AI Utilization and *Ikigai* Concepts Application for Middle-Last Adolescents in Determining The Future

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Abstract

Artificial Intelligence (AI) currently helps humans in solving problems. Among Indonesian students, AI is still limited in its use for completing school assignments, and has not been used to develop identity and self-concept for the future. This research aims to integrate the use of AI and the Japanese cultural concept of Ikigai for middle adolescent students in making decisions in the future. Through ChatGPT, students are invited to seek knowledge about various fields of study to determine the field of study they will pursue in higher education according to their interests and aspirations. This research was carried out using questionnaires and socialization methods. Questionnaires were given to explore each student's self-concept and socialization was provided about the Japanese cultural concept of Ikigai and the use of AI to help open students' insight into fields of study that suit their interests and aspirations. Through ChatGPT, it is easier for students to find a field of study that suits their interests and aspirations and through the concept of ikigai, students can understand their identity and self-concept so they are able to determine their future. Present Time's Artificial Intelligence (AI), if used properly, will really help human problems, especially for students in the transitional age from adolescence to adulthood who must determine their future from the start with full awareness and responsibility.

Keywords: Artificial Intelligence; Ikigai Concept; Middle Adolescence; Self-Concept; Self-Perception

A. Introduction

intellectual With development, humans also develop everything that can facilitate the activities and needs of human life. One of the results of human creation that was deliberately created to facilitate all human needs is Technology of Artificial Intelligence The aim of creating AI (AI). technology is 1) to help humans in their daily routines; 2) make machines smarter than ever before; 3)

and help with complex human problems (Hakim, 2022:2).

Many studies have reviewed AI and its use in human life, one of which is how AI helps humans in the learning process. Hapsari et al (2024) in their Literature Review concluded that teaching and learning activities using AI can create an interesting and innovative learning process, thereby creating a sense of satisfaction and interest which then increases students' learning motivation. Research conducted by Fatmawati et al (2024) on the Role of AI in Personalizing the Learning Process found that the integration of AI technology can provide a more personalized, adaptive and focused learning experience, which in turn increases student engagement and academic achievement.

Hakim's (2022) presentation on the Role of Artificial Intelligence in Education states that for students, educational technology can help them control and monitor their own learning, enabling them to live and work well in the future.

Next is the application of AI technology in the teaching and learning process carried out by Pratama et al (2023), in their article entitled Exploring the Potential of Teaching and Learning with AI Technology, seeking to ensure that the use of AI Technology is free from bias and discrimination, negative reactions from students and teachers, as well as excessive dependence on AI, and turning it into use in exploring students' learning potential.

The results of a survey conducted by the University Public

Relations Team 17 August 1945 in 2024 regarding the use of AI as a medium to increase creativity and productivity concluded that students AI utilized technology using ChatGPT, Gemini, Dall-E, and Persplexity to search for information in carrying out assignments, look for references. answering difficult questions, can even be used to express feelings and turmoil.

From several references that review the use of AI in everyday life, it can be concluded that AI really helps humans in carrying out their daily lives, especially when humans encounter obstacles, problems and obstacles. Most of the results of AI research and community service are used to improve learning outcomes.

The research carried out by Umul Khasanah and Novi Andari in 2024 has similarities and differences with research and community service carried out by other teams previously. Our research collaborates, integrates and utilizes AI technology to explore students' interests and talents using the ikigai concept adopted from Japanese culture which is applied to students in the teenage to adult age range (Adolescent).

The Ikigai concept is a Japanese concept of life that can provide satisfaction in achieving life goals. According to Professor Akihiro Hasegawa (2001) from Toyo Eiwa University, ikigai is used to indicate the source of value in a person's life that makes his life valuable. Kobayashi in Endo (2015) states that ikigai is the meaning and value of a life full of satisfaction. Mogi Ken (2017) added that the ikigai concept is applied for a balanced, happier and longer life. Ikigai according to Hector Garcia and Francesc Miralles in their book entitled Ikigai - The Japanese Secret of a Happy and Long Life is "what we like"; "what the world needs"; "what can we produce"; and "what can we do".

The concept of ikigai in Japan is given since someone is in junior high school so that they determine the right field according to their interests and talents that they must choose and carry out when they are in high school. The concept of ikigai is given to young people who are looking for identity and meaning in life (Garcia & Miralles, 2017) in the process of selfgrowth and self-improvement.

In Japan, the concept of ikigai is given to middle school students because at this time a person is in the unstable stage of transition from childhood/adolescence to adulthood. Meanwhile, junior high school students must be able to determine the field they will pursue at high school level. The characteristics of junior high school students aged 12-14 (early adolescents) are an identity crisis. an unstable soul. the importance of close friends/friends, the influence of peers (Batubara, 2010: 27). In Indonesia, during high school, there are majors such as science, social studies. and/or language, so that junior high school students in Indonesia will also enter these majors when they are in high school. However, there is no special assistance for junior high school students to determine the field that suits their interests and talents that they will choose in high school, there is only assistance to prepare for the high school they will go to. Meanwhile, majors are determined

according to the best grades depending on the field they will study.

