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## The Effect of Personal Competence and Pedagogical-Didactical Competence of High School Economics Teachers in Media Literacy on Teaching Effectiveness

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### Abstract

The effectiveness of teaching Economics is highly dependent on the teachers. To increase the effectiveness of teaching, they must have personal and pedagogical-didactical competence in media literacy. This study investigates the effect of the personal and pedagogical-didactical competence of Economics teachers in the field of media literacy on their teaching effectiveness. The population of this study was the high school Economics teachers in the Special Region of Yogyakarta, Indonesia. The number of research samples was 182 teachers. The data collection of this research was carried out using a closed questionnaire. The Google-Form questionnaire was delivered to high school Economics teachers as the respondents of this research. The data collected is then analyzed quantitatively (using multiple linear regression). The results of this study indicate that the personal and pedagogical-didactical competence of high school economics teachers in the field of media literacy have a significant effect on the effectiveness of their teaching. The results of the study indicate that school leaders or related education offices should improve the personal competence and pedagogical-didactical competence of high school Economics teachers through various, relevant, and structurally designed media training activities.

**Keywords:** teacher personal competence, teacher pedagogical-didactical competence, media literacy, teaching effectiveness.

### 1. Introduction

The Covid-19 pandemic situation has swiftly changed the way teachers carry out the learning activities in the classroom. Previously, learning was carried out face-to-face in class, during the Covid-19 pandemic, learning inevitably has to be carried out in a new way, namely online learning or distance learning. Teachers and students carry out learning activities from their respective homes. Although the way of learning is different from before, the goals of learning are the same which aim to the learning objectives' achievement (instructional objectives).

There are various obstacles that teachers face during online learning. The obstacles are mostly related to: the awkwardness of having online interaction with parents and students, the unreadiness of making use of online learning resources and media, the inequality of learning facilities between schools located in cities and villages, the economic condition to afford the internet network, etc. The toughest learning implementation during Covid-19 pandemic is related to the teachers' teaching effectiveness. Teaching ineffectiveness can be seen from two sides, quantitative (Jupp, 2009) and qualitative (Good et al., 2009; Jupp, 2009). Teaching ineffectiveness is qualitatively seen from the students' added value individually and in groups. Meanwhile, from a quantitative perspective, this can be seen from the teacher's performance in classroom learning practices to improve students' achievement.

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Teachers are an important element in the teaching and learning process in schools. Every teacher must have adequate competence in carrying out teaching tasks so that the learning process achieves its goals (Day, 2006; Sammons, 1996) or at least knows whether students are learning or not as the result of teacher behaviors during learning activities. Therefore, the challenge for teachers is to be able to identify and develop the mastery of strategies, to develop certain instructional behaviors that are accepted as effective practices, and to develop the ability to match the teaching strategies and the teachers' behaviors at the right time for students individually and in groups in certain teaching situations that are related to expected students' learning outcomes (Hunt et al., 2009).

The real challenge faced by teachers in carrying out learning during the Covid-19 pandemic is the dynamically changing technological environment. This condition requires teachers to continuously innovate their teaching (Tiede et al., 2015). The task of teachers is to make creative and innovative efforts to provide teaching materials and to organize teaching according to student learning needs (Baker et al., 2021). One of the teacher teaching innovations is that they need to continually improve their knowledge and skills to effectively utilize various texts, media, and technology that are available to support the educational process. However, technology-based learning media has been widely applied in the teaching and learning process in the classroom to effectively support the teaching and learning process (Tiede et al., 2015). Teaching media is a tool to increase the teaching effectiveness. The effectiveness of the media use is highly relied to teachers' competencies. This study is intended to investigate whether the level of teachers' personal and pedagogical-didactical competence in media literacy is related to the teaching effectiveness during the Covid-19 pandemic.

## 2. Materials and methods

The population of this study was the high school Economics teachers in the Special Region of Yogyakarta, Indonesia. The total population of this study was 349 people. The sample of this study was 182 people. The number of samples in this study was determined based on Cochran formula (Cochran, 1977). The sampling technique is proportional random sampling. It considered the distribution of the research sample that came from 5 different regencies/cities, namely 45 people from Sleman Regency, 45 people from Kulon Progo Regency, 44 people from Bantul Regency, 31 people from Gunungkidul Regency, and 17 people from Yogyakarta City.

