

Merdeka Belajar: Solution for Developing Creativity and Independence in Early Childhood in the Era of the Industrial Revolution 4.0

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ABSTRAK

Memasuki era revolusi industri 4.0, dunia telah mengalami banyak perubahan khususnya dunia pendidikan. Data menunjukkan kreativitas dan kemandirian menjadi sorotan di era revolusi industri 4.0, dengan kreativitas dan kemandirian yang tinggi maka anak mampu bersaing dan mampu menjawab tantangan bangsa. Penelitian ini dilakukan dalam rangka menganalisis korelasi kemandirian belajar yang menjadi solusi Mengembangkan Kreativitas dan Kemandirian Anak Usia Dini di Era Revolusi Industri 4.0. Jenis penelitian yang digunakan adalah penelitian kuantitatif yaitu penelitian yang berlandaskan filsafat positivisme. Populasi dalam penelitian ini adalah lembaga pendidikan di suatu daerah, sedangkan sampel penelitian ini adalah 3 sekolah. Sampel diambil pada kelas TK B dan diambil 10 anak dari masing-masing sekolah. Pengumpulan data dalam penelitian ini menggunakan kuesioner checklist. Peneliti menguji keabsahan data dengan menggunakan uji validitas dan uji reliabilitas. Hasil penelitian didapatkan nilai korelasi pearson antara Kreativitas Pearson dengan Kemandirian adalah sebesar 0,684 yang tergolong memiliki hubungan kuat dan nilai Sig. (2-tailed) sebesar 0,000 lebih kecil dari 0,05. Berdasarkan hasil tersebut dapat diketahui bahwa terdapat hubungan yang signifikan antara kemandirian belajar dan kreativitas dengan kemandirian anak, dengan kreativitas dan kemandirian yang baik. Anak mempunyai kesiapan dalam menghadapi tantangan era teknologi yang semakin berkembang.

ABSTRACT

Entering the era of the industrial revolution 4.0, the world has experienced many changes, especially the world of education. The data shows that creativity and independence are in the spotlight in the era of the industrial revolution 4.0, with high creativity and independence, children are able to compete and be able to answer national challenges. This research was conducted in order to analyze the independent learning correlation which is the solution of Developing Creativity and Independence of Early Childhood in the Industrial Revolution Era 4.0. The type of research used is quantitative research which is research based on the philosophy of positivism. The population in this study is educational institutions in one area, while the sample of this study is 3 schools. Samples were taken in Kindergarten B class and 10 children were taken from each school. Data collection in this study is use checklist questionnaire. Researchers tested the validity of the data using the validity test and reliability test. The result found Pearson correlation value between Pearson Creativity and Independence is 0.684 which is classified as having a strong relationship and the Sig value. (2-tailed) of 0.000 is smaller than 0.05. Based on these results, it can be seen that there is a significant relationship between independent learning and creativity with children's independence, with good creativity and independence. Children have readiness to face the challenges of an increasingly developing technological era.

1. INTRODUCTION

Currently, we have entered the era of the industrial revolution 4.0. In this era, the world has experienced many changes. It does not only occur in the industrial and economic sectors, but in the world of education also feels significant changes. This is evidenced by the digitalization of learning. Digitalization of learning requires educators to keep up with the times, innovate learning, and continue to develop

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themselves. It is even possible to collaborate between schools to support the digitization of learning in the era of the industrial revolution 4.0 (Lase, 2019; Munastiwi, 2020). This shows that in the era of the industrial revolution 4.0, superior resources are needed, because if institutional resources are unable to innovate and collaborate, these educational institutions will not be able to compete with others. Therefore it is important for educational institutions to provide understanding to educators and provide encouragement to continue learning and developing themselves in mastering IT. The transition of the education system from traditional to technology-based learning is important in the Industrial Revolution 4.0 Era (Astuti et al., 2019; Munastiwi & Puryono, 2021).

