

The Effect of Technology Skills and Work Ethos on TPACK Teachers of SMP Negeri Batu Bara Regency

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ABSTRACT

The existing phenomenon related to the skills of using technology (ICT) of junior high school teachers in Batu Bara Regency is still low, especially junior high school teachers who are in the regions, teachers aged 50 years and over. The low average UKG score in this district is a portrait that is quite concerning in the world of education. This problem really needs to get more attention from the government to be more serious in making stricter regulations regarding professional teachers. Another indicator of teacher quality in Batu Bara Regency is shown through the low mastery of TPACK based on interviews with supervisors on the results of teacher performance assessments. TPACK is a framework for researchers and education practitioners, in an effort to package and develop learning models in order to achieve learning objectives through a better process. So this study aims to: (1) determine the effect of ICT skills on teacher TPACK, (2) determine the effect of work ethic on teacher TPACK, and (3) determine the effect of ICT skills and work ethic together on TPACK of junior high school teachers in Batu Regency.

Keywords: *technology skill, ethos, TPACK.*

1. INTRODUCTION

The TPACK of teachers in Batu Bara Regency is still low. The low TPACK of teachers is shown, among other things, by the average UKG score which is quite low. The average UKG score for both professional and pedagogical competencies in general is below the standard set average of 70.

TPACK is a framework for researchers and education practitioners, in an effort to package and develop learning models in order to achieve learning objectives through a better process. Knowledge of technology, pedagogy, and content/material knowledge, should be integrated in a teacher [1]. The TPACK of teachers is influenced by several factors, including skills in ICT [2].

The reality on the ground shows that the ICT skills of junior high school teachers in Batu Bara Regency are still relatively low. From the results of interviews with school supervisors through Teacher Performance Assessment data, some junior high school teachers have not mastered ICT yet, while the reality is that almost all teachers have cell phones, androids, and smartphones. But very rarely the media is used for searching teaching materials, concepts, and learning videos for learning purposes. In

fact, having ICT skills should have a positive effect on learning. If teachers use their ICT skills for learning then the teacher will create an interesting learning atmosphere. The TPACK of teachers is not only influenced by ICT skills, but also by work ethic.

Another fact in Batu Bara Regency shows that the work ethic of teachers is still relatively low. From the results of interviews with several principals, information was obtained that several phenomena were known to be related to the work ethic of teachers. Several principals stated that the work ethic of teachers was still low, teachers lacked future orientation, and teachers only taught existing material and then evaluated it. It was also found that teachers were lacking in hard work and respect for time, there were still teachers who were not disciplined in time, there were still a number of teachers who came late to teach, came and went home without signing the attendance list. Another school principal stated that the learning model used was only lectures, the teacher taught by only giving questions to the children and then the students were left to work alone while the teacher left the class there was still the teacher giving notes until the hour ended. Meanwhile, other school principals stated that there was a lack of teacher

responsibility, teachers were less diligent and tenacious, lazy to write, made Class Action Research, there were still many teachers who did not compete honestly and healthily. They justify all means to get a good score in the national exam and there are still teachers who do not have teaching preparation tools.

2. THEORETICAL DESCRIPTION

2.1. *Understanding Technological Pedagogical and Content Knowledge (TPACK) Teachers*

TPACK stands for Technological Pedagogical and Content Knowledge. In Indonesian it can be interpreted as knowledge of technology, pedagogy, and content [1].

According to [3], the term Pedagogical Content Knowledge (PCK) is a combination of Pedagogical Knowledge and Content Knowledge needed for teaching. According to Shulman, Pedagogical Content Knowledge (PCK) from a teacher is very important to create useful learning for students.

The epistemological idea of Pedagogical Content Knowledge (PCK) can be described as the relationship between basic knowledge of content and pedagogy with the three required fields of context [4].

Meanwhile, another opinion, [5] states Pedagogical Content Knowledge Technology (TPACK) is a perfect combination of three knowledge domains (content, pedagogy, and technology) which aims to develop basic knowledge when a teacher learns subject matter and understand how technology can improve learning opportunities and experiences for students while knowing the right pedagogy to improve the content of the learning.

From the explanation above, it can be concluded that TPACK is a framework for designing new learning models by integrating three main aspects, namely technology, pedagogy and content/material knowledge as well as the interaction between each of the two knowledge and among all that knowledge in classroom learning which aims to develop basic knowledge when a teacher learns the subject matter and understands how technology can increase learning opportunities and experiences for students while knowing the right pedagogy to improve the content of learning.

2.2. *Understanding Information and Communication Technologies (ICT) Skills*

Batubara (2017: 8) states that ICT is Information and Communication Technologies or in Indonesian known as Information and Communication Technology (ICT). Furthermore, Batubara (2017: 9) states that ICT is a general term that includes all technological devices that can be used as a tool to process, store, and present

information. Such as: radio, television, cell phones, computer and network hardware and software, satellite systems and so on. The notion of information and communication technology also emphasizes the role of integrated communication that integrates telecommunications equipment to access, store, transmit, and manipulate information (Information and Communications Technology).