Determining and selecting the field of study that they are mentoring is given seriously when students are in high school, where they will continue their studies at university focusing on only one field. Based on the phenomenon of the education system in Indonesia, this research used high school student respondents from grades 10 to 12. Apart from the phenomenon of the education system in Indonesia, another consideration for selecting high school student respondents was their mature character.

High school students are in the middle – last adolescent period, namely in the age range 15 – 18 years. The character at the middle – last adolescent stage is selective and competitive, starting to be interested in intelligence and career, starting to have the concept of a role model, starting to be consistent in ideals, selfidentity becomes stronger, able to think of ideas, able to express feelings with words, more consistent with their interests, proud of the results achieved, more stable emotionally, and already paying attention to the future and desired role (Batubara, 2010:27).

Even though the character of students in their middle to last adolescent age can be declared ready to determine their future, they still need information media that can help them further solidify themselves in deciding to enter a particular field. Currently, artificial intelligence (AI) technology was created to help humans solve their problems. In this case, students can utilize AI media to search further and precisely about the fields they are interested in pursuing further.

This article will discuss further and in more detail about the use of AI and the application of the integrated ikigai concept to help high school students with middle-last adolescent characteristics in determining their future through full understanding and awareness in choosing and determining a field of study that suits their interests. and his talents to provide him with a good future.

B. Research Method

This research uses а qualitative descriptive research method which focuses attention on actual problems as they exist while the research is in progress and the results are presented in the form of verbal descriptions (Salim & Haidir, 2019). The actual problem that is currently the topic and focus of this research is the use of AI to help students determine the future. Another actual problem is the application of the Japanese cultural concept of ikigai to high school students in determining their future. So there are 3 actual problems discussed in this research in the form of integration and relevance of the three.

- 1. How can AI be used to determine the future?
- 2. How can the Japanese cultural concept of ikigai help students find their identity and determine their future?
- 3. What is the character of middlelast adolescent students and their readiness to face the future?

This research describes each phenomenon without giving special

treatment to the phenomenon. Qualitative research aims to gain a understanding of social general reality, namely the use of AI, application of the ikigai concept, and character of middle-last the adolescent students from the perspective of researchers and participants, namely students as research respondents. Understanding is obtained after analyzing the social reality which is the focus of the research. Then, conclusions are drawn from the results of the analysis in the form of a general and abstract understanding based on the reality that emerges. This research aims to describe. record. analyze, and interpret the relevance between the use of AI, the application of the ikigai concept, and the character of middlelast adolescent students to determine the future.

The data sources used are related literature, including various types of AI media and how they are used, aspects and concepts of ikigai that can be applied to the growth and self-discovery of high school students, and literature that describes the character of middle-last adolescent students in determining future. This literature is primary data, while secondary data is in the form of questionnaires distributed to research subjects as respondents to explore students' understanding of selfperception.

C. Results and Discussion

This section will explain one by one the 3 phenomena mentioned in the objectives of this research, namely, 1) Utilization of AI; 2) Application of the Ikigai Concept; 3) Characteristics of Middle-Adolescent Stage Students. Then the relevance of the three will be found which is linked to students' success in finding their identity and determining their future.

1. Utilization of AI

First, we will discuss various AI media that can be accessed by the Indonesian people, especially students, namely ChatGPT, Gemini, Dall-E, and Persplexity.

ChatGPT

ChatGPT, a form of AI developed by Open AI, is designed to provide relevant and informative answers based on questions or requests in various text-based contexts, generating ideas and content, to language translators. ChatGPT can also help in providing suggestions, producing creative text, and can also interact in conversations. ChatGPT as a natural language model is able to respond to requests by producing text that follows the given context and language style (umnadmin, 2023).

ChatGPT can help find information quickly and efficiently to complete tasks, find difficult things, and help deepen understanding of a particular subject or object. ChatGPT also acts as a personal learning assistant that can help with exam preparation such as learning new material that is difficult to understand. ChatGPT is also a source of inspiration in generating new ideas and finding solutions to complex problems faced by writers, artists, or other creative professionals.

Gemini

It is an artificial intelligence platform developed by Google Deepmind which was released on March 21 2023. Gemini is able to understand and respond to conversations and interact more naturally and responsively, as if the user were talking to a real human (Muhtar, 2024).

Gemini can be accessed via the official website gemini.google.com. Creating a Gemini account is relatively easy by following the available registration procedures. Once they have an account, users can enter questions or keywords. Wait a few moments and the results will appear in the form of text, images, or information relevant to the user's search.

Dall-E

It is an artificial intelligence system in the form of generative images developed by OpenAI. Launched in January 2021, it can help produce very creative and unique images based on natural language input from users (Mampuono, 2023).

