

Exploring The Impact Hybrid Learning Model of Vocational High School Students

Bima Mustaqim¹, Abdul Muin Sibuea², Muhammad Amin³, Ginagor Tumanggor²

¹*Educational Technology, Universitas Negeri Medan, Medan, Indonesia*

²*Electrical Engineering Education, Universitas Negeri Medan, Medan, Indonesia*

³*SMKN 1 Percut Sei Tuan, Medan, Indonesia*

Abstract

The hybrid learning model is a learning approach that combines face-to-face learning and online learning. Face-to-face learning provides social interaction between students and teachers, while online learning provides time and space flexibility for students to study material with a variety of learning resources. In the hybrid learning model, students can take advantage of both ways of learning to gain a more comprehensive learning experience. This study uses a hybrid learning model assisted by 3-dimensional media and video tutorials to see changes in student personality, student cognitive test results, student skills after being given treatment and the effectiveness of which hybrid learning model is best used in the learning process. This study uses a non-experimental and descriptive-correlational method. The results showed that there was a change in students' personality for the better after being given treatment using a hybrid learning model assisted by 3-dimensional media and video tutorials. Then on the cognitive test showed that students who were taught using a hybrid learning model with 3-dimensional media were included in the medium category, and students who were taught using a hybrid learning model with video tutorial media were included in the low category. Furthermore, on the student psychomotor test, the entire class taught using a hybrid learning model with 3-dimensional media and video tutorials was included in the high category. For effectiveness, it shows that the hybrid learning model with 3-dimensional media is more effective for use in learning.

Keywords: Model hybrid learning; 3D; video tutorial; personality; cognitive; psychomotor.

1. Introduction

The emergence of hybrid learning environments is driven by changes in educational practice. Established educational practices are changing: established roles, resources and locations are being altered, extended, and replaced. Compared with traditional classroom learning, hybrid learning environments have some features that offer potential advantages, including flexibility, ubiquity, and cost-efficiency. Hybrid learning are flexible, as they do not require physical attendance. Learners can study at their own space. Ubiquity allows students to access

course content from almost any place and at any time. Hybrid learning are cost-efficient programs, eliminating commuting and building maintenance costs. In addition, online courses can accommodate more people, be held more frequently, and save infrastructure costs; in these ways, online learning has some advantages over the traditional classroom.

With the recent rapid development in educational technology, Hybrid learning has become another way to provide education to learners. However, in spite of an increase in the number of online courses, the retention rate of learners in online learning is often below that

of learners in traditional full-time courses. (Atchley et al., 2013) compared the course completion rate between students enrolled in hybrid learning and students enrolled in traditional courses. They found a significant difference in the retention rate between the two groups. In order to engage learners, it is very important to understand individual differences among the learners involved. (Bolliger & Erichsen, 2012) mentioned that personality type affects students' preferences towards educational settings. Some may prefer face-to-face or fully online or even blended learning methods while others prefer fully online courses, and those preferences tend to be correlated with personality types. For example, introverts are likely to prefer asynchronous online courses.

Previous research studies on Hybrid learning for degree completion have focused mainly on students' academic performance, motivation, and satisfaction compared with traditional learning environments. However, the impact of personality traits in hybrid learning has not been given ample attention and needs further examination. The present study attempts to address this gap by examining the relationship between students' personality traits towards Hybrid learning.

Personality is a term that refers to certain social images received by individuals from their groups or society. Personality is also often associated with certain characteristics that stand out in individuals, because the definition of personality in everyday terms refers to how individuals appear or create impressions for other individuals. According to Hippocrates (Nurdin et al., 2020) personality types on the basis of fluids flowing in the human body are divided into four types, namely sanguine, choleric, melancholy, and, phlegmatic. Hippocrates Personality Types are broadly described in the following table:

Table 1. Typology of Hippocrates - Galenus

Dominant body fluids	Type	Characteristics
Yellow	Choleric	Lively, easy to change direction,

Bile		friendly, quick to act but quick to stop
Black Bile	Melancholy	Lively, full of enthusiasm, hard, great fighting power, flammable heart, optimistic
Mucus	Phlegmatic	Easily disappointed, little fighting power, gloomy, pessimistic
Blood	Sanguinis	Does not like rush, calm, not easily impressed, loyal

In recent years, there have been some studies that focused on understanding personality traits in hybrid learning. (Meredith, 2011) studied the relationship between the personality types of students and their success in online courses and found that personality is an influencing factor for the success of students in terms of final course grade and retention rate. (Bolliger & Erichsen, 2012) investigated the differences in learners' satisfaction in online and hybrid learning based on their personality type and found that personality type influenced learners' satisfaction in both conditions. In another study, (Bhagat et al., 2019) used the Myers-Briggs Type Indicator and the Student Perceptions of Hybrid Learning to explore the relationship between personality traits and perceptions towards online learning. They concluded that personality traits did influence satisfaction ratings towards hybrid learning, but did not affect achievement of the participants. (Keller & Karau, 2013) further applied the FFM, developed by (Ajzen, 2005), and Hybrid Course Impression scale, to study the relationship between students' personality and their impressions of hybrid courses. HCI is composed of five dimensions: engagement, value to career, overall evaluation, anxiety/frustration, and preference for online courses. They found conscientiousness as the most consistent predictor for all five dimensions of HCI. Agreeableness and

openness predicted only the value to career dimension. However, extraversion and emotional stability showed no significant relationships with any HCI dimensions. (Arispe & Blake, 2012) used the Big Five Inventory scale to examine the relationship between personality traits and students' preferences in hybrid online language learning and found no significant relationship.

