



## Evaluation of The Cloud Computing Training Program for Management of Collaborative Learning Document

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### Abstract

Evaluation of the cloud computing training program for the teachers of integrated Islamic elementary school (SDIT) Al-Madina Semarang has been conducted with the facilitation of the Department of Chemistry lecturer as an instructor. The evaluation aimed was to measure the impact of training on increased knowledge and participants' interest in implementing cloud computing technology. The evaluation Model in this study used a Goal-Oriented Approach (GOA). The instrument of knowledge aspect is compiled using a Likert scale with four options. The measured point includes the fundamental point of knowledge (5 items), after-activity experience (10 items), and collaborative Aspects of collaboration (4 items). The analysis of this study based on calculating the proportion of two criteria, i.e., low and high. 23 Participant Data eliminated to 17 based on completeness of instrument replenishment. The data was analyzed by using percentages. From the initial knowledge side, 12 of 17 entry categories are low. In contrast, 17 out of 17 participants feel confident about implementing cloud computing technology. The strength documents are sent to achieve a result of 100% both in terms of completeness and quantity. While the interest to collaborate gained a result of 12 out of 17 have a strong desire. All activities that have been carried out can be concluded that computing training program COMPUTING TRAINING PROGRAM has succeeded in increasing the knowledge of participants to manage collaborative learning documents activities succeeded in increasing the knowledge of participants.

*Keywords: cloud computing technology, collaboration, document management*

### INTRODUCTION

Nowadays, collaborative skills are critical aspects that graduates must have to become professionals in various fields. Various jobs cannot be resolved individually, but are resolved in a team. Therefore, equip learners with collaborative skills is indispensable. Collaborative skills can be implemented in project completion as well as in solving both multidisciplinary and interdisciplinary problems, face-to-face and online. Previous

studies on collaborative skills have been conducted using a wide range of models and approaches, such as game-based (Ostrander et al., 2019; Stoeffler et al., 2018; Zhang et al., 2018), using various media platforms such as Google Doc (Falloon, 2015), Moodle (Dias et al., 2017; Sun et al., 2017). Therefore, teachers as spearheading education are required to teach students to collaborate. One of the deciding factors in learning to collaborate is to do scaffolding (Chen & Law 2016) when

conducting lessons in class. Because scaffolding determines the success of 21st-century learning, one of which is collaborative problem solving (CPS) (Widjajanti, 2018).

The problems faced today are the lack of teachers' knowledge in drafting curriculum documents to support learning, due to teachers' ability to operate or utilize the internet and ICT. One such impact, lead teachers often compose curriculum documents individually with old methods. Such individualist work lowers the team's solidarity, so it does not encourage a sense of interest in seeing other teacher's documents, which may be more enjoyable. The phenomenon caused the teacher was accustomed to solving a simple problem, so it does not require collaborative problem solving (Retnowati et al., 2017). The same phenomenon has also been reported before, the teacher's system that works individually has an impact on the lack of material teachers teach to students, due to the teacher's burdened feeling of having to prepare materials independently without taking advantage of existing technology (Nuswowati et al., 2017).

On the other hand, the lag has made the learning system old-fashioned, and teachers are not able to keep up with the current student trends, which are always struggling with mobile phones and playing games. Thus, making the students' interest in listening to learning in class diminishes. The same phenomenon felt by the teacher at SDIT Al Madina Semarang, based on the researchers compiled a concept of collaborative learning through training, workshops, and mentoring for teachers based on Google applications such as Google Docs, sheet, and slides in organizing curriculum documents and learning media collaboratively.

This activity is in line with the vision of UNNES with the knowledge of conservation and international reputation so that it can realize the target Nawa is continuously embodying. In the lecture, the learning process has to be blended, so learning at school should also be started for Internet access. A teacher must follow the technological developments. The evaluation aims to measure the impact of training on increased knowledge and measure participants' interest in implementing cloud computing technology.