The research instrument used in this study was a questionnaire. The form of the questionnaire was a closed questionnaire. In each question item the respondents chose one of the answer options provided. In the following, the operationalization of the three research variables is presented.

The teacher's personal competence in media literacy as referred to in this study is the level of teacher's abilities/skills in selecting, understanding, and properly utilizing the content of Economics subjects available online. The measurement of variables adapted the research instrument developed by M. Simons, W. Meeus, J. T'Sas (Simons et al., 2017). Indicators of teacher personal competence in media literacy included the competencies in using media (mastering the technical use of media devices and being able to discover and utilize various sources of information), the competencies in understanding media (knowing how to produce the various sources of information, being able to evaluate the media content based on various criteria, and able to create the media content), contributing medially (creating, communicating media, and participating in using media). Each question stated in 5 Likert scale. The results of the empirical validity test showed that 9 questions were declared valid, while Cronbach's alpha value showed a value of .909.

The teacher's pedagogical-didactical competence in media literacy referred to the level of the teacher's abilities/skills in managing online learning. The variable of teachers' pedagogical-didactical competence in media literacy adapted the research instrument developed by M. Simons, W. Meeus, J. T'Sas (Simons et al., 2017). Indicators of teacher pedagogical-didactical competence in media literacy included developing students' competence in mastering the technical use of media devices, developing students' competence in discovering and utilizing various sources of information, the competencies in understanding media (developing students' competencies on how to produce and distribute the media, developing students' competencies to be able to evaluate media contents based on various criteria, developing students' competencies to be able to create media contents, contributing medially (developing students' competencies to be able to

communicate and present the content using media). Each question stated in 5 Likert scale. The results of the empirical validity test showed that the 10 variables of this study were valid, while the Cronbach's alpha value was .952.

Teachers' teaching effectiveness was the teacher's efforts to obtain instructional goals, have knowledge of the contents, communicate well, monitor students' understanding, be thoughtful and respectful to their teaching practices. The teachers' teaching effectiveness questions referred to the following 10 indicators: organization, shared goals, classroom climate, behaviors management, collaborative learning, personalized teaching and learning, making explicit links, dialogic teaching and learning, assessments for learning, plenary, and homework (Ko et al., 2014). Each question stated in 5 Likert scale. The results of empirical testing for 13 items of research instruments were valid, while Cronbach's alpha value showed a value of .923.

Data collection used a closed questionnaire. Questionnaire in the form of Google Form was delivered to Economics teachers in the Special Province of Yogyakarta who were selected as respondents for this study.

Research data was analyzed descriptively and inferentially. Descriptive analysis was intended to provide a brief description of the research variables. Before testing the research hypothesis, namely multiple linear regression, the classical assumption is tested. Tests were conducted using the IBM SPSS 25 application program.

### 3. Discussion

In many studies, the terms 'instructional effectiveness', 'teacher effectiveness' and 'effective teaching' have often been used interchangeably (Scheerens, 2008). The teaching effectiveness has showed that teacher behaviors can be observed during the whole teaching activities in the classroom (Ko et al., 2014); teacher's ability to provide the added value or progress on students' achievement (Little et al., 2009); teacher's ability to give an impact on students' performance from some important learning factors, such as teaching methods, teacher's planning, class organization, and the use of the classroom resources (Campbell et al., 2004); some references on the factors outside the learning process, such as student's learning experiences, behaviors or learning, teacher training, internal and external teaching contexts, internal teaching contexts, and student's characteristics, etc (Medley, 1977). In summary, teaching effectiveness describes that the main task of a teacher is teaching and it is conducted in the classroom. The final teaching performance is always associated with the students' final learning result and this learning process is intended to promote better students' learning outcomes.

