# **Empowering Teacher in Utilizing ICT-Based Media Through In-House Training (IHT) to Improve Learning Quality**

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**Abstract:** This paper aims at discussing the attempt to improve the quality of learning by empoering teachers in utilizing ICT-based instructional media through in-house training. The subject of this research was the teachers of junior high school. This research was a school action research. The data were obtained through interview, questionnaires, and observation. The data analysis was: (1) data reduction, (2) data presentation, and (3) data conclusion. The results indicated that (a) ICT-based instructional media utilized by the teachers improve the students' average score; and (b) the quality of learning in junior high school improved by utilizing ICT-based instructional media.

Key Words: ICT-based instructional media, learning quality, IHT

Abstrak: Penelitian ini bertujuan untuk meningkatkan mutu pembelajaran dengan memberdayakan guru dalam pemanfaatan media berbasis IT melalui IHT. Objek penelitian yaitu guru SMP sebanyak 42 orang. Penelitian ini termasuk jenis penelitian tindakan sekolah. Data dikumpulkan melalui wawancara, angket, dan observasi. Analisis data mencakup: (1) reduksi/memilih data, (2) display/menyajikan data, dan (3) kesimpulan. Hasil yang diperoleh dari penelitian, yaitu: a) dengan memanfaatkan media pembelajaran berbasis IT mutu pembelajaran dapat meningkat; b) kualitas pembelajaran di SMP meningkat dengan dilakukannya IHT yang dibuktikan dengan meningkatnya capaian rata-rata per mata pelajaran.

Kata kunci: media pembelajaran berbasis IT, mutu pembelajaran, IHT

## INTRODUCTION

The quality of education in SMP Negeri 5 Salatiga still does not meet the set targets. There are deficiencies in some standards, particularly in graduate, facilities and infrastructure, and process standards. In the graduate standard, the quality of output produced has not shown maximum results. Furthermore, in terms of facilities and infrastructure standards, especially in learning media, the facilities owned at SMP Negeri 5 Salatiga are still inadequate. Schools do not yet have a number of learning facilities and media so they do not support the implementation of learning.

In relation to the use of technology-based learning media, SMP Negeri 5 Salatiga has conducted training in utilizing assessment applications. This training was conducted in order to address the implementation of the 2013 Curriculum or K13 which consistes of numerous aspects of assessment. Implementation

of the assessment includes the assessment of knowledge, skills, and attitudes. But this has not been fully supportive in learning. However, a great number of teachers have not been able to use technology-based media in learning for instance: Microsof Word, Microsof Excel, Microsof PowerPoint, and internet applications.

In response to this, the principal took action to conduct training for teachers. The training was carried out in the form of In-House Training with the main goal of mastery of the three applications mentioned above. It aims at supporting learning activities and providing easy access for teachers to provide material to students. In addition, it will be easier to gather students' focus and attention.

Through accessible learning presentation, it expects students' greater understanding and in the end, students' achievement and performance will be improved. As a result of this, the quality of learning in schools will also improve.

## **Quality of Education Improvement**

In the context of education delivered by Roemintoyo (2010), the notion of quality includes three things, namely input, process and output of education.

"Inputs constitutes human resources, equipment, equipment, money, and materials. Output is the performance of the school. Output quality is considered high if it shows high achievements in academic and non-academic achievements (Roemintoyo, 2010)."

The concept of quality of education according to Umaedi and Siswantari (2015) constitutes its suitability with the needs of the community, how fast the graduates gain income or further study, and the ability of students to deal with problems that arise in life.

Based on the above definitions, the quality of education is a picture of the quality of the inputs, processes, and outputs of the education that has been carried out. This conclusion is in accordance with Mulyasa (2009) who believes that the ability of schools to meet the needs of the community in accordance with applicable quality standards also illustrates the quality of education in schools, so it is not only from the quality of graduates.

Qualified educational outcomes is indicated by how they prepare the graduates to acquire output. This advantage can be seen from academic abilities and non-academic abilities (extracurricular). Academic excellence is obtained within the classroom learning by students, while non-academic abilities are seen from various types of skills acquired by students. Another aspect that shows the quality of education is the orderly administration.

Quality education is measured by several criteria/indicators. Fadhli (2017) revealed that the criteria that indicate the quality of educational institutions are:
1) high character; 2) high evaluation results; 3) support of parents and the local environment; 4) abundant resources; 5) application of technology; 6) strong principal's leadership and clear goals (vision); 7) students awareness and attention; and 8) relevant curriculum.