In other idea, [6] states that ICT is Information and Communication Technologies or Information and Communication Technology (ICT), is a medium or aid to carry out activities such as processing, manipulating, managing, and transferring or transferring information.

And the explanation above, it can be concluded that the ICT skills of teachers are the skills of teachers in developing learning innovations by utilizing ICT both in planning, implementing, and evaluating learning.

2.3. *Understanding Work Ethic*

Work ethic is a work spirit that is the hallmark of a person or group of people who work, which is based on work ethics and perspectives that are believed to be, and are realized through determination and concrete behaviour in the world of work [7].

Different with [8] formulates that professional work ethic is a set of positive behaviours rooted in strong awareness, fundamental beliefs, accompanied by a total commitment to an integral work paradigm. On another occasion, [8] stated that work ethic is the foundation, strategy, and true success solution for individuals, organizations, professions, and society at the same time.

Further [7] emphasize work ethic is the distinctive character of a certain group that can be seen from their habits, principles and the results of their work in the form of goods and services.

Starting from the various understandings of the work ethic above, both etymologically and practically, it can be concluded that the teacher's work ethic is a distinctive characteristic shown by a teacher regarding positive attitudes, behaviours and habits at work, attitudes and views towards work based on ethics and morals. a work perspective accompanied by confidence and high morale, realized through determination and concrete behaviours in the world of work so as to produce something that is maximum.

3. METHOD

This study uses a quantitative approach and is an inferential type of research that proves the influence of skills in ICT and work ethic on teacher TPACK which has been formulated in a hypothesis with an ex post facto design. This study seeks systematic empirical data and in this study the researcher cannot directly control the independent variables because the events have occurred and by their nature cannot be manipulated. This study

places the influence of skills in ICT and work ethic on the TPACK of teachers of SMP Negeri Batu Bara Regency.

Collecting data using a questionnaire, in which the researcher hardly knows who is being studied or who is providing the data [9]. To see the relationship between each variable to the object, quantitative research is more causal (causal), so that in this research there are independent (influenced) and dependent (influenced) variables.

This research was conducted at the State Junior High School of Batu Bara Regency, North Sumatra Province, with the reason that the teacher competency test in this district was low. This research was conducted for 6 (six) months from July 2020 to January 2021.

4. RESULT AND DISCUSSION

4.1. *The Influence of Teachers' ICT Skills on Teachers' TPACK*

Skills in ICT is one of the factors that influence TPACK. Skills in ICT must be considered by teachers. Implementation must be carried out seriously so that the achievement of TPACK can be maximized.

Based on the results of the analysis and discussion of statistical tests and statistical analysis, it was found that there was an influence of teacher skills in ICT on the TPACK of State Junior High School teachers in Batu Bara Regency. The effect of teacher skills in ICT (X1) on teacher TPACK (Y) is 0.587 or ($r_{X1Ycount} = 0.587$) and $p = 0.000$ for a significance level of 5% so that the two variables are classified as having a significant relationship. This means that alternative hypothesis 1 (H1) which reads "There is an effect of skills in ICT on the TPACK of State Junior High School teachers in Batu Bara Regency" is accepted.

According to [1], TPACK is a framework that introduces a complex relationship between the three knowledge, namely technology, pedagogy and content. TPACK consists of three basic components of knowledge, namely technology, pedagogy, and content which are intuitive knowledge and understanding of teaching content with appropriate pedagogical and technological methods.

Based on the data analysis that has been done, it can be seen that the sample has an average ICT ability score of 144.06. In this study the magnitude of the coefficient of determination of 0.569 means that it is quite significant. Based on the results of the study, the effect of skills in teacher ICT on TPACK was obtained with an Adjusted R Square value of 0.587, meaning that 58.7% of TPACK was influenced by ICT. And the remaining 41.3% TPACK is influenced by other variables. Based on the results of this study, the ICT skills of state junior high school teachers in Batu Bara Regency are already better than the [6] studied in 2017, which states that the

description of the ICT competence of SD/MI teachers in Indonesia is in the sufficient category and needs to be improved, especially teachers who are in rural areas. - outer area. Some aspects of teacher ICT competence that are of concern are mastery of ICT tools, understanding of the design of developing teaching materials using ICT, and methods of using ICT tools in the classroom. The factors that influence the ICT competence of teachers are divided into two parts, namely factors that come from within the teacher and from outside the teacher. For this reason, these factors must be considered by decision makers or the education office in improving skills in ICT.