Teachers' efforts to create an effective teaching are not always easy. Even though teachers play a very important role in teaching, yet there are various factors that also determine the success of teaching. The Covid-19 pandemic situation, for instance, has caused many teachers to experience challenges in carrying out their teaching activities (Baker et al., 2021). Their findings in New Orleans showed that during the pandemic teachers experienced a lot of mental stress which had an impact on mental health and teachers were not carrying out their main duties smoothly. In the United States, the Covid-19 pandemic has resulted in many schools having to close and teaching must be held online. Online teaching does not necessarily solve all the problems directly, many students from poor families can not be actively involved, as well as students with special needs who also do not get good educational services (Harris et al., 2020). On the teacher's side, during the pandemic they are overcome by various negative feelings that impact them from carrying out effective learning (Cipriano, Brackett, 2020; Sahu, 2020). Meanwhile in Canada, the Covid-19 pandemic has also caused many teachers to experience a lot of stress in online teaching and teaching services for students are also not running fairly for all (Sokal, Trudel, 2020). In short, the Covid-19 pandemic is a difficult situation for teachers in various countries to be able to conduct effective teaching.

There are many obstacles faced, such as the lack of budget prepared by the local government to face the changing forms of teaching (Turner, 2020), inadequate school infrastructure for online learning, there is an awkwardness for teachers to use technology in carrying out online teaching (Sahu, 2020; Sokal, Trudel, 2020), teachers themselves feel anxious while carrying out teaching both for themselves, their families, and their students (Cipriano, Brackett, 2020), online learning costs are not cheap, unequal access to technology from students living in villages and cities (Harris et al., 2020), and others. However, in the difficult situation during the pandemic, teachers need to make creative efforts in providing teaching to students (Baker et al., 2021; Sokal, Trudel, 2020). Online

teaching is an unavoidable choice in a pandemic situation. This form of teaching is a challenge for teachers in carrying out their profession. In Indonesia, as in many other countries, online teaching is a new thing for teachers. In general, teachers are also generally not prepared to do so.

The presence of technology is felt to be very helpful for teachers in carrying out online learning. The adoption of technology by teachers is felt to be very helpful for students to achieve curriculum goals and specifically the educational goals of individual students (Blackhurst, 2005). In practice, technology is applied in various forms. One of them is technology is applied in the preparation of teaching media to support efforts to create more effective learning. This is important considering that teaching media has a direct impact on increasing students' competence (Römer et al., 2022). Students can also be more independent, considering that learning media in general have a fixative nature (Edyburn, 2006).

Teachers need to have good media literacy to support teaching tasks. Teachers need to have adequate knowledge about the media applied in teaching. Research findings show that teachers' knowledge of technology is positively correlated with their perception of the usefulness of technology in life (Lamond, Cunningham, 2020). The definition of media literacy itself has indeed sparked a lot of discussion. One of them, for example, relates to the lack of clarity about the operationalization of the concept of literacy for empirical research on media literacy (Wuyckens et al., 2022). However, this study rests on the definition of media literacy as a person's ability to access, analyze, evaluate, and create messages in various forms (Aufderheide, 1993; Christ, Potter, 1998). These four components are seen as an approach based on skills in using media. Each component supports the other components and becomes part of a nonlinear dynamic learning process, such as learning to create content, helping someone to analyze professionally the contents produced by others, having skills in analyzing and evaluating internet use, expanding access, and etc. (Livingstone, 2004). Media literacy, therefore, denotes the capabilities embodied in the observable actions and practices of media users (Wuyckens et al., 2022).

During the distance learning (online), the use of learning media becomes a primary need. Its position is likened to food and clothing (Preeti, 2014). Media is a tool to help implementing the effective learning. Learning media in various different forms affect students' learning and interpret the information they get. In this context, teachers should improve their media literacy and integrate it in their field of work in various contexts at school (Tiede et al., 2015). Today, many educators have achieved success in teaching by utilizing digital technology. On the other hand, many students have also discovered digitally mediated ways of learning. That is, the pandemic situation has catalyzed some long overdue debate on important issues such as assessment, curriculum and pedagogy (Williamson et al., 2021).