In an effort to improve quality, schools need to understand the approaches available. This is done to achieve an effective and efficient quality improvement, and achieve the desired results. Suti (2011) suggests several approaches that need to be considered to improve the quality of education.

"These approaches are first, continuous improvement. This means that the quality improvement process should be carried out continuously to satisfy quality standards in accordance with the provisions. The second is quality assurance, which is determining quality standards. The third is a change of culture. A leader builds awareness of the importance of improving the quality of learning. The fourth is upside down organization or organizational change. These changes involve changes in the duties, responsibilities, and authority of each section. (Suti, 2011)".

## The Use of ICT-based Learning Media

Media is often associated with instruments used in teaching and learning activities. In general, there is an understanding of learning media according to some experts. In terms of etymology (language), in Latin, the word media is mentioned with the term "Medium" which means "intermediary" or "introduction". According to Pribadi (2017), the media is defined as an intermediary between the sender of information (teacher) who functions as a source or resources and recipient of information (students). In learning activities in schools, the media is a means or tool for channeling information in the form of knowledge from teachers to students.

Mukhtarudin (2017) said that in learning, an instrument is needed to convey information; called the media. In learning, there are interactions between learners (students), instructors (teachers), and instructional materials. With the absence media, communication will not work.

The opinion is in line with Nopitasari, Indrowati, and Santosa (2012), as a source of learning, the media helps teachers in channeling messages or material information to students in the learning process. This can be interpreted with the media or aids, the teacher can provide a concrete picture of the message conveyed thus students can understand and comprehend the message conveyed by the teacher.

To achieve a manageable learning process, media selection needs to be considered. Learning objectives will be achieved if the learning media used is appropriate. In addition, the selection of the right media arouse student motivation. This statement is in accordance with the opinion of Sanjaya (2009) which states that there are several factors that influence the success of learning, including teachers/teachers, students, media, and the environment. The role of learning media is said to be very important, because information messages can be conveyed clearly to students, hence the learning process is manageable and it improves learning outcomes.

From some of these expert opinions, learning media are instruments for channeling messages, stimulating motivation, and achieving maximum learning processes.

Before the 20th century, learning media used were visual media. In the 20th century, the development and use of the media was significantly improved. Along with the development of the digital age, education is also developing. A number of practitioners and stakeholders involved in education use technology to support the learning process. For example, the teacher uses games in the learning process. Games that have been modified for educational purposes and in line with the topic of learning emphasize learners. Furthermore Papastergiou (2009) expressed his opinion about the reasons for the use of games in learning.

"In particular, games are considered as learning environment which significantly: (a) support multisensory, actvie, experience-based and problem-based learning; (b) support knowledge activation; (c) provide direct feedback; (d) enables self-assessment (Papastergiou, 2009)"

According to Mahnun (2012) learning media has several benefits including: (a) increasing the rate of learning and improving the quality of education increases, (b) allowing personal education, (c) providing a basis for more scientific teaching, (d) enabling stable the learning process, (e) increasing the immediacy of learning, and (f) allowing broader presentation of education.

According to Suprijono (2009), there are several types of learning media, such as: 1) visual media such as charts, graphs, posters, diagrams, cartoons, charts, and comics, 2) audio media such as radio, language laboratories, and tape recorders, 3) projected media such as over head projectors (OHP), LCD projectors, slides, 4) projected motion media such as video (VCD, DVD, VTR), films, television computers, 5) study Tour, learning activity which is done in the object directly or study places such as museums, temples, and others.

In utilizing learning media, according to Sardiman (2009), teachers need to pay attention to several elements such as (1) determining learning, (2) determining message transmission, (3) determining the characteristics of lessons, and (4) classifying media.

Furthermore, Fahludin (2014) explains the principles of the use of instructional media: (1) strengths and weaknesses of learning media, (2) the use of varied media, and (2) active treatment of students when using instructional media.

## **In House Training Model**

In conducting coaching, an effective approach is by doing In House Training. According to Sujoko (2012), In-house training is a training conducted at a school where teachers teach.

Danim (2012) defines in-house training as follows: "In House Training as a form of training education

carried out internally by teacher working groups (KKG), schools or teachers concerned as trainers who have competencies that are not yet shared by other teachers.

