

Improving Teachers' Competence in Information Technology

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Abstract

While in the global world, the education 4.0 has entered, only 40% of 2.7 million Indonesian teachers are familiar with ICT and do not yet have digital culture. Generation Z and α students are taught by generation X or Y teachers, meet in class education 4.0, what will their forms of learning be like? Chalk and board method of teaching meets "mobile learning" students. This is a big challenge for enhancing a large number of teacher ICT competence. This study try to reveal how mobile learning pedagogy online course in Samisanov/*Satu Minggu Satu Inovasi* (One Week One Innovation) *Ikatan Guru Indonesia (IGI)* Indonesian Teachers Association, give impact on teaching among training participants. This research using mix methods approach. The instruction of quantitative data collection is survey while qualitative data is collected by interview among participants, trainer and founder Samisanov. To know how These courses conducted, partisipatory observation be held. Survey data will reveal the impact of online training on improving teacher competence, the quality of teacher learning, teacher-student interaction in classroom, teaching effectiveness and teacher performance appraisal. This study found that IGI's mobile learning on the Samisanov channel could improved teacher ICT competences, improved the quality of learning, the classroom climate improved, improved teaching effectiveness, and added a point of only in Teacher Performance Assessment but Also in the teacher's impact to communities.

Keywords: mobile learning, teacher competency, online training, education 4.0, Samisanov IGI

1. INTRODUCTION

The industrial era 4.0 that uses the Internet of things with list characteristics has changed the face of education in the world to adapt. Smart Class, flipped room teaching, 3 D printing, Artificial Intelligence, Augmented Reality are things that faced by teachers in their daily life in class. In other hands Indonesian teachers only 40% who have digital literacy (Susanto, 2015). So, there is a gap of learning occurred between generation X and Y teaching with a board and chalk while the generation Z and Alpha being prosecuted age students have digital literacy are much more qualified than the teachers. Of course, this situation makes the effectiveness of teaching becomes questionable. Afrianto (2018), professional teachers must be aware of and adapt to changes in the industrial era 4.0 and their effects on education. Teachers in the digital age should have a 21st century learning mind-set, which has digital literacy, keep learning something new throughout their lives and make learning more effective with opportunities provided by the industrial era 4.0. One example is integrating classroom activities with an online platform of blended/hybrid learning, is one of the strategies that can do this era. If teachers can make all things systematic in their learning, the industrial era 4.0 will have a good impact on the future of Indonesian education.

LinkedIn data, 2017, states that more than 55% of organizations experience a shortage of Digital talent gap or the gap in digital workers is widening.

In education inevitably has been influenced by industry and must be able to catch up. But a generation difference between teachers born in the 90s and previously while students were born in the 2000 internet era, in class there would be an imbalance between teacher and student digital literacy skills, which would cause problems. How could a teacher possibly can inspire and teach the competencies in accordance with industry 4.0 if the teachers themselves do not/do not yet have digital technology literacy?

Global Information Technology Report 2015 Indonesia ranks 79th out of 143 countries measured from the first Index This Network Readiness.

2. METHOD

This study sought to investigate the contribution of an online training for (teaching skills) teacher, Samisanov (One Teacher One Innovation) on improving the competence of teachers and information technology teaching and learning effectiveness.

This research is using mix method. Quantitative data comes from surveys to members about how this training affects them (the teacher) and their learning. To find out the implementation of online training researchers conducted

participatory observations into the training, as well as to find out how the canal organizes training, participants, and learning with online media and internet networks.

To find out the motivation of founder Samisanov (founder), Master trainer and also the training participants conducted by interview. To find out the impact / extent of the range of training topics and the number of participants in the training that has been running, use document analysis

3. SAMISANOV

Samisanov (One Week One Innovation) is one of 86 training channels owned by the Indonesian Teachers Association (IGI), founded in 2018 by Mr. Aries Eka Prasetya who is a teacher of SMAN 22 Surabaya, winner of Indonesian Digital Learning 2016. *Samisanov* stands against the background of student complaints about boring other subject teachers in teaching. In his mind, Mr. Aries imagined if a teacher after every week had new innovations in learning, then it would be impossible for students to be bored with learning. Because that was established *Samisanov*, one week one innovation in 2018 and becoming one of sat u canal IGI training in order to have bigger and broader impact.