Creating a learning educator is not easy, meaning it takes time. Institution Education must balance the education system with learning in the 4.0 industrial revolution era. Educators are encouraged to carry out learning according to 21st century abilities, namely stimulating critical thinking skills, creative thinking, collaboration, and communication. The era of the industrial revolution 4.0 encouraged disruption. Disruption means "disturbance" or "chaos", of course this disturbance is the result of a change that makes competition even tougher. Data shows that 35% of jobs will be lost by 2025, and 65% of jobs are based on technology. The data shows that creativity is a highlight in education in the era of the industrial revolution 4.0, with high creativity children are able to compete and be able to answer national challenges (Agustini et al., 2019; Fuad et al., 2020; Sobri et al., 2019). In essence, every child has creative potential, this potential must be supported so that children's creativity develops optimally. This support comes from the environment around the child, one of which is the educator. Educators must design learning as creatively as possible so that children are interested in learning, being creative, being creative according to their imagination. Early childhood is the most essential or early period which is called the golden age (Colliver, 2018; Munastiwi & Rahmatullah, 2021).

Previous study states that creativity is a person's capacity to come up with ideas based on divergent ways of thinking (Ratama et al., 2021). Meanwhile, other study defines creativity as a new concept that raises the results of mental processes to produce ideas (Hoth et al., 2017). According to previous researcher creativity is the ability to make combinations based on data, information from existing elements, products do not always come from something new but can renew from existing or combining form something which has existed. From this combination will present something new (Stanojević et al., 2018). Creativity is divided into 2, namely verbal and creative creativity figural. Verbal creativity is creativity expressed in words. Figural creativity is creativity by generating an idea or ideas through pictures.

Creativity in early childhood is important to develop, this is because: (1) Early childhood is the age when children experience a developmental jump of up to 80%, this shows that the stimulation of creativity in early childhood will be optimal if done at an early age. (2) Creativity is directly proportional to achievement academic, this shows that if a child has high creative power, then the child's academic achievement also increases (Black et al., 2017; Gu et al., 2019). (3) As a step to give birth to a superior generation. (4) As a basis for entering other abilities, this shows that creative power is a basic ability. When a child has high creative power, the child will have a sense of wanting know high, not easy to give up, dare to explore, dare to make decisions (Awwaliyah, 2019; Dere, 2019; Yamin & Syahrir, 2020).

Independence comes from the word "Independence", independence is a state of being able to stand alone, not depend on others. Previous study revealed that independence is a major ability and one of the needs from early childhood (T. W. P. Utami et al., 2019). Basically independence is an important aspect of human life. Independence can encourage someone to achieve their goals, life goals, success. Of course independence stimulation must be given to early childhood, because if not it will make the child not independent, dependent on other people, and difficult to achieve something optimally (Bibigul et al., 2015; Ismaiyah et al., 2022). Children can learn to think independently through interactions with peers so that children are able to solve problems and dare to make decisions.

Independence in early childhood is important to develop, this is because: (1) Independence, self-help is one of the achievements of early childhood. (2) Children who are independent, when learning will be active, initiative, do the task independently, do not depend on others. (3) Independence will direct children to be able to control behavior (Ismaiyah et al., 2022; Sa'diyah, 2017). The importance of creativity and independence in the era of the industrial revolution 4.0. The industrial revolution 4.0 has led to digitalization, the world is increasingly showing its existence, there is an explosion of information and communication. This situation requires more creativity than before to survive and contribute to the industrial revolution 4.0 (Dishon & Gilead, 2020; Sahal et al., 2020). This is evidenced by the loss of several jobs in the Industrial Revolution Era 4.0 as a result of insufficient creativity. Problems related to creativity must be addressed immediately, bearing in mind that the world is growing day by day. If creativity and independence are not stimulated from an early age then the world will not be able to keep up with the times.

The independent learning program is expected to be able to give birth to generations of people who are critical, creative, collaborative and communicative. The independent learning program is designed to

return children to their nature. This is in line with Ki Hajar Dewantara's thoughts regarding freedom of learning, "Independence must be imposed on the child's way of thinking, which is not always pioneered" (Abidah et al., 2020; Angraini et al., 2022). Not only that, the Reggio Emilia approach uses play in learning, treats children democratically, and freely expresses ideas and opinions. Supported by Maria Montessori who has the idea that children should get the freedom to develop themselves. Therefore researchers are interested in studying further related to independent learning, creativity, independence, and the industrial revolution 4.0. Raising the title independent learning as a solution to develop creativity and independence of early childhood in the era of the industrial revolution 4.0 (Agustini et al., 2019; Indrayana & Sadikin, 2020). This research was conducted in order to analyze the independent learning correlation which is the solution of Developing Creativity and Independence of Early Childhood in the Industrial Revolution Era 4.0. What makes it different from previous studies is that this study raises the theme of independent learning. Independent Learning Is one of the new Ministry of Education and Culture policy programs.