Astuti and Giarti (2016) further stated the advantages of In-house training: (1) maximum results, (2) more specific material, and (3) lower costs. Whereas Dharmawan, Ramona, and Rupiasih (2016) explained that In-house training was relatively cheaper because it did not invite speakers and the training was more convenient because it was conducted at the place where participants worked.

Dharmawan's opinion about the benefits of inhouse training is based more on the cost and comfort of the place. But, another advantage that can be obtained from the in-house training model is that the institution can regulate and adjust the implementation time to avoid any disruption on intitution's activities and performance. In addition, training materials can be tailored to the needs of agencies or organizations.

Astuti and Giarti (2016) states that the implementation of In House Trainning is carried out covering three stages: (1) planning stage to determine the objective, (2) implementation stage to prepare training materials, and (3) evaluation stage to assess the conducted training.

According to the above-mentioned concept, the researchers aim at aligning the attempt in improving education quality through in-house training about ICT-based media utilization with the initial research.

Previously, Corinorita (2017) reports teachers' quality improvement in designing lesson plan in SMPN 32 Pekanbaru. Corinorita (2017) used in-house training in school to improve teachers' ability to design the lesson plan.

Astuti and Giarti (2016) also report teachers' ability improvement in developing instructional media and designing lesson plan in elementary school in Salatiga. This research shares similar perspective and content regarding the materials of in-house training.

Dharmawan et al., (2016) report 30% of improvement on teachers' ability in writing Classrooom Action Reseach through in-house training. Eventhough

it provided different content of materials, the reserach shared similar approach, the in-house training. Robani (2015) also conducted research about in-house training and reveal that teachers' ability in writing scientifc paper was increased through in-house training.

The research conducted by both Agustiani (2018) and Akhyar (2018) report a teachers' ability in designing lesson plan through in-house training. But, both research were conducted in different setting place. In the same year, Chandra (2018) also confirms that teachers' ability in designing lesson plan at SMPN 1 Sungai Tarab increased after conducting in-house training.

The research conducted by Sujiman (2019) also affirms that teachers' ability in designing lesson plan and pedagogic skill also improved by performing inhouse training. The research focused on designing lesson plan based on character education in Public Elementary School in Porong Sidoarjo.

In addition, Kasmad (2015) also conduct in-house training to improve thematic lesson quality in first grader of elementary school. The results confirmed that the thematic lesson in academic year 2013/2014 was improved. Similar research about in-house training was conducted by Yuliarni (2017) in SDN 09 Sungai Limau. It confirms that teachers' competence in designing lesson plan was improved after following in-house training.

Furthermore, Saprulloh (2018) conducted inhouse training for teacher to improve teachers' ability in utilizing school environment as learning media. The in-house training conducted confirm that teachers' ability was improved significantly.

This research is expected to be able to serve as reference for the other researchers in the near future to improve quality of education by utilizing instructional

media based on recent technology through in-house training. In addition, it is expected that this research could be a reference for the related stakeholder such as school principal, teachers and any others to improve the quality of education.

Based on the above-mentioned explanation, thus, the researchers aims at improving the quality of education by empowering teachers in utilizing the available media for learning process through in-house training.

#### METHOD

The research was conducted on September to December 2018 in SMPN 5 Salatiga. It took 42 teachers as research subject. This research dealt with inhouse training for teacher in applying Microsoft Word, Microsoft Excel, and Microsoft PowerPoint for learning process.

It was an action research which consisted of four aspects: planning, actuating, observing, and reflecting. During planning stage, the researchers composed a proposal, instrument, material, and speaker of the training. Then, the in-house training was conducting based on the planned proposal. It was conducted by using lecturing method; on cycle in a big group and two cycles in a small group with practice and discussion. The researchers observed the implementation of training. When observing, the researchers collaborated with the colleague, an ICT teacher, to obtain an accurate results. In the end of the activity, reflection was conducted. It employed comparative descriptive approach to observe the skills and abilities of each teacher in utilizing the three programs for learning process. In-house training implementation framework is presented in the Figure 1.

