

# The Relationship Between Learning Independence and Adversity in Science Learning on Digital Literacy Abilities of Students at SMPN 3 Depok

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ABSTRACT

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This study aims to investigate the relationship between the variables of learning independence and the resilience of science learning to the digital literacy abilities of students. This research is an ex-post facto research. The research instrument in the form of a questionnaire used to obtain data on learning independence, adversity, and students' digital literacy skills was carried out through the provision of questionnaires (questionnaires) to students. Data were analyzed using inferential statistical analysis with product moment correlation test, simple and multiple regression. The results of the study show that there is a positive relationship between: (1) learning independence together with adversity resistance to digital literacy abilities, the correlation value is 0.699; (2) independent learning on digital literacy skills, the correlation value is 0.467; (3) adversity resistance to students' digital literacy skills with a correlation value of 0.487; (4) learning independence on digital literacy skills after controlling for the correlation value of 0.381; (5) adversity resistance to students' digital literacy skills after controlling for independent learning with a correlation value of 0.408.

**Keywords:** Learning independence, adversity resilience, digital literacy

## INTRODUCTION

The world of technology is growing rapidly so that all people can access all information. Based on survey data from the Indonesian Ministry of Communication and Technology in 2020, the 2020 national digital literacy index in 34 provinces in Indonesia, access to the internet is found to be faster, affordable, and spread to remote areas [1]. This makes the use of technology a primary need. It is not enough for the community to be able to operate various ICT devices in their daily lives, but also to be able to optimize their use for the greatest benefit for themselves and others. Call it a hoax phenomenon that spreads massively in conversation applications and social media and is getting more and more disturbing from time to time. It is made worse by the lack of skills in sharing data and information and interacting through various digital communication devices. The survey also revealed that the digital literacy of the Indonesian people is still at a moderate level [1]. Therefore, digital skills as part of digital literacy need to be honed continuously.

Gilster defines digital literacy as the ability to understand and use information from various digital sources. It does not only include reading skills, it requires a critical thinking process and evaluating the

information found through digital media [2]. Based on this, digital literacy is an alternative in learning that can help learning media, especially teaching materials by switching physical reading materials to digital. Through digital literacy, it is easier for readers to access information whenever and wherever needed using devices connected to the internet network. The sophistication of information technology has turned everything into a reality [3].

Mastery of science and technology faces challenges in future life in various sectors. Science education is one part of education that plays a critical, creative, logical, and initiative thinking role in responding to issues in society caused by the impact of science and technology developments [4]. Therefore, learning science with digital literacy skills in learning can improve learning habits from within students who are independent and can broaden the insight and knowledge of the students themselves [5]. When students experience problems in learning, students will try to analyze and solve their own problems. So, this gives rise to learning independence and resilience in students in the learning process.

According to Kamita, learning independence is a state of learning activity with its own abilities without

dependence on others [6]. Independent learning will make a student always consistent and eager to learn anywhere and anytime. This is because students have instilled awareness and learning needs through tasks and obligations. At the time of independent study, students should be given the freedom to choose their own way of learning that they like in order to grow their self-awareness. Independent students will try their best to understand the subject matter given by the teacher and do not know despair. Students who are not independent and always depend on others are usually because students have not been able to overcome the difficulties they face [6].

Basically, the success of students in learning also depends on how students overcome existing difficulties. In this life, including in the world of education, it is natural that there are students who have a higher level of intelligence than other students. Intelligence is seen as something relative, because the intelligence of each individual is different. If it is associated with how to overcome difficulties, the type of intelligence used is the adversity quotient [7]. Resilience from adversity is a very important element for every human being, because based on the theory coined by Paul G. Stoltz, the adversity questionnaire (AQ) is a bridge between emotional intelligence (EQ) and intellectual intelligence (IQ), because EQ and IQ alone are not enough to become benchmarks that will predict a person's success. Even though someone has a good IQ and EQ but does not have a high fighting power and the ability to respond to adversity well within himself, then both of these things will be in vain. Success is strongly influenced by a person's ability to control or master his own life (Paul G Stoltz, 2014) [8]. Adversity Quotient is an assessment that measures how a person's response in dealing with problems can be empowered into opportunities [9]. Thus, the adversity questionnaire is one of the important abilities possessed by students.