With the use of hybrid learning in learning in schools, especially vocational high schools, there will certainly be some differences of opinion and responses. To minimize these differences one of them can be used interactive learning media, so that learning can attract students' attention. Talking about learning media, of course there are many learning media available. However, not all learning media are suitable for use in hybrid learning classes. According to the opinion of (Sasmoko et al., 2020) argues that using 3-dimensional media can attract and increase student motivation. Then according (Yunika et al., 2020) learning by using video tutorials can increase student response, motivation and interest in learning.

The hybrid learning model that combines face-to-face and online learning is an attractive alternative in increasing learning effectiveness and student involvement in the learning process. The hybrid learning model can provide opportunities for students to take advantage of various learning resources available online while maintaining social interaction and active involvement in the learning process. Therefore, it is necessary to identify the impact of the hybrid learning model on students' cognition, such as comprehension, analysis, synthesis, evaluation, and creativity abilities. By knowing this relationship, efforts can be made to improve the learning and cognitive quality of students. Research conducted by (Kazu et al., 2022) which shows that the hybrid learning model can improve student learning outcomes in higher education. Not only on students' cognitive, the hybrid learning model is also considered to be able to improve students' psychomotor or skills. Research conducted by (Plummer et al., 2021) shows that online learning can improve students' skills.

Personality change is a natural process that occurs during the growth and development of students. The natural process of change can be influenced by environment, education, life experiences, social relationships, genetics and mental health (Nurdin et al., 2020). The purposes of this study are: 1) We will also look at changes in students' personalities after being given a stimulus for learning using a hybrid learning model with the help of 3-dimensional media and video tutorials. 2) This study will also look at the results of students' cognitive tests after being given treatment in the form of a hybrid learning model assisted by 3-dimensional media and video tutorials. 3) Furthermore, this study will also look at students' psychomotor skills or after being given the treatment of the hybrid learning model assisted by 3-dimensional media and video tutorials. And 4) This study will also look at the effectiveness of the hybrid learning model using 3-dimensional media and video tutorials which are good for use in the learning process.

2. METHODS

Participants

The statistical population is all students in the school at Vocational High School in the academic year 2022-2023. Using the random sampling, 60 of the students were selected as sample groups with majoring in electrical power installation engineering, of which 31 students were in the class using model hybrid learning with Three Dimension (3D) media and 29 students in the class using model hybrid learning with Video Tutorial media.

Procedures

Please Considering the fact that the present study aims to determine the relationship between hybrid learning with personality, cognitive and psychomotor in students, its research design is non-experimental and descriptive-correlational (Sibuea et al., 2021). The research procedure carried out was, first each class was given a pre-test for student personality. This is done to see whether there is

a change in student personality after being given treatment in the form of a multimedia-based hybrid learning model. Second, after obtaining the results of the students' pre-test, then the class is divided into two with half of the students in the classroom and the other half studying at their respective homes. Furthermore, in the learning process the first class is taught using a hybrid learning model with 3-dimensional media, the second class is taught using a hybrid learning model with video tutorial media. This treatment was given for 1 semester or 6 months and this research was conducted in odd semesters for electric motor installation subjects. Third, after being given treatment, a post test was carried out to see the effect of changes in students' personality, cognitive and psychomotor. This is done to see whether there is a change in students after being given the learning treatment using a multimedia-based hybrid learning model. Fourth, after obtaining the results of the students' personality, cognitive and psychomotor, the next step is to see which hybrid learning model is the most effective for use in learning. And the last one looks at student learning outcomes, whether the multimedia-based hybrid learning model can help students improve their learning outcomes. The following is picture 1 of an example of 3-dimensional media and video tutorials used in this study:

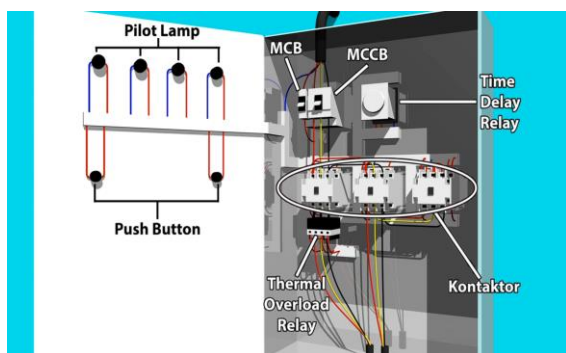


Figure 1. 3D Media



Figure 2. Media Video Tutorials

The following is the research design used in this study:

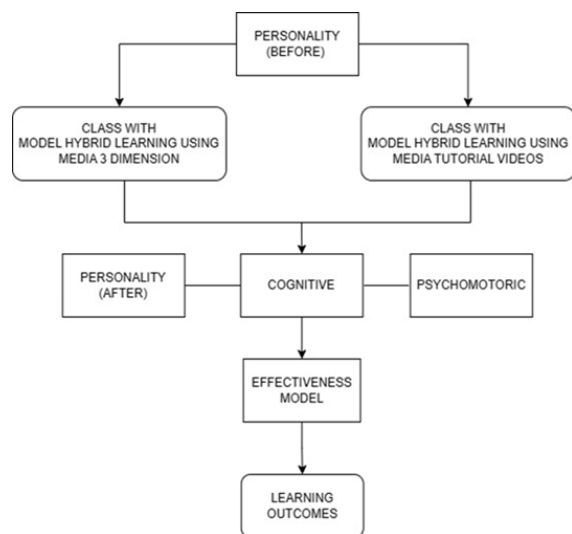


Figure 3. Research Design

Instruments

In this study student's personality is the Hippocrates-Galenus personality type (sanguinis, choleric, melancholy, and phlegmatic) and student's personality were measured using the 40-questions using Likert scale, student's cognitive were measured using the 30 questions and psychomotor students were measure using the practice assembling forward reverse motor panels. Data collected using a Google online survey form via a bulletin board system. The following are cognitive and psychomotor test categories (Sibuea et al., 2021):

Table 1. Category Cognitive and Psychomotor

Scale	Category
100 – 80	High
79 – 60	Middling
59 - 0	Low

3. RESULTS & DISCUSSION

This research was conducted in two different classes and with two different learning media. The results in this study came from the results of the questionnaires, test results and practical results that were filled out and carried out by students.