2. METHOD

This research is quantitative research. Quantitative research is research based on the philosophy of positivism, and aims to examine certain populations (Sugiyono, 2016). This research will measure how far independent learning can develop children's creativity and independence. This research was conducted by: a) making a research instrument grid, b) testing the research instrument grid by testing the validity of each variable, c) after the instrument items were declared valid, a reliability test was carried out to determine the extent to which an instrument could be trusted. from the level of constancy of an instrument, d) if the instrument is reliable followed by distributing questionnaires to the population or respondents, sending a link to the questionnaire to the target respondent to fill in the respondent's responses which will become raw data in this study, e) the data obtained is processed by the correlation prerequisite test the Pearson or normality test aims to test the dependent variable and the independent variable both have a normal distribution or not, d) after the variables are declared normal, a Pearson correlation analysis is performed which is a correlation measure used to measure the strength and direction of the linear relationship of the two variables.

The population is the entire object of research, while the sample is part of the population. The population in this study were educational institutions in the Yogyakarta area, while the sample for this study were 3 schools in the Yogyakarta area. Samples were taken in Kindergarten B class and 10 children were taken from each school. The population and sample in this study were taken based on schools that had implemented independent learning at several educational institutions in the Yogyakarta area. The goal is that the research carried out is right on target, the researcher must carry out an analysis of the targets to be sampled in the study.

Collecting data in this study used a research instrument in the form of a checklist questionnaire given to respondents, namely educators (Creswell, 2017). The instrument aims to find out how far the development of children's creativity and independence is in the era of the industrial revolution 4.0. Data analysis in this study was carried out by calculating the filling of the instrument by educators. Then process the data into percentages. After the data becomes a presentation, then proceed with interpreting the numbers. The researcher also conducted an analysis of the child's developmental achievements before and according to the implementation of independent learning which aims to strengthen the research results. The hypothesis of this research is, Ha: Free Learning can Develop Creativity and Independence of Early Childhood in the Era of the Industrial Revolution 4.0. H0: Independent Learning Cannot Develop Creativity and Independence in Early Childhood in the Era of the Industrial Revolution 4.0.

Instruments in this study shared into two variables, namely creativity and independence variables. Instructions for filling in the instrument by placing a check mark in the column that corresponds to the respondent's answer. The tick code on this instrument is SS which indicates (strongly agree), S indicates (agree), TS indicates (disagree), STS indicates (strongly disagree). Creativity variable instrument and independence variable instrument is show in Table 1, and Table 2.

Table 1. Creativity Variable Instrument

No.	Grain
1	Children love new things
2	Children have high curiosity
3	Children always want to solve problems
4	Children are able to express ideas
5	Children's work is unique and different from others
6	Ideas issued by original / innovative children from existing ones

No.	Grain
7	Children are always happy, cheerful, not easily sad (able to control emotions)
8	Children love to experiment
9	Children have a high imagination (likes to play roles)
10	Children have high self-confidence
11	It's not easy to get bored of the things you are interested in
12	Able to solve problems
13	Love the world of art

Table 2. Independence Variable Instrument

No.	Grain
1	Children are able to do their own work
2	Children are able to remember what is the task
3	Children easily interact with the environment
4	Children have an optimistic nature and are not afraid to fail
5	Children have high motivation to complete their own tasks
6	Children are able to recognize situations and are able to solve simple problems
7	Children are able to express their emotions naturally
8	Stay happy even though there is a conflict (eg with a friend)
9	Children have an awareness of tolerance
10	Children are aware to obey the norms that apply
11	Children have the ability to distinguish between good and bad
12	Children can help their friends
13	Children are able to put toys back in place
14	Children are able to be responsible for their actions

Researchers tested the validity of the data using the validity test and reliability test. The validity and reliability tests were carried out by the researchers before the research was carried out (Ghozali, 2018). This is done to see whether the list of questions is feasible for educators to fill in. This instrument test is carried out so that the research results are accurate and credible. This research starts from reviewing the literature relevant to this research. Then proceed with looking for theories related to independent learning, creativity, independence, and the industrial revolution 4.0. After the literature is complete, then the researcher analyzes the theory and lowers it into an indicator of children's creativity and independence.