Samisanov was chosen as the study material in this study because management has been formed, there are relatively many members around 2000 teachers, has regular training activities every week, and be the top 3 most popular canals at IGI. In addition, this channel has a complete archive of training activities from the start of operation.

4. ONLINE TRAINING

Members of up to thousands of people without the need to worry about burdening the memory on the gadget because all the arrays are stored in the cloud.

The types of certified training are usually specifically for *Samisanov* members who are already registered as IGI members. The available online training announcements can be accessed on the www.igi.or.id page by first logging in. Prospective participants then register for training through the SIM (Management information system) IGI Learners. In the Learning SIM contains the available activities, the schedule along with the distribution of classes, trainers and modules that must be completed until the training deadline. Depositing and reporting training assignments also through learning SIMs. If a participant succeeds in doing all the tasks properly then it is online training in *Samisanov* is held in 3 forms, namely share gram, certified online training and conference video. The first and third forms usually last only 2-3 hours and are finished. Can be followed by all members of the *Samisanov* telegram group both those who have registered for IGI and non-IGI. Participants can enter the group using the link; can also be added by the group admin. This link can be easily obtained because every time there is training, the information will be shared with the telegram group *Samisanov* and various social media,

IGI websites, telegrams, blogs, Facebook and other IGI channel YouTube.

This online training uses telegram groups as a place of discussion between participants and trainers. Telegram was chosen deliberately because this application is lighter and can accommodate declared passed and is entitled to receive an online certificate.

For the implementation of sharegram, implementation through telegram groups. Speakers usually share the application and the steps of the tutorial. Then the participants tried to practice it. The results of the practice are screenshots and sent to the class group. All obstacles and difficulties are discussed together in the telegram group. there are rules during training that you may not personally contact trainers / speakers, so all questions must be asked in the forum. Somewhat different from share gram, even though the duration is 2-3 hours short, training through video conferencing gives participants the opportunity to deposit assignments on the link provided. If you succeed in doing well, you will get an online certificate.

Interviews with participants stated that training online at all *Samisanov* canal free , you can followed anywhere and anytime, enabling teachers to follow without being tied to a time, place and cost because it can be accessed by mobile and only with the quotas or internet access. Competency could be assessed from the deposit duty trainee. If the task is done well and completely, the participant is declared to have passed.

Another benefit for participants who can not be online when video conference or sharegram continues, still can get knowledge from the training and still be able to practice, because there is a summary sharegram and Conference videos that have been recorded and shared in the group. This allows the teacher to access it whenever the teacher has time, even though they did not get sertificate..

Value sharing and growing together is an IGI philosophy that is also adopted in *Samisanov*. Trainer and participants in this online training came from teachers. More teachers who share knowledge in this channel, more skill and knowledge that member can get from *Samisanov*. Kind of online training are complete, starting from literacy, media innovation, evaluation to making learning applications with android, making exams such as UNBK to Augmented

Table 1. Online Training during 2018 and March 2019

No.	Material Name	No	Material Name
1	QR Code	11.	Dojo Class
2	TTS	12.	Powton
3	Plickers	13.	Write tutorial articles
4	Kahoot	14	Flipbook
5	Movie maker	15.	AppsGeyser
6	Writing articles	16.	Eazy Quizzly
7	Flash	17.	Quizziiiz
8	PPT is cool	18.	UH snake
9	ZipGrade	19.	Innovation Augmented Reality (AR) for Education
10.	Sparkool	20.	Writing Contest for Samisanov7 Article Book

Table 2. Name of Training

No	Name of training
1.	Computer making based exam making with Moodle
2.	Making telegram groups for learning media
3	Make digital books with magazine application
4.	Make android based applications from power points
5.	Make an evolution using Google From
6.	Making comic media
7.	Tips for writing innovations quickly and attractively

The number of participants during the training through 2018 was around 1500 people. With participants who successfully completed the training well and get certificates ranging from 944 participants.