Personality

Hybrid Learning Model with 3-Dimensional Media

The following is the pre and posttest data on the personality of students who are taught using a hybrid learning model with 3-dimensional media:

Table 2. Personality Change In 3-Dimensional Media Class

	Personality	Post Test			
		Sanguine	Choleric	Melan choly	Phlegmatic
Pre-Test	Sanguine	2	2	3	0
	Choleric	3	4	2	1
	Melan choly	6	2	3	1
	Phlegmatic	1	0	1	0

The results of research in the hybrid learning model class with 3-dimensional learning media show that there are some students who do not change their personality and some do. From the table above it is shown that in the sanguine personality there were 2 students who did not change their personality after being given

treatment, then there were 4 students who had choleric personality who did not change their personality after being given treatment, and there were 3 students who had a melancholic personality who did not change their personality. Based on the researchers' observations, the absence of personality changes can be caused by, 1) Learning meetings using a hybrid learning model with 3-dimensional media which are quite short cannot change students' personalities in an instant, 2) No personality changes can occur because students lack motivation in participating learning. And 3) The personality he already has is firmly attached to him, so it takes quite a long time to change it. This is in line with research conducted by (Nurdin et al., 2020) in which the study said that a person's personality cannot change in just a short time.

The use of hybrid learning models using 3-dimensional media in the learning process can change student personalities. Changes in student personality occurred in 22 students in a class taught using a hybrid learning model with the help of 3-dimensional media. This change is expected to change in a better direction for students. So that students can have a better spirit, motivation, and purpose in life to achieve their goals.

1. Sanguine Personality Changes

a) Student Personality Changes from Sanguinis to Choleric

In sanguinis personality there were 2 students who experienced personality changes towards choleric. In such a situation, students who previously had a sanguine personality, namely people who are energetic, sociable, and optimistic, can change to become more choleric, namely people who are more assertive, passionate, and easily excited. This change can be a positive thing for students, as it can help them become more confident and have a stronger drive to achieve their goals. Therefore, the use of a hybrid learning model using 3-dimensional media can change the personality of 2 students for the better.

b) Student Personality Changes from Sanguine to Melancholy

Furthermore, there were 3 students who initially had a sanguine personality and then changed to a melancholy personality after being given treatment in the form of hybrid learning using 3-dimensional media. In such a situation, students who previously had a sanguine personality, namely people who are cheerful, optimistic, and easy to get along with, can change to become more melancholic, namely people who tend to feel sad, lack confidence, and lack enthusiasm. This can be difficult for students, because personality changes can affect how they interact with others, pursue their goals, and feel about themselves. This change can occur due to internal and external factors. Internal factors can be caused by feelings of loss or disappointment felt by students. Then external factors can be caused by environmental changes that affect the mood and emotions of students and students who are facing several problems and pressures. This will be a concern for teachers to be better at using learning models and media for 3 students who experience personality changes towards this melancholy. However, this personality change can also be an opportunity for students to develop new emotional and social skills and find new ways to deal with problems and pursue their goals.

2. Choleric Personality Changes

a) Changes in Student Personality from Choleric to Sanguinis

Personality changes also occurred in students who initially had a choleric personality after being given learning treatment using a hybrid learning model with the help of 3-dimensional media. There were 3 students who experienced personality changes to sanguine. According to research conducted by (Ajzen, 2005) which found that personality changes from choleric to sanguinis are not common, because the personalities of these two personalities are usually stable and not easy to change. If someone who has a choleric personality experiences a personality change towards

sanguinis, maybe they will experience a change in the traits they have. For example, they may become more spontaneous, playful, and sociable. They may also become more open and friendly in social interactions.

b) Student Personality Changes from Choleric to Melancholic

There were 2 students who initially had choleric personalities who experienced personality changes towards melancholy after being given treatment. Based on the observations of researchers this can happen due to various factors, such as constant pressure, disappointment, or life experiences that require them to deal with emotional problems or loss. In such situations, students who previously had a choleric personality, namely people who are energetic, passionate, and quick to anger, may change to become more melancholic, namely people who tend to feel sad, lack confidence, and lack enthusiasm. Personality changes like these can be difficult for students, because they can affect how they interact with others, pursue their goals, and feel about themselves. Therefore, this can be a teacher's concern to be better in choosing learning models and media, so that this personality change does not happen again.

c) Changes in student personality from choleric to phlegmatic

Then in the choleric personality there was 1 student who experienced a phlegmatic personality change after being given treatment. This could be due to a variety of factors, such as life experiences that made them calmer and wiser, or because they learned stress and emotion management techniques. In such situations, students who previously had a choleric personality, namely people who are energetic, passionate, and quick to anger, can change to be more phlegmatic, namely people who are calm, wise, and not easily affected by situations that trigger emotions. Personality changes like this can be a positive thing for students, because it can help them deal with stress and improve their quality of life. It can also help them to better pursue their goals and improve their social interactions.