3. RESULT AND DISCUSSION

Result

Validity Test

Validity test is used to see the level of truth or perfection of an instrument. Instruments that have high validity are declared valid or correct, whereas instruments with low validity are declared invalid. The validity test used is measured by the product moment correlation formula. Calculation of the validity test in this study was assisted by the SPSS version 26 computer program. Decision making on the validity results was made by comparing r count with r table, with a significance level of 5%. Interpretation of the data from the validity test analysis is as follows: If r count $>$ r table, the statement items are declared valid. Significance level of 5%. If r count $<$ r table, the statement items are declared invalid. Significance level of 5%. The validity test in this study was carried out for 2 variables, namely Creativity and Independence.

Creativity Variable Validity

The creativity variable consists of 13 statement items. With the number of respondents 28 people with an r table value of 0.374 using a significance level of 5%. The results of validity testing can be seen in Table 3.

Table 3. Creativity Variable Validity

R Count	R Table	Information
0.196	0.374	Invalid
0.216	0.374	Invalid
0.813	0.374	Valid
0.801	0.374	Valid

R Count	R Table	Information
0.678	0.374	Valid
0.624	0.374	Valid
0.750	0.374	Valid
0.789	0.374	Valid
0.546	0.374	Valid
0.739	0.374	Valid
0.740	0.374	Valid
0.743	0.374	Valid
0.404	0.374	Valid

The results in the Table 3 show that there are 2 items that are declared INVALID, namely items number 1 and 2 so that these instrument items can be omitted in the study. So the instrument items used in the study were only those that were declared VALID with a total of 11 items, namely item numbers 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13. This conclusion resulted from a comparison between the r counts of each item with the r table (0.374).

Independence Variable Validity

The independent variable consists of 14 statement items. With the number of respondents 28 people with an r table value of 0.374 using a significance level of 5%. The test results can be seen in Table 4.

Table 4. Independence Variable Validity

R Count	R Table	Information
0.895	0.374	Valid
0.850	0.374	Valid
0.927	0.374	Valid
0.677	0.374	Valid
0.872	0.374	Valid
0.864	0.374	Valid
0.427	0.374	Valid
0.631	0.374	Valid
0.846	0.374	Valid
0.860	0.374	Valid
0.792	0.374	Valid
0.871	0.374	Valid
0.764	0.374	Valid
0.821	0.374	Valid

The results in Table 4 show that all statement items are declared VALID. This conclusion resulted from a comparison between the r count of each item and the r table of 0.374. The results show that all items have a calculated r value that is greater than the r table. So that it can be interpreted that all items of student independence variable instruments are valid.

Reliability Test

Reliability test is used to determine the extent to which an instrument can be trusted from the level of constancy of an instrument. The reliability test is measured using the Alpha Cronbach's formula or the alpha coefficient. The calculation of the reliability test in this study was assisted by the SPSS version 25 computer program. Decision making was made by comparing the Cronbach's Alpha coefficient with the reference Cronbach's Alpha, namely 0.6. Basis for decision making. The results of the reliability test in this study can be seen in Table 5.

Table 5. The Results of The Reliability Test

Variable	Alpha Cronbach's	Alpha Cronbach's acuan	Information
Creativity	0.896	0.6	Reliable
independence	0.955	0.6	Reliable

Base on [Table 5](#), a variable is said to be reliable if the Cronbach's Alpha value is > 0.6. From the results of the analysis above, it can be seen that Cronbach's Alpha value of the creativity variable is 0.896 so that it can be declared reliable. The independent variable is 0.955 which is declared reliable. So it can be concluded that all instruments of both creativity and independence variables are reliable.