How online course in Samisanov being held is inline what Awouters et al, 2008, said there are three dimensions of ICT competencies. These are ICT awareness, ICT readiness and ICT drill and practice. ICT awareness is conduct by give module to participant; ICT readiness is steady by individual motivation of participant and ICT drill and doing the assignment does practice. So this online course could improve ICT competencies among the participant.

4.1 Survey results

Based on the demography of the members of Samisanov, it consisted of 40.5% men and 59.5% Women. Most of them 37% coming from 31-40 years, 21-30 years, 36%, and more than 40 -53 years of 24%. In the other hand, for the level school years, 57% of high school teachers / MA, 24% SMP/MTs, 12% SD / MI and teachers 7 % Vocational High School teacher. Data viewed the 79.7% employment status is government teacher, and 20,3 % teachers from non-government. There are also 2 members who have not yet become teachers but are still teacher students. Samisanov member 88.9% is an IGI member, the rest have not become an IGI member.

When they are asked how they know about this channel Samisanov, 52.3% they knew from the Internet, 39, 2% knew from friends, and the rest knew from the telegram links and WA groups. In addition, the participation of online training in Samisanov could also join with another canal online course in IGI. Only 17.6%, who participated in 2 IGI training channel, 19% join in 3 channels, 16.3% join in 4 channels, 17% in 5 channels, and more than 5 than to 27.4%.

Question about quality of online courses, including the competence of the instructor is very competent 79.7%, and the rest are quite competent, courses material that is up to date 98, 7%, only 1.3% said it was not up to date. While the time of training and discussion provided 88.9% of respondents stated enough, and 11.1% of respondents stated less. Overall, online courses at Samisanov are very good stated by 99,2% of respondents, and 0.7% participants who are less qualified.

The average of time being used by participants attending the training to do the tasks ranged from 1 hour /day up to 4-5 hours/day.

4.2 Discussion

Integrating ICT in teaching and learning in 4.0 is a mandatory requirement both for teachers and for students, because ICT has many benefits for learning process. Even in the 2013 curriculum teachers are required to combine ICT in learning to improve the effectiveness and efficiency of learning and improve 21st century learning skills to students. This is in accordance with what was stated by Kuo, Walker, Scroder and Belland (2014) found that online learning, self-efficacy learning, self regulated learning, interaction between learners and instructors, interaction between learners, greatly influenced their satisfaction.

The development of ICT in the world is very fast, from time to time. The development of ICT is certainly a huge potential to improve the quality of education. Because information technology stores information about everything that is unlimited, this can be used for the benefit of developing education that is no longer limited by time and space. Of course this will be a big challenge for teachers because they are required to understand, operate, and explore ICT well so that it can be applied in learning. In addition, the teacher must think more creatively, innovatively, and with broad insight so as to improve the quality of learning.

While the benefits of using ICT in order to support the implementation of learning are: (1) improving the quality of learning; (2) expanding access to education and learning; (3) help visualize abstract ideas; (4) facilitate understanding of the material being studied; (5) displaying learning material becomes more interesting; and 6) allow interaction between learning and the material being studied.

If you pay attention to the benefits of the use of ICT, the above results support what is otherwise an expert on the benefit of ICT. With the increase of teacher IT competencies, and make teachers apply IT in learning, it is evident from the results of a survey which states that 90% more teachers apply the results of online training in class, feel improvement in the quality of learning, improve student negative behaviour and improve learning effectiveness. In addition, 100% of respondents also stated that online ICT training at Samisanov cannal could be an alternative effort to increase teacher competency in Indonesia.

5. CONCLUSION

Improving the competency of IT teachers through Samisanov IGI online training proved able to improve teachers' digital literacy competencies and be able to improve the quality of learning and effectiveness. In addition, online training also improves the assessment of teacher performance and ranks by using training certificate as a source of performance appraisal. An online course at Samisanov can be an alternative to increasing the ICT competence of teachers in Indonesia.

6. REFERENCES

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