3. Changes in Melancholic Personality

a) Changes in student personality from Melancholy to Sanguinis

Changes in student personality also occur in melancholic personalities. There were 6 students who experienced personality changes from melancholy to sanguinis after being given learning treatment using a hybrid learning model with 3-dimensional media. This can be due to various factors, such as positive experiences, therapy, or environmental changes that help them overcome their problems and improve their mood. In such a situation, students who previously had a melancholy personality, namely people who tend to feel sad, lack confidence, and lack enthusiasm, can change to be more sanguine, namely people who are energetic, passionate, and easy to get along with. Personality changes like this can be a positive thing for students, because it can help them overcome problems and improve their quality of life. It can also help them to better pursue their goals and improve their social interactions.

b) Changes in student personality from Melancholy to Choleric

Furthermore, there were 2 students who experienced personality changes from melancholy to choleric after being given learning treatment using a 3-dimensional media-assisted hybrid learning model. This change could be due to factors, such as life experiences that made them more optimistic and enthusiastic, or because they learned self-motivation techniques. In such a situation, students who previously had a melancholic personality, namely people who tend to feel sad, lack confidence, and lack enthusiasm, can change to become more choleric, namely people who are energetic, passionate, and easy to get along with. Personality changes like this can be a positive thing for students, because it can help them overcome problems and improve their quality of life. It can also help them to better pursue their goals and improve their social interactions.

c) Changes in student personality from Melancholy to Phlegmatic

There was 1 student who experienced a personality change from melancholy to a phlegmatic personality change after being given treatment. These changes can occur due to various factors, such as life experiences, environmental changes, and social support. Students who previously had a melancholic personality, which tended to have a gloomy mood, were easily influenced, and were perfectionists, may experience a change to become a phlegmatic personality, namely people who are calm, relaxed, and adaptable. This change can be positive for students, because it can help them become more relaxed and calmer, and more adaptable in different situations. However, this change can also carry risks if students become too passive and lack the drive to achieve their goals.

4. Phlegmatic Personality Changes

In phlegmatic personality, there were only 2 students who experienced personality changes after being given the hybrid learning treatment using 3-dimensional media. 1 student experienced a personality change towards sanguine, and 1 student experienced a personality change towards melancholy. Students who experience personality changes towards sanguinis can occur due to life experiences, environmental changes, or social influences. Students who previously had a phlegmatic personality, that is, tended to be calm, not too prominent, and less enthusiastic, may experience a change into a sanguine personality, which is more extroverted, enthusiastic, and sociable. This change can be positive for students, because it can help them become more confident, extroverted, and easier to interact with others. However, this change can also carry risks if students become overly impulsive and less able to maintain focus on their assignments or goals. Then 1 more student experienced a personality change towards melancholy which could be caused by life experiences, environmental changes, or social influences. Students who previously had a phlegmatic personality, which tended to be calm, less emotional, and difficult to get excited, may experience a change to a melancholic personality, which is more likely to have a gloomy mood, easily influenced, and

perfectionist. These changes can be difficult for students, because these personality changes can affect how they feel about themselves and those around them. Students who were previously calm and less emotional may become more sensitive and easily distracted by stress and pressure. However, this change can also be beneficial if students can put their new personality to good use.

Hybrid Learning Model with Video Tutorial Media

The following is the pre and posttest data on the personality of students taught using a hybrid learning model with video tutorial media:

Table 3. Personality Change in Video Tutorials Media Class

	Personality	Post Test			
		Sanguine	Choleric	Melancholy	Phlegmatic
Pre test	Sanguine	1	2	4	0
	Choleric	3	4	1	0
	Melancholy	6	2	3	0
	Phlegmatic	1	2	0	0

The data above shows that there is no change in student personality and there is a change in student personality after being given treatment in class using a hybrid learning model using video tutorial media. There were about 7 students who did not experience personality changes, namely there was 1 student who had a sanguine personality, 4 students who had a choleric personality and 3 students who had a melancholy personality. According to researchers, the absence of personality change can be caused by several factors, namely: lack of student motivation, stagnant environment, resistance to change, lack of social support and mental health problems that exist in students. Some of these factors can influence the occurrence of changes in student personality.

According to (Arispe & Blake, 2012) in dealing with factors that can hinder students' personality changes, educators and parents can provide support and motivation to students, provide an enabling environment for self-development, and help students overcome mental health problems. That way, student personality changes can occur naturally and positively.

The use of a hybrid learning model using video tutorial media in the learning process can change students' personalities. Changes in student personality occurred in 21 students in a class taught using a hybrid learning model with the help of video tutorial media. This change is expected to change in a better direction for students. So that students can have a better spirit, motivation, and purpose in life to achieve their goals.

1. Sanguine Personality Changes

a) Student Personality Changes from Sanguine to Choleric

There were 2 students who experienced this personality change after being given learning treatment using a hybrid learning model with video tutorial media. This can be caused by several factors, such as life experience, environment, or social support. In such a situation, students who previously had a sanguine personality, namely people who are energetic, sociable, and optimistic, can change to become more choleric, namely people who are more assertive, passionate, and easily excited. This change can be a positive thing for students, as it can help them become more confident and have a stronger drive to achieve their goals. However, this change can also carry risks if students are not able to balance between impulsive actions and wise decisions.

b) Student Personality Changes from Sanguine to Melancholy

In this personality there are 4 students who experience personality changes after being given treatment. In such a situation, students who previously had a sanguine personality, namely people who are cheerful, optimistic, and easy to get along with, can change to

become more melancholic, namely people who tend to feel sad, lack confidence, and lack enthusiasm. This can be difficult for students, because personality changes can affect how they interact with others, pursue their goals, and feel about themselves. However, personality change can also be an opportunity for students to develop new emotional and social skills and find new ways to deal with problems and pursue their goals.