In the online learning, teachers are more free to choose the right teaching materials, master the material well, and take advantage of online subject contents. Teachers need to technically master the use of media devices, be able to discover and utilize various sources of information, how to produce various sources of information, evaluate media content, create media content, and communicate and present the content using media (Simons et al., 2017). Thus, the better the level of teacher's personal competence in media literacy, the better the effectiveness of teachers' teaching is. Teachers must also be able to manage learning such as understanding the characteristics of their students, designing and implementing learning, evaluating learning outcomes, and developing students to actualize their various competencies. Teachers need to prepare, implement, and evaluate learning activities that encourage students to search, analyze, and present the information (Friesem et al., 2014; Neag, 2015). This can be done by facilitating students in mastering the use of media devices, choosing the media devices correctly based on its functions, discovering and utilizing various sources of information, knowing how to produce and distribute the media, evaluating the media content based on various criteria, create media content, communicating and presenting content using media (Simons et al., 2017). Therefore, the better the level of teachers' pedagogical-didactical competence in media literacy, the better the effectiveness of teachers' teaching is.

#### 4. Results

The description of each research variable is described in Table 1. Based on the benchmark reference assessment, the personal competence of teachers in media literacy was generally categorized as sufficient, the pedagogical-didactical competence in media literacy was also generally categorized as sufficient, and the effectiveness of teachers' teaching was categorized as sufficient.

**Table 1.** Description of research variables

Research Variables	N	Theoretical Range	Range Actual	Mean	Standard Deviation	Variance
Personal competence in media literacy	182	12 - 60	23 - 60	36.989	6.279	39.436
Pedagogical-didactical competence media literacy	182	12 - 60	23-60	36.265	6.474	52,997
Teaching effectiveness	182	24 - 120	69 - 120	85.005	10.227	104.600

Source: Research data calculated with SPSS.

The results of testing the normality of the data distribution of the research variables are shown in [Table 2](#). The asymp value. sig. (2-tailed) indicated that the data distribution of the research variables was normal.

**Table 2.** One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		182
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	4.41927190
Most Extreme Differences	Absolute	.180
	Positive	.080
	Negative	-.143
Test Statistic		.180
Asymp. Sig. (2-tailed)		.104*

Source: Research data calculated with SPSS, *Note:* \* $p > 0.05$ .

The results of the heteroscedasticity test are shown in [Table 3](#). The variable of personal competence and the pedagogical-didactical competence of teachers in media literacy showed significant results. This meant that the variance from the residual value of one observation to another observation was fixed. In other words, there were no symptoms of heteroscedasticity.

**Table 3.** Heteroscedasticity test

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	6.874	1.723		3,991	.000
Personal competence in media literacy	.005	.038	.010	.118	.906*
Pedagogical-didactical competence in media literacy	-.081	.037	-.182	-2.186	.070*

Source: Research data calculated with SPSS, *Note:* Dependent Variable: The effectiveness of teachers' teaching; \* $p > 0.05$ .

The results of the multicollinearity test are shown in [Table 4](#). The tolerance value for the personal competence and pedagogical-didactical competence of teachers in media literacy was more than .01 and the VIF value for the personal competence and pedagogical-didactical competence of teachers in media literacy was less than 10. Therefore, based on the results of multicollinearity the test did not find a high or perfect correlation between the independent variables in the regression model.

**Table 4.** Multicollinearity test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	17.721	2.686		6.597	.000		
	Personal competence in media literacy	.957	.059	.587	16.080	.000	.725*	1.379**
	Pedagogical-didactical competence in media literacy	.699	.058	.442	12.111	.000	.725*	1.379**

Source: Research data calculated with SPSS, *Note:* \*Tolerance > .01 and \*\*VIF < 10.

**Table 5** (ANOVA) shows that the F value and the significance value (sig.) showed that the regression model can be used to predict the effectiveness of teachers' teaching.

**Tabel 5.** ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16588.652	2	8294.326	420.342	.000*
	Residual	3808.343	179	19.732		
	Total	20396.995	181			

Source: Research data calculated with SPSS, *Note:* Dependent variable: the effectiveness of teachers' teaching; predictors: (constant), personal competence in the field of media literacy, pedagogical competence in the field of media literacy; \*p < 0.05

**Table 6** (Multiple linear regression) shows that the personal competence and pedagogic-didaktical competence of teachers in media literacy had a significant effect on the teaching effectiveness. The influence of teacher's personal competence in media literacy was greater than that of pedagogical-didactical competence on the effectiveness of teachers' teaching.