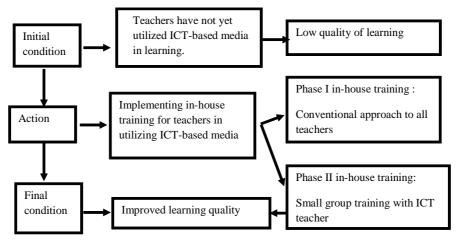


Figure 1. In-House Training Implementation Framework

The first phase of training was conducted by employing conventional lecturing method and was followed by big group training. Then, the second phase of training was conducted by employing conventional lecturing method and followed by small group training which was divided based on the subject teacher. Observation was performed on each of the implementation phase.

The data were obtained through interview, observation, and questionnaire. The achievement indicator of this training if at least 75% of teachers master the three programs and are able to use it for learning process.

According to Sugiyono (2015), the data analysis is performed through three phases: (1) data reduction, (2) data display, and (3) data verification. In data reduction, the findings were summarized and chosen based on the objective of the research. Display data aimed at presenting the findings in the form of tables, chart, short description, and correlation between categories. After displaying data, then, the data was verified or concluded.

#### RESULTS AND DISCUSSION

## **Initial Condition**

From 2010 to 2016, teachers in SMPN 5 Salatiga did not use ICT-based instructional media during the learning process. Most teachers used conventional lecturing method in the learning process. Although some teachers had used some instructional media, it was only limited to audio and visual media only. Such kind of instructional media has insignificant influence on the quality of learning.

In seven years, the school has conducted training for teachers about the utilization of ICT as instructional media. However, the training was a general training and did not provide the teachers a specific training in making ICT-based instructional media, particularly an instructional media with Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. As a results, a great number of teacher do not master the three programs.

The initial observation indicated that 30 out of 42 or it was about 71.4% teachers teacher at SMPN 5 Salatiga did not use ICT-based instructional. It further influenced the quality of learning in SMPN 5 Salatiga. Conventional learning method only allowed a monotonous classroom and did not encourage student's motivation. Consequently, student did not achieve the minimum standard. It is in line with Herdiani (2017)

which reports that during the learning process in SMKN 1 Ciamis, the teachers have prepared a novel instructional media assisted by recent technology such as PowerPoint, Video, Language Laboratory, and etc. It further proved that the prepared instructional media by the teachers improved students' ability in understanding the lesson content.

Understanding the essential role of ICT in designing instructional media to improve the quality of learning, thus, the school conducted in-house training for the entire teachers. It further aims at enhancing teachers' ability in designing ICT-based instructional media.

## First Phase of Implementation

The first phase of in-house training was conducted in four days. The training was followed by 42 teachers of SMPN 5 Salatiga. The first and second day discussed the basic concept of Microsoft Word, Excel, and PowerPoint. The third and fourth days continued with the practice in designing instructional media using the three softwares. The practice was performed individually assisted with the mentor and within a big group. The assistance was only in general. It was given when the teacher was difficult on encountered some issues during the training.

Nine out of 42 teachers who attended the inhouse training have not mastered Ms. Word. In addition 19 teachers have not mastered Ms. Excel and 12 teachers have not mastered Ms. PowerPoint. If it is converted, 78.5% teachers have mastered Ms. Word; 54.8% teachers have mastered Ms. Excel; and 71.4% teachers have mastered Ms. PowerPoint. The results are presented in Table 1.

Table 1. Comparison between Intial Condition and First Phase In-House Training

No	Application	Initial Condition	First Phase
1.	Ms. Word	26 teachers	33 teachers
2.	Ms. Excel	17 teachers	23 teachers
3.	Ms. Powerpoint	24 teachers	30 teachers

The results confirm that the highest software mastery was Ms. Word, more than 75% of teachers have mastered the software. Sufficient mastery of the three softwares by the teacher influences on the quality of learning in classroom. It was further confirmed by the average score of students in each subject presented in Table 2.

Table 2. Students' Average Score in Each Subject after First Phase of IHT and Using **ICT-based Instructional Media** 

No	Subject	Average Score
1.	Religion Education	71,8
2.	Pancasila and Citizenship Education	70,3
3.	Indonesian Language	72,4
4.	Mathematics	69,7
5.	Natural Sciences	55,0
6.	Social Sciences	76,7
7.	English	65,8
8.	Art and Culture	83,5
9.	Sport and Recreational Education	63,8
10.	Crafting	81,4
11.	Javanese Language	75,6

Based on the results of the first phase, the school decided to conduct the second phase of training to further improve. However, the training was differently arranged.