2. Choleric Personality Changes

a) Changes in Student Personality from Choleric to Sanguinis

In this change, there were 3 students who experienced personality changes after being given treatment in class using a hybrid learning model assisted by video tutorial media. This can be caused by several factors that can affect personality changes, such as life experiences, environmental changes, and mental health conditions. Choleric personality is usually characterized by traits such as ambition, assertiveness, and dominance. They tend to be strong leaders and are firm in making decisions. While the sanguine personality is characterized by traits such as joy, cheerfulness, and courage. They tend to have the ability to motivate and uplift others. Students with this type will be more suitable to serve as a leader or class leader.

b) Student Personality Changes from Choleric to Melancholic

In this change there was 1 student who experienced a personality change. This can be due to various factors, such as constant pressure, disappointment, or life experiences that require them to deal with emotional problems or loss. In such situations, students who previously had a choleric personality, namely people who are energetic, passionate, and quick to anger, may change to become more melancholic, namely people who tend to feel sad, lack confidence, and lack enthusiasm. Personality changes like these can be difficult for students, because they can affect how they interact with others, pursue their goals, and feel about themselves. However, personality change can also be an opportunity for students to

develop new emotional and social skills and find new ways to deal with problems and pursue their goals.

3. Changes in Melancholic Personality

a) Student Personality Changes from Melancholy to Sanguine

This change was experienced by 6 students. This can be due to various factors, such as positive experiences, therapy, or environmental changes that help them overcome their problems and improve their mood. In such a situation, students who previously had a melancholy personality, namely people who tend to feel sad, lack confidence, and lack enthusiasm, can change to be more sanguine, namely people who are energetic, passionate, and easy to get along with. Personality changes like this can be a positive thing for students, because it can help them overcome problems and improve their quality of life. It can also help them to better pursue their goals and improve their social interactions.

b) Changes in Student Personality from Melancholy to Choleric

This change was experienced by 2 students. This could be due to a variety of factors, such as life experiences that made them more optimistic and enthusiastic, or because they learned self-motivation techniques. In such a situation, students who previously had a melancholic personality, namely people who tend to feel sad, lack confidence, and lack enthusiasm, can change to become more choleric, namely people who are energetic, passionate, and easy to get along with. Personality changes like this can be a positive thing for students, because it can help them overcome problems and improve their quality of life. It can also help them to better pursue their goals and improve their social interactions.

4. Phlegmatic Personality Changes

In this personality change there were only 3 students who experienced personality changes. 1 student experienced a personality change towards sanguinis and 2 students experienced a choleric personality change. Changes in the

personality of students towards sanguinis can occur due to life experiences, environmental changes, or social influences. Students who previously had a phlegmatic personality, that is, tended to be calm, not too prominent, and less enthusiastic, may experience a change into a sanguine personality, which is more extroverted, enthusiastic, and sociable. This change can be positive for students, because it can help them become more confident, extroverted, and easier to interact with others. However, this change can also carry risks if students become overly impulsive and less able to maintain focus on their assignments or goals. Furthermore, personality changes towards choleric can be caused by life experiences, environmental changes, or social influences. Students who previously had a phlegmatic personality, which tended to be calm, less passionate, and not very active, may experience a change to a choleric personality, which is more aggressive, assertive, and active. This change can be positive for students, because it can help them become more confident, assertive, and easier to take initiative. However, this change can also carry risks if students become overly aggressive and less able to understand other people's perspectives.

Cognitive

To see whether the multimedia-based hybrid learning model can change students' knowledge, the researchers also conducted a test of student learning outcomes after being given treatment. Following are the results of the student's knowledge test of learning to install electric motors after being given treatment.

Cognitive Test Results for Hybrid Learning Model Class with 3D Media

Cognitive test results of students taught using a hybrid learning model with 3-dimensional media are divided based on student personality. The following are the results of student learning cognitive tests in the subject of electric motor installation:

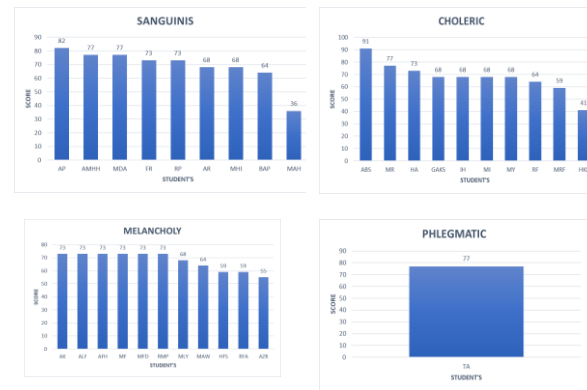


Figure 4. Cognitive Test 3D Media

The picture above shows the results of students' cognitive tests after being taught using a hybrid learning model with 3-dimensional media. The data shows the overall average score is 67.76 with the lowest score being 36 and the highest score being 91. Then when viewed from a personality perspective, there are 9 students with sanguinis personality with the highest score being 82 and the lowest being 36. Furthermore, on choleric personality there are 10 students with the highest score of 91 and the lowest is 41. Then in the melancholy personality there are 10 students with the highest score is 73 and the lowest score is 55 students. And finally, in the phlegmatic personality, there is only 1 person with a score of 74. So, it can be concluded that the hybrid learning model with 3-dimensional media is included in the medium category in improving students' cognitive in the subject of electric motor installation.

Cognitive test results for the Hybrid Learning Model class with Media Video tutorials.