**Tabel 6.** Multiple linear regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.721	2.686		6.597	.000
	Personal competence in media literacy	.957	.059	.587	16.080	.000*
	Pedagogical-didactical competence in media literacy	.699	.058	.442	12.111	.000*

Source: Research data calculated with SPSS, *Note:* Dependent variable: the effectiveness of teachers' teaching; \*p < 0.05

The results of this analysis indicated that the personal competence and pedagogic competence of high school Economics teachers in media literacy had a significant effect on the effectiveness of their teaching. This means that the better the personal competence and the better the pedagogic competence of the Economics teachers in media literacy, the better the teachers' teaching effectiveness was.

The effectiveness of Economics teachers' teaching in the Special Region of Yogyakarta, Indonesia was indeed in doubt during the Covid 19 pandemic. This was also reflected in this study

that the effectiveness of teachers' teaching was categorized as sufficient. To obtain the learning objectives, teachers must have the abilities to use good media. This was because the implementation of learning could not be conducted face-to-face like before the pandemic. However, the personal competencies and pedagogical competencies of Economics teachers in media literacy as found in this study were still categorized as sufficient. The consideration, as regulated by the government of the Republic of Indonesia, was that the spread of the Covid-19 virus could not be controlled in the school environment. During the implementation of online learning, teachers did not seem to have optimally utilized various Economics learning media to support the smoothness of the learning processes and the efforts to achieve Economics learning objectives. Media was only a means of assisting to support the achievement of instructional goals. However, it depended on the competencies of the teachers. In other words, teachers must have adequate media literacy and have the ability to encourage students to have media literacy as well (Simons et al., 2017). In many communities, teachers are now required to incorporate media and technology in their teaching and must address the educational, social, and ethical dimensions of technology in home and school lives of their students. The work is understood as an important step to ensure that schools encourage and support students in acquiring the required competencies and taking responsibility for their knowledge (Tiede et al., 2015). Therefore, the better the personal competence and the better the pedagogic competence of the Economics teachers in media literacy, the better the teachers' teaching effectiveness was.

In terms of students, they are a generation that tend to be more adaptive to various technological developments. Information technology has long been available in the lives of children and adolescents, such as TV, computers, video games, internet, social media, and cell phones. Media and technology are an integral part of all aspects of home, work, leisure and school. Teachers and school leaders should be responsive to changes in life in society. However, media and technology are increasingly being applied in classrooms around the world both as tools to support teaching and learning processes and as subjects of inquiry themselves (Tiede et al., 2015).

In general, the results of this study were supported by S. Dubovicki, R. Jukić (Dubovicki, Jukić, 2017) which state that teachers and prospective teachers has benefited from organized and guided work when carrying out work with their students in the classroom. Media is very helpful for teachers in improving the pedagogical-didactical skills of teachers and prospective teachers to achieve learning objectives. Similarly, J. Jenkinson (Jenkinson, 2009) shows that from a learning perspective, especially a multimedia environment, the adoption of an evaluative framework encourages a more flexible approach to measure the effects of more meaningful learning. Teachers can use media to support more complex engagement with the learning materials. The use of technology, however, will develop students' learning processes to understand the material being studied.

## 5. Conclusion

The teacher has the main task of creating teaching effectiveness. Teachers can use learning media to support their implementation of effective teaching. In obtain this, teachers need to have personal competencies and pedagogical-didactical competencies in media literacy. Both of these competencies are needed in online learning or distance learning. The results of this study indicated that the personal competencies and pedagogical-didactical competencies of Economics teachers in media literacy had a significant effect on teaching effectiveness. The results of the study indicated that school leaders or related education offices should improve the personal competencies and pedagogical-didactical competencies of teachers through relevant and structured training activities.

Based on the findings of this study, there are some suggestions. First, the respondents of this study were Economics teachers. Teachers assess the effectiveness of teaching, personal competencies, and pedagogical-didactical competencies in media literacy on themselves. It is possible that they give answers that do not correspond to the actual conditions. The next researcher is advised to develop research on teachers with other scientific fields or take research respondents from different sides, for example from the students' perspectives. Second, the effectiveness of teaching is highly dependent on many determining factors. The next researcher is suggested to develop research by adding factors such as teachers' social competencies, teachers' personality competencies, teachers' background, and some teachers' characteristics such as socio-demographic factors.

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