Therefore, digital literacy skills, learning independence and resilience are various factors that have a role in science learning. As learning by utilizing digital literacy makes students have independent learning. If students have independence in learning, students will not depend on others as learning resources in solving learning problems so that the material being studied is easy to understand. Likewise with the adversity quotient. Students will be able to analyze a problem in learning, not easily discouraged, and able to solve problems in science learners. Based on this description, research and analysis will be carried out through this paper with the title "The relationship between learning independence, resilience in science learning with digital literacy skills of students at SMP

Negeri 3 Depok".

## RESEARCH METHOD

The method in this research is quantitative research with descriptive statistics and then determines the correlation of various research variables. This research includes ex post facto research. According to Kerlinger, ex post facto research is a systematic empirical investigation that does not control independent variables directly because the manifestation of these variables has occurred, or because these variables are basically not given treatment. So, the research to be carried out is classified as "ex post facto" because this study does not treat the research variables [10]. In this study, looking for data based on the results that are already owned by the respondents, research analysis is based on the relationship between the independent variables and the dependent variable. As for this study, the independent variables are learning independence and adversity in science learning and the dependent variable is digital literacy ability

The population is the area to be researched. The population consists of subjects or objects that have the qualities and characteristics set by the researcher to be studied and conclusions drawn. In this study, the population was all students of SMP Negeri 3 Depok, consisting of grades VII, VIII, and IX. While the sample is part of the population. The sample consisted of 225 students at SMP Negeri 3 Depok, which consisted of 75 students from each grade level. The following is a detailed description of the identity of this research sample, namely:

**Table 1.** Research Sample Description

Classes	Gender	
	Male	Female
VII	29	46
VIII	36	39
IX	36	39

## RESULT AND DISCUSSION

### The Relationship of Independent Learning and Adversity Together Digital Literacy Ability

Based on the results of data analysis that has been carried out, it is obtained that the correlation value ( $r$ ) of learning independence and adversity together with digital literacy ability is 0.699 and based on the classification of the size of the relationship, the relationship between the two is in the strong category. This shows that there is a significant correlation between learning independence, adversity resilience together with digital literacy abilities. The value of  $R^2$  is 0.489 so that the coefficient of determination (KP) is  $0.489 \times 100\% = 48.9\%$ . This shows that the contribution of the value of learning independence, adversity together with digital literacy skills is 48.9%.

Meanwhile, based on the significant test,  $F_{count}$  obtained 106.16 and  $F_{table}$  3.04, meaning that  $F_{count} > F_{table}$  where  $106.16 > 3.04$ . As it is concluded that the hypothesis  $H_0$  is rejected and  $H_1$  is accepted, it can be concluded that there is a significant relationship between learning independence and adversity together with digital literacy abilities.

### **Relationship between Independent Learning and Digital Literacy Ability**

Based on the results of data analysis that has been carried out, the correlation value ( $r$ ) of learning independence with digital literacy skills is 0.467 and based on the classification of the size of the relationship, the relationship between the two is classified as quite strong. This shows that there is a significant correlation between independent learning and digital literacy skills. The value of  $R^2$  is 0.218 so that the coefficient of determination (KP) is  $0.218 \times 100\% = 21.8\%$ . This shows that the contribution of the value of learning independence with digital literacy skills is 21.8%.

Meanwhile, based on the significant test,  $t_{count}$  obtained 7.89 and  $t_{table}$  1.652, meaning that  $t_{count} > t_{table}$  where  $7.89 > 1.652$ . As it is concluded that the hypothesis  $H_0$  is rejected and  $H_1$  is accepted, it can be concluded that there is a significant relationship between learning independence and digital literacy skills.