The results of the cognitive tests of students taught using the hybrid learning model with video tutorial media are also divided based on the personality of the students. The following are the results of student learning cognitive tests in the subject of electric motor installation:



Figure 5. Cognitive Test Video Tutorials Media

The results of the cognitive tests of students who were taught using the hybrid learning model with video tutorial media obtained an average score of 51.03 with the lowest score being 23 and the highest score being 73. Then in this test we also divided the results based on the student's personality type. In the sanguine personality type, there are 11 students with the highest score of 73 and the lowest score of 23. Furthermore, in the choleric personality there are 10 students with the highest score of 73 and the lowest 23. And in the melancholic personality there are 8 students with the highest score of 68 and the lowest is 32. So, it can be concluded that the hybrid learning model using video tutorial media is included in the low category on students' cognitive tests for electric motor installation subjects.

The four personality types affect the learning process, where people with the sanguine personality type tend to have better learning outcomes than the other three learning types (Oktaviana & Susiaty, 2017). This is in line with research conducted by (Listiwikono, 2022) which states that in learning the sanguine personality type has better performance than the melancholic and phlegmatic types, but is just as good as the choleric type. In the hybrid learning model with 3-dimensional media the sanguine personality type has the highest average value compared to the other 3 personality types. Likewise, in classes taught using the hybrid learning model with video tutorial media, in the data, students with sanguine personality types have the highest scores as well. So, it can be concluded that

students with the sanguine personality type have good cognitive test results compared to students who have other test personality types.

Psychomotor

To measure students' psychomotor skills after being given treatment in the form of a media-assisted hybrid learning model, the researchers gave or directed students to assemble a two-way rotating electric motor panel. This is done to see whether there is an influence of the media-assisted hybrid learning model on students' psychomotor. The following is the data on the results of the student's psychomotor test.

Psychomotor Test Results for Hybrid Learning Model Class with 3-Dimensional Media.

In this class students are given an example of assembling a forward-reverse motor panel using 3-dimensional media. The following are the results of the student's psychomotor test after being given treatment:

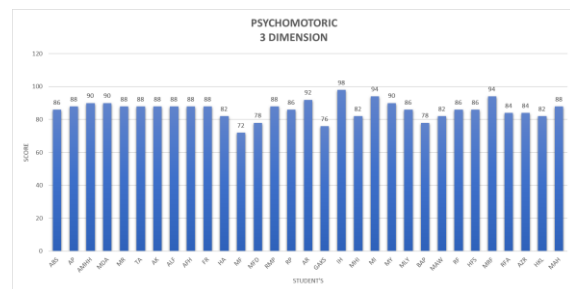


Figure 6. Psychomotor Test 3D Media

The figure above shows the psychomotor test results of students taught using a hybrid learning model with 3-dimensional media. From the data, the average score is 86 with the lowest score being 72 and the highest score being 98. So, it can be concluded that the hybrid learning model with 3-dimensional media is included in the high category for improving students' psychomotor skills in electric motor installation subjects. So that the hybrid learning model can be a reference for teachers or educators in the use of media-assisted learning models.

Psychomotor Test Results for Hybrid Learning Model Class with Video Tutorial Media

In this class students are given an example of assembling a forward-reverse motor panel using video tutorial media. The following are the results of the student's psychomotor test after being given treatment:

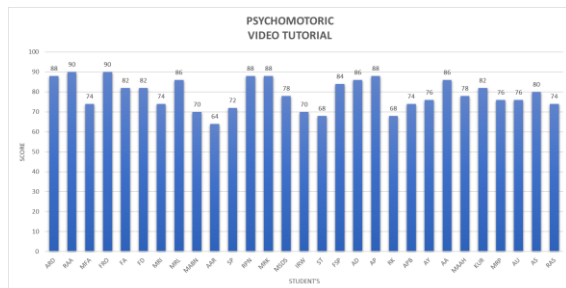


Figure 7. Psychomotor Test Video Tutorials Media

The figure shows the psychomotor test results of students taught using a hybrid learning model with video tutorial media. The average grade for that class is 79.03 with the highest score being 90 and the lowest score being 64. So, it can be concluded that the hybrid learning model with video tutorial media is in the high category. So that the hybrid learning model can be a reference for teachers or educators in the use of media-assisted learning models.

The Effectiveness of the Hybrid Learning Model

The effectiveness of the hybrid learning model is carried out to see which model is good for use in the learning process. Decision-making effectiveness is taken from the average cognitive and psychomotor scores of students. The following is the average value of students' cognitive and psychomotor results:

Table 4. Student Cognitive Outcome

Media	Min	Max	Avg
3 Dimension	36	91	67,76
Video Tutorial	23	73	51,03

The data above shows the minimum score, maximum score, and average score of the cognitive and psychomotor results of students who were taught with the hybrid learning model assisted by 3-dimensional media and video tutorials. On the cognitive outcomes of students who were taught using the hybrid

learning model with 3-dimensional media, the minimum score was 36, the maximum score was 91 and the average score was 67.76. Then in classes taught using the hybrid learning model with video tutorial media, a minimum score of 23 was obtained, a maximum value of 73 and an average value of 51.03. From these two data it can be concluded that the hybrid learning model with 3-dimensional media is effective to use, because it has a good impact on students' cognitive outcomes.

Table 5. Student Psychomotor Results

Media	Min	Max	Avg
3 Dimension	72	98	86
Video Tutorial	64	90	79,03

The media-assisted hybrid learning model is also considered to be able to improve students' psychomotor or skills. The data above shows the results of the skills of students who have been taught using the media-assisted hybrid learning model. In the class taught using the hybrid learning model with 3-dimensional media, a minimum score of 72 is obtained, a maximum value of 98 and an average value of 86.00. Furthermore, in classes taught using the hybrid learning model with video tutorial media, a minimum score of 64 was obtained, a maximum value of 90 and an average value of 79.03. So, it can be concluded that the hybrid learning model with 3-dimensional media is effective for use in learning, because it can improve students' psychomotor skills or.