Pearson Correlation Prerequisite Test

Normality Test aims to test the dependent variable and independent variables both have a normal distribution or not. A good model is having a normal or close to normal data distribution. Methods that can be used for normality include: graphical analysis and statistical analysis. As it is known that the t and F tests assume that the residual values follow a normal distribution. If this assumption is violated, the statistical test becomes invalid for small samples. The method used in this study to detect the normality of data distribution is to use the Kolmogorov-Smirnov (K-S) statistical test with normal distribution data testing criteria if the Significance value is greater than 0.05. The data is normally distributed if the Sig value is greater of 0.05. The normality test alternative also uses the Monte Carlo exact test method in carrying out the Kolmogorov-Smirnov test with a confidence level of 95%, the basis for making decisions for the normality test using the Monte Carlo exact test is show in [Table 6](#).

Table 6. Kolmogorov-Smirnov Normality Test (K-S)

Criteria	Creativity	Independence	Information
Mean	42.96	42.61	Distributed normal
Std. Deviation	4.26	6.00	Distributed normal
Asymp. Sig. (2-tailed)	0.174c	0.001c	
Monte Carlo Mr. (2-tailed)	0.603d	0.121d	

Based on [Table 6](#) normality calculation results in the table above, the following information can be obtained: a) Significance ValueKolmogorov-Smirnov Creativity 0.174c greater than 0.05 and Independence 0.001c less than 0.05, b) Significance ValueMonte Carlo Sig. (2-tailed) Creativity 0.603d greater than 0.05 and Independence 0.121d greater than 0.05, c) based on these results it can be decided that the residuals of the research model are normally distributed and can be used for the Pearson correlation test.

Pearson Correlation Analysis

Pearson correlation is a measure of correlation used to measure the strength and direction of a linear relationship between two variables. Two variables are said to be correlated if a change in one variable is accompanied by a change in the other variable, either in the same direction or in the opposite direction. The test criterion is that there is a significant correlation if the significance value is less than 0.05. The pearson correlation analysis results for creativity and independence is show in [Table 7](#).

Table 7. The Pearson Correlation Analysis Results for Creativity and Independence

Dependent	Independent	Pearson Correlation	Say. (2-tailed)	Information
Independence	Creativity	0.684	0.000	Significant

Based on the results in [Table 7](#), the following information can be obtained: a) The Pearson correlation value between Pearson Creativity and Independence is equal to 0.684 is classified as having a strong relationship and the value of Sig. (2-tailed) of0.000 smaller than 0.05., b) Based on these results, it can be seen that there is a significant relationship between Creativity and Independence, c) Increasing the respondent's creativity score will increase the independence score, it can be stated that Ha is accepted and H0 is rejected.

Discussion

Independent learning is an effort that aims to create a learning environment that is free to express something, free of obstacles (psychologically). Free for educators means that educators focus on maximizing learning. While being free for students means that children are given the freedom to express their ideas during the learning process with a note of adding intelligence in the form of knowledge, understanding, attitude/character, skills, reaction power which is in line with learning objectives in accordance with the law ([Field, 2018; Ismayah et al., 2022](#)).

The Ministry of Education plays an important role in increasing superior human resources by issuing policies, one of which is "Freedom to Learn". Freedom to learn was initiated by Minister Nadiem Anwar Makarim, according to him this program will be a future learning direction that focuses on improving

the quality of human resources (Bansilal, 2010; Surul, 2023). According to previous study independent learning is an idea to improve an education system that seems monotonous (Hoskin et al., 2022). With independent learning, it is hoped that it can create a fun, cool, and happy atmosphere. The concept of independent learning is to return to the essence of the law which gives freedom to schools to interpret the basic competencies of the curriculum into school assessments.

If it is connected with Ki Hajar Dewantara's idea, there is a connection, that is, the essence of independent learning is freedom of thought aimed at students and educators who can create independent characters to explore the surrounding environment (Ainia, 2020; Febriyanti, 2021). According to previous study education can guide the natural strength of students to achieve safety, the highest happiness (Towaf, 2016). If independent learning is implemented in Indonesia, an attitude of caring for the environment will be formed, this is because children can learn directly in the field, so that children are encouraged to be skilled, confident, and adaptable. This positive attitude is important to develop because an indicator of a person's benefit for the environment is having a caring, skilled and adaptive attitude wherever he is (Fauziah et al., 2018; Pappas et al., 2018).