4.2. *The Influence of Teacher's Work Ethic on Teacher TPACK*

There is an influence of the teacher's work ethic on the TPACK of State Junior High Schools in Batu Bara Regency. The effect of the teacher's work ethic (X2) on the teacher's TPACK (Y) is 0.639 or ($r_{X2Ycount} = 0.639$) with an average value of 173.98 in the high category, and the price of $p = 0.000$ for a significance level of 5% so that the two variables are classified as having a significant relationship. . Based on the results of the multiple linear regression test in the table, it can be explained that the influence of teacher ICT ability and teacher work ethic on teacher TPACK is obtained with an Adjusted R Square value of 0.569, meaning that 56.9% of teacher TPACK is influenced by teacher ICT ability and teacher work ethic while 43.1 The other % is influenced by other things outside the model. While the alternative hypothesis 2 (H2) which reads "There is an influence of the teacher's work ethic on the TPACK of State Junior High School teachers in Batu Bara Regency" is accepted.

The teacher's work ethic can have a significant effect on TPACK skills considering that TPACK is a new demand for teachers to master. Because it is quite complex and involves the ability of information technology, of course, for teachers who are senior enough, it is rather difficult to master it. Without a high work ethic to keep learning and asking questions, it is quite difficult for teachers to be able to master this TPACK skill.

Based on the results of data analysis, the correlation between work ethic and TPACK was 0.722 which was included in the strong category. The regression equation for the effect of work ethic on TPACK is positive, that is, $= 181.172 + 0.425X2$, meaning that every increase in work ethic will increase TPACK, on the other hand, every decrease in work ethic will have an impact on decreasing TPACK.

4.3. The Effect of Teacher ICT Skills and Teacher Work Ethic Together on Teacher TPACK

There is an effect of the teacher's ICT ability and teacher's work ethic together on the TPACK of State Junior High School teachers in Batu Bara Regency. The influence of teachers' ICT skills and teachers' work ethic on teachers' TPACK can be explained through regression analysis, which obtained a significance value of 0.000. Meanwhile, F count 165,735 is greater than F table, which is 4.85 so that the third hypothesis (H3) is accepted.

Based on the table of Anova test results, the influence of teacher's ICT ability and teacher's work ethic can be explained that the regression analysis obtained a significance value of 0.000. Meanwhile, F count 165,735 is greater than F table, which is 4.85 so that the third hypothesis (H3) is accepted.

Based on the results of the multiple linear regression test in the table, it can be explained that the influence of teacher ICT ability and teacher work ethic on teacher TPACK is obtained with an Adjusted R Square value of 0.569, meaning that 56.9% of teacher TPACK is influenced by teacher ICT ability and teacher work ethic while 43.1 The other % is influenced by other things outside the model.

The results of the teacher's TPACK variable analysis showed that the highest score was 323 out of 440 and the lowest score was 268 with an average of 283,077. The majority score belongs to the sufficient category with a percentage of 39.53%. This is different from the research of [10] which shows the average overall ability of teachers in the seven TPACK frameworks has a score of 4.41 with good criteria. This means that the average [11] research results are better than this study.

The effect of skills in ICT and work ethic on TPACK shows a sufficient number, namely 0.569, meaning that the effect of skills in ICT and work ethic on TPACK is 56.9%. Skills in ICT and work ethic are quite influential, so a teacher must master broad and in-depth knowledge of content / subject matter and pedagogical knowledge and technological knowledge which are all three integrated such as learning activities.

Based on these theories, it is expected that teachers will deepen their knowledge about TPACK. Then increase the competence of these elements so that the teacher's TPACK increases because according to [12], [13] states that the Technological Pedagogical Content Knowledge (TPACK) framework describes the various types of knowledge that teachers need to teach effectively with the help of technology and various complex procedures in the field of knowledge interaction.

5. CONCLUSION

The results showed that in public junior school in Batu Bara Regency: (1) from hypothesis testing, it was found that there was a positive and significant effect of ICT on TPACK which was expressed by the regression equation = $175.522 + 0.411 X_1$; R correlation strength is 0.645, with a contribution of 0.587 or 58.7%. (2) There is a positive and significant effect of work ethic on TPACK which is expressed by the regression equation = $181.172 + 0.425X_2$; the strength of the correlation R is 0.722, with a contribution of 0.639 or 63.9%. (3) There is a positive and significant effect of ICT and work ethic on TPACK which is expressed by the regression equation = $29.753 + 0.564X_1 + 0.588X_2$; the strength of the correlation R is 0.879, with a contribution of 0.569 or 56.9%.

Based on the findings of the research, it is recommended that: a) Batu Bara Regency Education Office develop various programs that support the improvement of teachers' ICT skills and teacher work ethic, b) Principals provide opportunities for teachers and facilitate teachers to attend trainings, seminars and others that can improve ICT skills and teacher TPACK so that teacher performance is more optimal (c) Teachers need to improve ICT Skills along with Ethos by attending trainings, seminars, self-development and others that can improve ICT skills, work ethic, and teacher TPACK so that teacher competence increases so that they can improve their performance to be more optimal for a significant increase in TPACK.

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