The effectiveness of using media-assisted hybrid learning models can be used by educators or teachers in the learning process. The data above can help teachers to choose which media is most suitable for use. The data above shows that the hybrid learning model with 3-dimensional media is considered effective for use in the learning process. This is because the hybrid learning model with 3-dimensional media can increase students' cognitive and psychomotor values. This is in line with research conducted by (Rahayu et al., 2019) which suggests that 3-dimensional media can increase student motivation, interest and learning outcomes.

The hybrid learning model combines two or more different learning methods, such as face-to-face learning and online learning. This allows students to study in a way that is more flexible and suits their needs. In this study, a treatment was carried out in the form of providing media-assisted learning models in the learning process. This model is a hybrid learning model with the help of 3D media and video tutorials. After that, this media-assisted hybrid learning model is associated with personality, cognitive and psychomotor. This is done to see whether or not there is an effect of the model (Enneking et al., 2019)

The media-assisted hybrid learning model can change students' personalities. The hybrid learning model with 3-dimensional media is about 71% of students experiencing personality changes towards the better. Then in the hybrid learning model with video tutorial media, around 72% of students experience personality changes after being given treatment. Student personality change is a natural process that occurs during their growth and development. However, there are several factors that can cause students' personality changes to not occur, including: 1) Lack of motivation: If students do not have the motivation to change themselves or are not interested in self-development, then personality changes will not occur. 2) Stagnant environment: If students grow and develop in an environment that is less likely to develop themselves, such as an authoritarian family environment or a school environment that does not pay attention to students' needs, then personality changes will not occur. 3) Resistance to change: If students have an attitude that resists change, either because of fear or disinterest, then personality change will not occur. 4) Lack of social support: If students do not get social support from parents, teachers, or peers in developing themselves, then personality changes will not occur. 5) Mental health problems: If students experience mental health problems, such as depression or anxiety disorders, then personality changes will not occur optimally because these problems can hinder students' personal and social development (Bhagat et al., 2019).

Changes in student personality can be influenced by many factors, both internal and external. The following are several factors that can affect changes in student personality: 1) Environment: The environment in which students grow and develop, be it the family, school, or community environment, can affect changes in student personality. A positive and supportive environment can help students grow and develop well, while a negative and unsupportive environment can hinder personality change. 2) Education: Quality education can help students develop the social, emotional, and cognitive skills necessary for positive personality change. Education can also help students discover their interests and talents, as well as broaden their knowledge and experiences. 3) Life experiences: Life experiences, be they positive or negative experiences, can affect changes in students' personalities. Positive life experiences can help students develop a positive personality, while negative life experiences can hinder personality development. 4) Social relations: Social relationships, be it with family, peers, or teachers, can affect changes in student personality. Positive and supportive relationships can help students grow and develop well, while negative relationships can hinder personality change. 5) Genetics: Genetic factors can also influence student personality changes. Certain personality tendencies can be inherited from parents or families, and can influence how students respond and react to their environment and life experiences. And 6) Mental health: Students' mental health can affect changes in their personality. Mental health problems, such as anxiety, depression, or behavioral disorders, can hinder student personality development, while good mental health can help students develop themselves positively (Keller & Karau, 2013).

The relationship of the hybrid learning model to students' cognitive is considered quite good. In this study, the use of a hybrid learning model assisted by multimedia-based media had quite a good impact on students' cognitive. Research has shown that hybrid learning models can have a positive impact on students' cognitive outcomes. By using digital technology and

face-to-face teaching, the hybrid learning model can help students gain better knowledge and improve their ability to master subject matter. Research conducted by (Nashir & Laili, 2021) shows that the hybrid learning model can improve student learning outcomes in higher education.

The hybrid learning model is also associated with students' psychomotor skills or skills. In this study, the use of a hybrid learning model assisted by 3-dimensional media and video tutorials can improve students' skills. This is because, in the hybrid learning model, students use digital technology to acquire and interact with learning materials. Then the hybrid learning model gives students the opportunity to study independently through online learning. Students can learn independently and take responsibility for their own learning, thereby enhancing their self-learning skills (Plummer et al., 2021)

4. CONCLUSION

The hybrid learning model that combines face-to-face and online learning can provide various benefits for students. This model can change students' personalities, then can help improve student learning outcomes in various subjects, as well as help students develop skills such as information and communication technology (ICT) skills, independent learning skills, collaboration, and communication skills, as well as critical and creative skills.

Every individual has a unique personality combination, but there are some personalities that tend to dominate and influence a person's behavior and actions. Student personality cannot be seen as something fixed and unchanging. Personality can develop and change with time and life experiences. In dealing with factors that can hinder students' personality changes, educators and parents can provide support and motivation to students, provide an environment that allows for self-development, and help students overcome mental health problems. That way, student personality changes can occur naturally and positively. In this study, several changes in

students' personalities were found after being given treatment in the form of a hybrid learning model with the help of 3-dimensional media and video tutorials. In the hybrid learning model class with 3-dimensional media, changes in student personality change for the better. Previously, most students had a melancholy personality, then changed towards sanguine and choleric. Likewise, classes taught using a hybrid learning model with video tutorial media, many students have changed their personality type towards sanguine and choleric. So, it can be concluded that the hybrid learning model with the help of 3-dimensional media and video tutorials can positively change students' personalities in a better direction, so that students can be motivated and enthusiastic about participating in learning.

Hybrid learning models assisted by 3-dimensional media and video tutorials are also included in the medium and low categories in improving student learning outcomes or cognitive tests in electric motor installation subjects. This is because Vocational High School students don't really like theoretical material, they prefer to do practice. It is proven by the influence of 3D media-assisted hybrid learning models and video tutorials on student skills, both of which are in the high category. This proves that vocational students prefer practical material compared to theory.