## METHOD

The evaluation method analyzed using GOA. The strategy applied is to measure

the participant's knowledge aspect before training and measure participants' knowledge and interests after training activities. Data reduction technology is carried out based on the completeness of bills at the end of activities. The participants were used as many as 23 and were eliminated to 17 based on data integrity. The instrument used consists of 2 aspects of knowledge five knowledge items on cloud computing, ten items on the achievement of activities, and four items of collaborative interest. The analysis used uses a combination of average and proportion studies. The criticism utilized to assess the outcome is that the two lows with an average score of less than 1-2 and higher with an average score of 3-4. The goal is said to be achieved if more than 50% of participants reach a high score.

## RESULT AND DISCUSSION

Evaluation of training activities to the public, in this case, teachers in SDIT Al-Madina Semarang, in review through three aspects, namely points of knowledge, points of results, and points of interest in collaboration. The third selection of aspects is based on the success of the training, easy application, and useful participants. (Alqahtani, 2019).

The first aspect is the measurement of the knowledge aspect, which aims to map the initial skills of SDIT teachers to cloud computing technology. Questions are carried out earlier before the activity (pretest). It is intended to map participants' initial knowledge at once to establish appropriate training strategies. The results of the measurements show that 12 out of 17 people have less knowledge of cloud computing technology. It can be interpreted that most SDIT teachers do not know it. There are three opinions of teachers that can be summarized about this activity is acquiring new knowledge (10), acquiring new experience (2), rewarding (7), grateful (1), motivated (1). More Data is presented in Table 1.

**Table 1.** Participants' knowledge of cloud computing technology

Score range	Category	Number of participants
5 - 11	low	12
12 - 18	high	5

After mapping the knowledge of participants where the majority still have less knowledge, there is no way to know cloud

computing technology. So the training strategy in doing with the practice method is followed directly by the participants. The advantage of this method is that the participant becomes more active in making curiosity and faster in resolving the problems encountered during direct practice, inter participants can proofread and teach each other.

Measurement of achievement results is carried out to see how the training influences the objectives to be achieved. Based on the measurement results of self-perception of mastery of the material in all participants included in the high category (Table 2).

**Table 2.** Self-perception of mastery of training materials

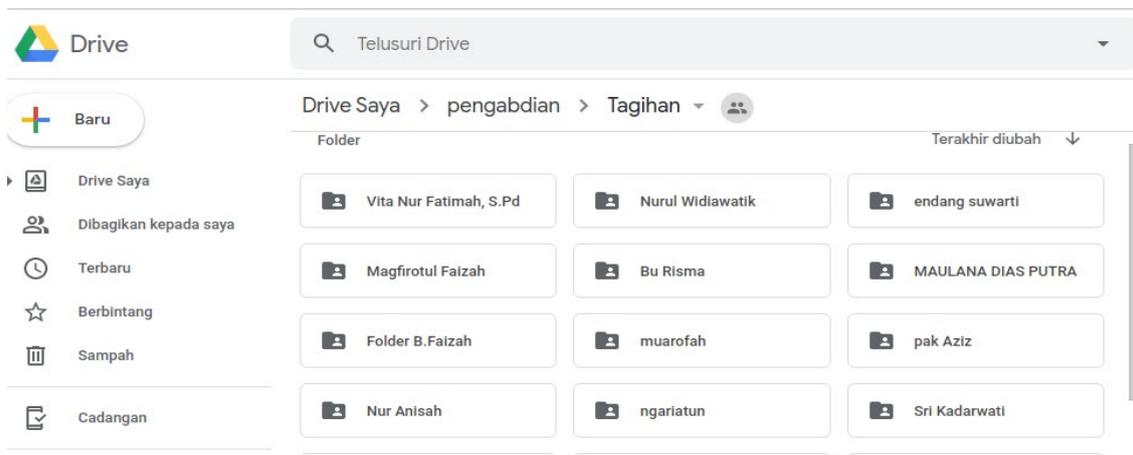
Score range	Category	Number of participants
10 - 20	low	0
21 - 30	high	17