Before developing a character-based assessment, according to Ki Hajar Dewantara, educators must hold a role, namely *Ing ngarsa sung tuladha, Ing madya mangun karsa, tut wuri Handayani*, meaning that in front of giving an example, in the middle of building ideals, follow and support them (Magta, 2019; Young et al., 2018). As educators, they must practice this motto to realize the among system, namely educating with a family spirit that is based on nature and independence. The concept of "Tut Wuri Handayani" gives freedom to children as long as they do not endanger themselves.

The concept of independent learning is also in line with the Reggio Emilia approach. The Reggio Emilia approach has the slogan "One hundred children's languages", this slogan indicates that children are born in various ways, and have hundreds of ways to express the contents of the child's mind. In addition, this approach uses a project-based approach so that it can improve critical, creative, collaborative and communicative thinking skills (Daly & Beloglovsky, 2019; Taufiq et al., 2019). The Reggio Emilia approach uses open material learning media (removal material). This learning media can develop communication, interaction, collaboration, cooperation and social skills so that it can support creation and innovation. The Reggio Emilia approach has the potential to enhance 21st century skills.

The Reggio Emilia approach is child-oriented, children are defined as active beings. Meanwhile, schools can provide democratic "citizenship" to children, use the concept of socio-constructivist learning, experience-oriented, focus on process and provide an environment (Suarti, 2020; Yuliasututie, 2022). This approach uses play in learning, treats children democratically, freely expresses ideas and opinions. The Reggio Emilia approach recognizes that the environment around a child such as parents, school and community can influence his development. This is in line with Ki Hajar Dewantara's tri-center concept of education (Nursarofah, 2022; Sunarto & Amalia, 2022).

In addition, the concept of independent learning is in line with Maria Montessori's theory. Maria Montessori argued that all education is self-education. The basis, goal, guideline is the child's self, returning the child to his nature. All efforts arise from within the child (Auliah et al., 2020; Bakhshi et al., 2017). Children must get the freedom to develop themselves. All child development must be stimulated as well as possible. Based on 3 theories from Ki Hajar Dewantara, Reggio Emilia, and Maria Montessori, the three mention "Nature", "Exploration", "Freedom", "Freedom", "Independence", and "Experience". This shows that education needs to return children to learning according to their nature by providing freedom, flexibility, independence to explore the surrounding environment so that an experience of interaction with the surrounding environment is formed (Nursarofah, 2022; Suhardja & Watini, 2022). Therefore, independent learning is the answer to these 3 theories.

According to previous study the ability to make combinations based on data, information from existing elements, products do not always come from something new but can update existing ones or combine existing ones. From this combination will present something new (Stanojević et al., 2018). Creativity is an intellectual ability to create and develop new things from experiences, knowledge and concepts that are already known. Other study said that a creative person is a person who has an open mind so that he is able to develop his imagination (McKay & Sappa, 2020). Every child has creative potential, this potential must be explored and encouraged so that it is maximized. This theory also states that there is a possibility that creativity and intelligence influence each other. Someone who is below the threshold cannot think properly to do real creative work, but if someone is above the threshold then that person has creative potential (Amalia & Sa'adah, 2021). Aspects of creativity according to Weisberg include: (1) Input, in the form of stimulation (2) Process, by thinking using ordinary thinking.

In this study, it shows that there is a relationship between independent learning and children's creativity. This is in line with previous research with the title "Development of Children's Creativity through the Concept of Free Learning in Sanggar Anak Alam", explaining the concept of independent learning to

develop children's creativity in KB Sanggar Anak Alam (Sidiq & Muqowim, 2020). The results of this study indicate that at the Sanggar Anak Alam school, children are given the freedom to choose learning activities according to their interests. Children are given the freedom to explore and express themselves with their surroundings. Independence comes from the word "Independence", independence is a state where a person can stand alone, not depend on others. Previous study revealed that independence is a major ability and one of the needs from early childhood (T. W. P. Utami et al., 2019). Other study argued that independence comes from English, namely "Independence" which means that a person's condition does not depend on other people (Nurhikmayati & Sunendar, 2020). According to other study independence is a person's ability to manage what he has (Purnomo et al., 2021). Forming an independent child is not as easy as turning the palm of the hand, meaning it takes time and needs to be consistent to stimulate it. Independence can be an indicator of reaching a child's maturity stage.