We hope that in the future the hybrid learning model assisted by 3-dimensional media and video tutorials can be applied to other productive subjects. Then this research can be developed or applied in other schools. So that the hybrid learning model assisted by 3-dimensional media and video tutorials is more valid and useful to use.

ACKNOWLEDGEMENTS

The author thanks to State University of Medan. And special thanks to Badan Pengkajian dan Penerapan Teknologi (BPPT) and Lembaga Pengelola Dana Pendidikan (LPDP) Republik Indonesia for providing sponsorship for the publication of this article.

Reference

- [1] Ajzen, I. (2005). *Attitudes, Personality and Behavior*. Open University Press.
- [2] Arispe, K., & Blake, R. J. (2012). Individual factors and successful learning in a hybrid course. *System*, 40(4), 449–465. <https://doi.org/https://doi.org/10.1016/j.system.2012.10.013>
- [3] Atchley, T. W., Wingenbach, G., & Akers, C. (2013). Comparison of course completion and student performance through online and traditional courses. *The International Review of Research in Open and Distributed Learning*, 14(4 SE-Research Articles). <https://doi.org/10.19173/irrodl.v14i4.1461>
- [4] Bhagat, K., Wu, L., & Chang, C.-Y. (2019). The impact of personality on students' perceptions towards online learning. *Australasian Journal of Educational Technology*, 35, 98–108. <https://doi.org/10.14742/ajet.4162>
- [5] Bolliger, D. U., & Erichsen, E. A. (2012). Student Satisfaction with Blended and Online Courses Based on Personality Type / Niveau de satisfaction des étudiants dans les cours hybrides et en ligne basé sur le type de personnalité. *Canadian Journal of Learning and Technology / La Revue Canadienne de l'apprentissage et de La Technologie*, 39(1), 1–23. <https://doi.org/10.21432/t2b88w>
- [6] Enneking, K. M., Breitenstein, G. R., Coleman, A. F., Reeves, J. H., Wang, Y., & Grove, N. P. (2019). The evaluation of a hybrid, general chemistry laboratory curriculum: Impact on students' cognitive, affective, and psychomotor learning. *Journal of Chemical Education*, 96(6), 1058–1067.
- [7] Kazu, İ. Y., Kurtoğlu, C., İi, Y., İbrahim, -I, Kazu, Y., & Prof, A. (2022). Investigation of the Effectiveness of Hybrid Learning on Academic Achievement: A Meta-Analysis Study. Cemre Kurtoğlu Yalçın, English Teacher, Ministry of National Education International Journal of Progressive Education, 18(1), 2022. <https://doi.org/10.29329/ijpe.2022.426.14>
- [8] Keller, H., & Karau, S. J. (2013). The importance of personality in students' perceptions of the online learning experience. *Computers in Human Behavior*, 29(6), 2494–2500. <https://doi.org/https://doi.org/10.1016/j.chb.2013.06.007>
- [9] Listiwikono, E. (2022). Analysis of mathematical spatial ability in terms of choleric and melancholic personality types in junior high school students. *Linguistics and Culture Review*, 6(S5), 194–204.
- [10] Meredith, B. P. (2011). Personality types as an indicator of online student success and retention. *ProQuest Dissertations and Theses*, 144. https://search.proquest.com/docview/862744346?accountid=10673%0Ahttp://openur1.ac.uk/redirect/athens.edu/?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+%26+theses&sid=ProQ:Education+Database&atitle=&title=Personalit
- [11] Nashir, M., & Laili, R. N. (2021). Hybrid learning as an effective learning solution on intensive English program in the new normal era. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 9(2), 220232.
- [12] Nurdin, N., Samad, I. S., & Sardia, S. (2020). Logical Reasoning Analysis Based On Hippocrates Personality Types. *Aksioma*, 9(2), 57–73.
- [13] Oktaviana, D., & Susiaty, U. D. (2017). Perbedaan Prestasi Belajar Matematika Ditinjau Dari Tipe Kepribadian Siswa Dalam Pembelajaran Matematika. *SAP (Susunan Artikel Pendidikan)*, 2(2), 127–133. <https://doi.org/10.30998/sap.v2i2.1681>
- [14] Plummer, L., Smith, L., Cornforth, E., & Gore, S. (2021). Teaching psychomotor skills in a virtual environment: An educational case study. *Education Sciences*, 11(9), 537.
- [15] Rahayu, T., Mayasari, T., & Huriawati, F. (2019). Pengembangan Media Website Hybrid Learning berbasis Kemampuan

- Literasi Digital dalam Pembelajaran Fisika. *Jurnal Pendidikan Fisika*, 7(1), 130. <https://doi.org/10.24127/jpf.v7i1.1567>
- [16] Sasmoko, Noerlina, Indrianti, Y., & Wahid, N. H. A. (2020). Indonesian vocational engagement (I-vocatie): A new concept in improving teacher competencies 4.0. *Journal of Technical Education and Training*, 12(3 Special Issue), 97–105. <https://doi.org/10.30880/jtet.2020.12.03.010>
- [17] Sibuea, A. M., Amin, M., & Mustaqim, B. (2021). *Metodologi Penelitian Pendidikan: Pendidikan Teknik Elektro*. Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) UNIMED.
- [18] Yunika, E., Iriani, T., & Saleh, R. (2020). Pengembangan Media Video Tutorial Berbasis Animasi Menggunakan 4D Untuk Mata Kuliah Praktik Batu Beton the Development of Animation Based Video Tutorial. *SNITT-Politeknik Negeri Balikpapan*, 299–306. <https://jurnal.poltekba.ac.id/index.php/prosiding/article/view/1035/639>