The participant statement on the mastery aspect of the training material is strengthened

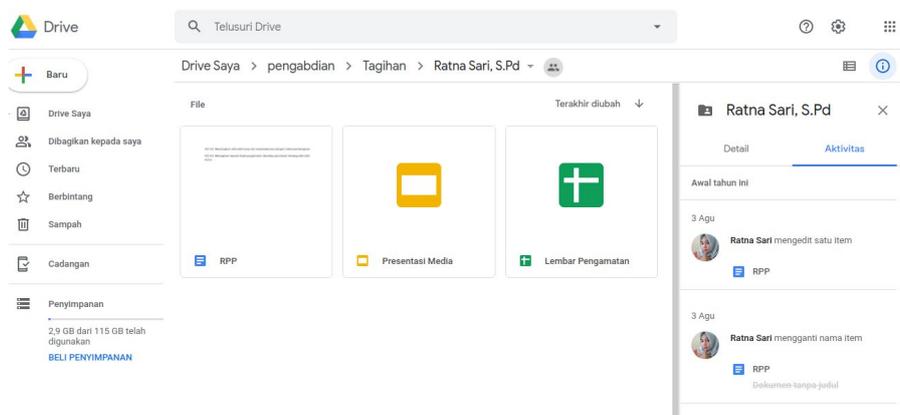
by the fulfillment of all charges (Figure 1)

This activity is only introducing and initiating participants to use cloud computing, so it is not up to the quality of the content. The 17 participants who fill in the perception data, all have uploaded documents as requested as bills. It is reached 100%. Based on that, it can conclude there is a rise in the knowledge of participants in the training in comparison before training. Then the method used in training can be concluded successfully.

The final aspect of training evaluation is the measurement aspect done by measuring collaborative interest. Collaboration interests are grouped into two criteria: low and high. The results showed the teacher’s interest in collaborating quite high. 71%teachers want to use computing technology to collaborate. More Data is presented in Table 3.



**Figure 1.** Training documents



**Figure 2.** Document content of Google Docs, Google Slides, and Google sheet.

**Table 3.** Teacher interests using cloud computing to collaborate

Score range	Category	Number of participants
4 - 10	Low	5
11 - 16	High	12

Based on the analysis results, the knowledge aspect is not the ultimate goal of the activity, including a reasonably necessary part. Collaborative experience due to lack of knowledge and understanding (De Hei et al., 2019). Therefore, a kit is required (Bause et al., 2018) that can be used as a scaffolding to train teachers to do collaborative activities (Chen & Law 2016). The use of technology dramatically affects collaborative success, but it is needed technology in a system that has been controlled, which can connect people with people not who make people interact with computer agents (Stadler et al., 2020). One technology platform is Google Docs, as the platform is proven to support collaborative activity (Song, 2018; Berdun et al., 2018). The success of collaborative activity through Google Docs was also delivered by Caballé, et al. (2010) that the use of Internet devices concerning the technical aspects and learning concepts much supports the success of collaborative learning. On the other hand, methods of learning with mobile learning and using straightforward practice techniques are handy for collaborative-based Training (Jones, 2011). Thoroughly, the evaluation results in supporting the analysis of the use of cloud computing technology to improve the capacity of collaborative learning (Nuswowati et al., 2019).

## CONCLUSION

The study discusses the use of cloud-specific environments (Google docs, Google sheets, and google slides) and demonstrates their usability and implementation in collaboration. This study concluded the importance of implementing the could computing collaboration, its high level of usefulness, and the increased knowledge seen from the outcome aspects and the trainees' collaboration interests. Therefore, based on the results of the evaluation of this research recommends could computing as integrated storage technology into all aspects of the school's machining needs. This training also encourages teachers to increase the use of Google applications in their daily tasks and in-school teaching needs.

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