### The Second Phase of Training

Since the first phase of training did not give a significant results, the school decided to conduct the second phase. During the ssecond phase of training, the teachers were directed to work on their project using the three softwares and it was conducted in small group based on the subject lesson they taught. When working on the project, the teachers were assisted by the speaker intensively within the small group. In addition, the teachers in the small group could discuss upon the content and had a mutual benefit sharing if one of them encountered an issue.

Several issues were found during the training such as the age of the teachers which influenced the mastery of softwares. Nine teachers were a senior one with the age above 50. Most of them could not master the software promptly and significantly and tended to confuse how to operate the softwares.

To solve such issue, the instructors provided an intensive training for the senior teachers. The instructors offered an intensive training at a slow pace to make sure that the senior teachers could understand the software.

After following the second phase of training, the teachers have made a significant improvement. The comparison of the results is presented in Table 3.

Based on the results, nine teachers have not yet mastered the softwares since they are senior teachers. It was presumably due to the age of the senior teachers which hinders the ability of the teachers in understanding the software and technology development. However, the in-house training conducted was considered successful since around 78.6% teachers have mastered the softwares. It indicates that the training was successfully conducted; if it obtained more than 75%.

By mastering the three softwares, it offers a significant implication, particularly in terms of learning process. Using an ICT-based instructional media motivates students to have passionate learning in classroom. It is in line with Kasmad (2015) who reports that in-house training improve tachers' pedagogic skill and creativity for thematic learning in SD gugus Diponegoro at the first semester of Academic Year of 2013/2014. In addition, it also strengthen Soedarmo and Herman (2017) who confirm that IHT offers a tangible and intangible encoyragement for teachers to improve their ability and competence and as a results, it influence the quality of education.

In addition to the improvement of students' motivation, it improves students' score in each subject. The table below shows the average score comparison of students in each subject after and before the IHT.

The Table 4 that students' score in each subject was incerased. However, two subjects, Mathematics and Social Sciences, were decreased. It was presumably due to the characteristics of the subjects. Most students consider Mathematics as a difficult subject. Meanwhile, Social Sciences, consisted of Economics, History, Geography, and Sociologyy, demands students to have more memorizing. Thus, the students were difficult to achive the desired minimum standard score.

The results of this research is in line with Sunarto (2017) who affirms that ICT-based instructional media used by teacher improved students' score. In the cycle

Table 3. The Comparison Results of The Initial Condition, First Phase of IHT, and Second Phase of IHT

No	Softwares	Initial Condition	First Phase of IHT	Second Phase of IHT
1.	Ms. Word	26 teachers	33 teachers	34 teachers
2.	Ms. Excel	17 teachers	23 teachers	33 teachers
3.	Ms. Powerpoint	24 teachers	30 teachers	33 teachers

No	Subject	Initial condition	IHT Phase 1	IHT Phase 2
1.	Religion Education	71,2	71,8	76,9
2.	Pancasila and Citizenship Education	66,9	70,3	72,2
3.	Indonesian Language	72,4	72,4	75,0
4.	Mathematics	69,7	69,7	68,9
5.	Natural Sciences	55,3	55,3	66,2
6.	Social Sciences	74,3	76,7	69,2
7.	English	65,7	65,8	67,1
8.	Art and Culture	78,5	83,5	83,8
9.	Sport and Recreational Education	55,3	63,8	68,0
10.	Crafting	74,5	81,4	83,0
11.	Javanese Language	71,5	75,6	75,6

Table 4. The Comparison of Students Average Score Before and After IHT

I, students obtained an average score of 81.31 and it increased to 85.35 in the cycle II or it increases as much as 4.97%. It further affirms that the use of ICT-based instructional media avoid the boredom of students during the learning process.

#### CONCLUSION

Based on the results and discussion, several points can be drawn as conclusions: 1) in-house training conducted by the school and collaborated with several methods offered an effective and efficient implementation of training and it could achive the dsired objectives, 2) IHT could improve teachers' abilities and competences to utilize ICT-based media for the learning process. It is indicated by the magnitude of teachers in using ICT-based media for learning in classroom, 3) IHT conducted at SMPN 5 Salatiga could improve students' average score in each subject. Therefore, it is suggested to all the stakeholders of schools such as school's principal, teachers, and supervisor to conduct in-house training to improve the quality of education.

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