Basically independence is an important aspect of human life. Independence can encourage a person to achieve his goals, life goals, success. Of course independence stimulation must be given to early childhood, because if not it will make the child not independent, dependent on other people, and difficult to achieve something optimally (Bibigul et al., 2015; Dau & Santosa, 2023). According to previous study children can learn to think independently through interactions with peers so that children are able to solve problems and dare to make decisions (Mundariyah, 2017). There are at least 3 components of child independence, including: (1) intellectual independence, emotional independence, spiritual independence. The existence of independent learning can provide solutions for students in increasing children's creativity and independence, this is in line with the scientific article written by Rachel Field, James Duffy, and Anna Huggins entitled "Teaching Independent Learning Skills in The First Year: A Positive Psychology Strategy for Promoting Law Student Well-Being", explaining how to teach self-learning skills in the first year with positive psychology strategies. The results of this study indicate that developing independent learning skills in the first year curriculum is supportive autonomy. That way it contributes to the success of laying the academic foundation and success of children (Isnaniah, 2017; Zeng, 2017).

The first industrial revolution or 1.0 in 1784 was marked by the development of mechanization, water power and steam power. The industrial revolution 2.0 occurred in 1870 which was marked by mass production, assembly and electricity (Sawitri, 2019; Septiani & Kasih, 2021). The industrial revolution 3.0 in 1960 was marked by the development of advances in computers and automation. Until now, the world is entering the era of the industrial revolution 4.0 which is marked by the development of physical systems and the internet until digitization occurs. The industrial revolution 4.0 is the most unique revolution compared to previous revolutions. In reality, there are several things in the industrial revolution 4.0 that have not happened and are still ideas. The industrial revolution 4.0 is an industry that integrates automated technology with cyber technology. This integration is a current trend in the world of manufacturing (Drath & Horch, 2014; Nuryatmawati, 2020). According to Herman, the industrial revolution 4.0 is an era of the digital industrial revolution where all existing parts collaborate and synergize with each other in real time anytime and anywhere by utilizing existing information technology (Damayanti & Anando, 2021; D. Utami, 2019).

Every change must have a positive or negative impact. The positive impacts of the 4.0 industrial revolution include: (1) the potential to empower communities and individuals, improve the economy, social and encourage self-development. (2) Facilitate human work. (3) Ensuring good and orderly data security. (4) Minimize human error. (5) In the business world, it can increase sales turnover. (6) All data can be controlled in real time. While the negative impacts of the industrial revolution 4.0 include: (1) The reduced demand for human resources in industry because human labor is replaced by machines. (2) Issues related to data security increase, because many people access the system. (3) Privacy issues related to proprietary information and products. (4) Requires strict control from humans, because nothing can beat human intelligence (Abidah et al., 2020; Dewi & Widyasari, 2022; Meilindya et al., 2022).

Not only is the industrial world affected, but the world of education is also feeling the impact of the industrial revolution 4.0. Positive impacts include: (1) Educators more easily access learning support materials. (2) Education is getting more advanced, knowledge is easily obtained, one of which is through the internet. (3) Educators are increasingly creative and innovative to create interesting learning media. While the negative impacts include: (1) Educators who are unable to keep up with developments in the industrial revolution 4.0 will be threatened with stopping teaching. (2) Educators are required to design suitable learning to stimulate various abilities in the era of the industrial revolution 4.0. (3) Because digitalization is getting stronger, educators are required to continue to carry out self-development to keep up with the times.

4. CONCLUSION

The results of the instrument validation test on the creativity variable showed that there were two question items that were declared invalid, and the independence variable showed that all question items were valid. Cronbach's Alpha value of the reliability test of the creativity variable, so that it can be declared reliable. The independent variable is declared reliable. So it can be concluded that all instruments of both creativity and independence variables are reliable. Significance ValueKolmogorov-Smirnov on the normality test for the variable Creativity and Independence. Pearson correlation value between Pearson Creativity and Independence is classified as having a strong relationship. Based on these results, it can be seen that there is a significant relationship between Creativity and Independence.

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