, this application able to analyze data that has been entered in accordance with scoring guidelines, the effective level reaches 90% and scoring while others are usually manual so that it requires a lot of time. The sipentik application saves time, makes it easier for teachers because they don't have to calculate manually, the sipentik application is able to improve IT literacy skills in students because students find it easier to answer questions and save answers using cellphones and students are very enthusiastic about working on questions using the sipentik application via cellphone.

This shows that authentic assessments carried out with ICT -based applications will facilitate authentic assessments carried out by teachers and IT skills that are developed in students in the process of working on questions and knowing assessments directly and indirectly will make students accustomed to using technology and its application work so that it will increase literacy. student IT.

The benefits of the Sipentik assessment system as the development of ICT today can be felt in various areas of life, including in the field of education. One of the benefits of ICT in the field of education is that it provides opportunities and expands interaction between teachers and students so that teachers can get to know the characteristics of students well and can develop students' potential and abilities more optimally (Asy'ari & Gunawan, 2017; Halidi et al., 2015; Hamid, 2016) . In line with this, Koballa & Chiappetta as quoted by Hapsari & Nurcahyanto (2016) explained the benefits of ICT in learning, including:

a. Sipentik assessment systems such as computers and multimedia can help students understand knowledge of both complex concepts and understand objects and events by accessing more complete information.
b. The Sipentik scoring system can also facilitate students to carry out authentic investigations using the scientific method so that students can conclude data in general and as a whole.
c. Students can take advantage of the Sipentik assessment system individually or in groups.
d. Student participation in working together increases, because the Sipentik assessment system facilitates communication between students and also with teachers in learning.

ICT-based assessments such as the Sipentik application are said to be efficient because they facilitate teacher performance in conducting assessments, are economical, environmentally friendly, and reduce time and effort in giving assessments to students with various abilities because they are replaced by ICT systems (Hamid, 2016; Pásztor et al., 2015) . ICT-based assessments such as the Sipentik application are said to be effective because they offer opportunities to support assessment formats that can capture competencies and skills that are difficult to assess so that they are more accurate in conducting assessments (Redecker & Johannessen, 2013) . ICT-based assessments such as the Sipentik application are said to be of high quality because they can stimulate students' attention and understanding, arouse student motivation and learning performance, and help make it easier for students to find scientific principles in accordance with students' real lives (Ashari et al., 2016; Dewi et al., 2015; Winarni et al., 2016) . ICT integration such as the Sipentik application in learning supports the increase in IT

literacy needed by students to cope with today's social, economic and educational changes. (Aesaert et al., 2014; Febrianti & Susilowati, 2018)

In accordance with one of the learning principles in the 2013 curriculum listed in the attachment to the Minister of Education and Culture Number 22 of 2016 , namely utilizing information and communication technology to increase the efficiency and effectiveness of learning. One of the benefits of the *Sipentik* application as an ICT-based assessment in learning is optimizing student assessment activities which are an important and integral component in teaching and learning activities in schools (Hamid, 2016) . The benefits of authentic assessment with the *Sipentik* application as an ICT-based assessment include:

a. The process of assessing student learning outcomes can be done without using paper (paperless) so that it can save the cost of doubling questions, economical, practical, easy, environmentally friendly, accurate and efficient (Hamid, 2016) .
b. Have the opportunity to support assessment formats that can measure complex skills and competencies that are difficult to assess (Redecker & Johannessen, 2013) .
c. Provide teachers with easy-to-use tools to monitor the progress of different student abilities and contribute to the development of effective teaching methods.
d. Can perform automatic score calculations thereby reducing the time and cost of the testing process even though the coding process cannot be fully automated (Pásztor *et al* ., 2015) .

So the Sipentik application in general has effectiveness in the teaching and learning process in schools, both in increasing students' IT literacy and in authentic assessment.

CONCLUSION

Based on the results of the research that has been done and the discussion and analysis, the following conclusions can be drawn: 1). "Sipentik" as an authentic assessment application for teachers has the characteristics of this internet-based application with its main feature being technology for authentically assessing students, also making teachers more able to improve IT literacy. Teachers, students, and parents can access this application using a username and password. The features contained in Sipentik allow teachers, students, and parents to obtain information regarding academic and non-academic activities, student development, and as a place for online consultation. 2) Sipentic application in the teaching and learning process in schools is effective as an authentic teacher assessment application and increases the IT literacy of Rowosari 1 Public Middle School students, rather than using the manual. 3). The teacher's authentic assessment of SMP N 1 Rowosari using the Sipentik application shows that it is better and more effective than using the manual. This can be seen from the average authentic rating of 72.21 which is greater than the average value of manual assessment of 62.64. This can be seen from the average authentic rating of 69.57 which is greater than the average value of manual assessment of 60.14.

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