### **Relationship Between Adversity Quotient and Digital Literacy Ability**

Based on the results of data analysis that has been carried out, the correlation value ( $r$ ) of adversity with

digital literacy skills is 0.487 and based on the classification of the size of the relationship, the relationship between the two is classified as quite strong. This shows that there is a significant correlation between resilience and digital literacy skills. The value of  $R^2$  is 0.233 so that the coefficient of determination (KP) is  $0.233 \times 100\% = 23.3\%$ . This shows that the contribution of the value of resilience to digital literacy is 23.3%.

**Meanwhile, based on the significant test,  $t_{count}$  is 8.23 and  $t_{table}$  is 1.652, meaning  $t_{count} > t_{table}$  where  $8.23 > 1.652$ . As it is concluded that the  $H_0$  hypothesis is rejected and  $H_1$  is accepted, it can be concluded that there is a significant relationship between adversity and digital literacy ability.**

### **The Relationship of Independent Learning to Digital Literacy Ability After Controlling Adversity Quotient**

Based on the results of data analysis that has been carried out, the correlation value ( $r$ ) of learning independence with digital literacy skills after controlling for adversity is 0.381 and based on the classification of the size of the relationship, the relationship between the two is classified as quite strong. This shows that there is a significant correlation between independent learning and digital literacy skills. The  $R^2$  value is 0.381 so that the coefficient of determination (KP) is  $0.381 \times 100\% = 38.1\%$ . This shows that the contribution of the value of learning independence with digital literacy skills is 38.1%.

Meanwhile, based on the significant test,  $t_{count}$  is 7.89 and  $t_{table}$  is 1.652, meaning that  $t_{count} > t_{table}$  where  $7.89 > 1.652$ . As it is concluded that the hypothesis  $H_0$  is rejected and  $H_1$  is accepted, it can be concluded that there is a significant relationship between learning independence and digital literacy skills after controlling for adversity.

### **Relationship Between Adversity and Digital Literacy Ability After Controlling Independent Learning**

Based on the results of data analysis that has been carried out, it is obtained that the correlation value ( $r$ ) of adversity with digital literacy skills after controlling for independent learning is 0.408 and based on the classification of the size of the relationship, the

relationship between the two is in the strong category. This shows that there is a significant correlation between resilience and digital literacy skills. The value of  $R^2$  is 0.408 so that the coefficient of determination (KP) is  $0.408 \times 100\% = 40.8\%$ . This shows that the contribution of the value of resilience to digital literacy after controlling for independent learning is 40.8%.

Meanwhile, based on the significant test,  $t_{count}$  obtained 7.13 and  $t_{table}$  1.652, meaning that  $t_{count} > t_{table}$  where  $7.13 > 1.652$ . As it is concluded that the hypothesis  $H_0$  is rejected and  $H_1$  is accepted, it can be concluded that there is a significant relationship between adversity resistance and digital literacy ability after controlling for independent learning

### SUMMARY

Based on the literature review, data collection and interpretation of the data obtained can be concluded, there are:

Learning independence is the attitude, behavior of students who have the characteristics of taking the initiative to carry out active learning activities and manage the process and ability of their learning knowledge. Based on descriptive statistical analysis of the learning independence of students at SMP Negeri 3 Depok, 63.78% was obtained which means that learning independence is in the sufficient category.

Adversity is the ability of a person's endurance to face all obstacles, difficulties, with full responsibility in various problems. Based on descriptive statistical analysis of the student's resilience to misfortune of SMP Negeri 3 Depok, after obtaining 64.23% which means that the resilience of the students is in the sufficient category. This means that students have sufficient misfortune ability.

Digital literacy is the ability to use technology to obtain information through a tool, namely the media. Based on descriptive statistical analysis, it was obtained that the category of digital literacy level of students at SMP Negeri 3 Depok was 82.66%, meaning that the category of digital literacy ability had good knowledge of digital literacy.

**The results of the analysis obtained the relationship: learning independence together with adversity resistance to digital literacy ability, the correlation value is 0.699; (2) independent learning on digital literacy skills, the correlation value is 0.467; (3) adversity resistance to students' digital literacy skills with a correlation value of 0.487; (4) learning independence on digital literacy skills after controlling for the correlation value of 0.381; (5) adversity resistance to students' digital literacy skills after controlling for independent learning with a correlation value of 0.408.**

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