Dall-E produces unique and interesting images based on natural language input starting from words, phrases or sentences in English that describe certain objects, characters and situations. In addition to realistic images, users can use Dall-E to produce abstract and complex images such as 2D objects, paintings or illustrations that were previously impossible to produce by machines or humans with high resolution quality. Not only does it produce images based on natural language, Dall-E is also equipped with editing features, such as removing backgrounds, changing size, appearance, color and filters using the variation button.

Perplexity

Perplexity focuses on natural language processing with a high level of complexity that is capable of understanding and answering very complex questions. This AI is becoming the main choice in academic and research environments with excellent performance in data analysis and natural language processing

(bms.telkomuniversity.ac.id).

Perplexity was designed to offer more interactive and а structured search experience. Accuracy from using perplexity to being able to analyze user data, search history, and preferences to provide relevant search results for fact-based content creation. Based on language abilities, perplexity has the ability to reason well in language and is

efficient in solving problems or answering questions that require logic.

2) Application of the Ikigai Concept Ikigai concept

Akihiro Hasegawa, a clinical psychologist and professor at Toyo Eiwa University was the first person to discover the concept of ikigai. Research on ikigai began in 2001 which then made ikigai a Japanese colloquial language which means life values that make a person's life valuable which refers to mental and spiritual states, not related to material or financial status (Kemp, 2019).

The concept of ikigai is used by Japanese people as a natural and spontaneous action in facing difficult situations but still being able to feel grateful for their life. Japanese people have relatively high life pressures, such as competing with other people in everything, work pressure that demands a strong hierarchical structure, and being required to be able to complete work that is usually done by 5-6 people.

With the pressures faced by Japanese society, they need selfgenerated motivation to solve their psychological problems. Ikigai is a view of life for Japanese people that makes it easier for them to understand the purpose of life. With the concept of ikigai, Japanese people are able to see the wisdom in the future even though they are currently suffering.

Kobayashi's view in Endo (2015: 1) states that someone will feel ikigai when they are needed by other people. In fact. changes in experiences and emotional ups and downs enable a person to continue moving forward. With various emotional feelings and hopes it can make someone feel full of satisfaction.

Kamiya in Kumano (2014:2) describes these emotional feelings into 7 types of feelings, namely satisfaction, development, change, futuristic, social interaction, freedom, and self-realization. Kumano in Endo (2015:2), the acquisition of these 7 flavors pays attention to good interpersonal interactions that produce meaning that fosters a sense of satisfaction. This means that someone who can be of benefit to other people, in the concept of ikigai, is called the emergence of satisfaction in life.

Ono in Kumano (2014:2) connects feelings and life satisfaction in various meanings and problems, namely ontological meaning, adolescent ego problems, social problems, especially in adulthood. Self-affirmation is a process when a person is young, which integrates a healthy ego identity with a sense of self-fulfillment. The sense of fulfillment in adolescents is seen from the perspective of emotions and adolescence. identity during Α person's existence during adolescence provides psychological energy fulfillment. Personality formation in adolescence is oriented towards caring for others which can influence the modalities of young people's sense of life and the formation of a sense of motivation.

Ikigai Element

There are 4 concepts in ikigai where if someone can apply all four then that person has lived life in an ikigai manner, namely avoiding worry, always being optimistic, and throwing away negative thoughts, so that they have a happy life goal and are always happy. These 4 elements include: 1. Suki na Koto (好きなこと) What

we like?

This first concept requires us to understand our identity and selfperception which leads to understanding our interests or things that we like and become habits which are then called hobbies. A person must be able to recognize himself, especially what he likes, what things he likes to do, and what makes a person happy with what he likes to do.

2. Sekai ga Motomeru Koto (世界が

求めること) What world needs?

It is not enough to understand concepts, identity and self-perception through understanding interests, but also understanding whether our interest in a field can meet the needs of other people and many people. So the hobbies that we do with joy must be considered, will they also bring happiness to other people?

3. Kasegeru Koto (稼げること)

What is the reciprocity for us? Doing what we like, and what we like can make other people, even many people, happy, so reciprocity for us is an appreciation that other people give us. Appreciation can bring happiness back to those of us who carry out our interests and make other people happy.

4. Tokui na Koto (得意なこと)

What are our abilities?

Once we know what we like and make it a profession, we will know our abilities. When we gain appreciation for habits that we like, for example money, and are happy with them, we can be said to have found ikigai, even though we don't yet know whether the profession will be useful for other people.

Ikigai can be interpreted by someone from small things. As long as we can find the meaning of life from simple things that make us happy. Ikigai is simple, starting from small activities/hobbies that are carried out every day, socializing, and always thinking positively, everyone can have the concept of ikigai.

Hector Garcia and Prancesc Miralles (2017) added, someone can start from the following elements to find the concept of ikigai within themselves, including 1) Shimei (使 命) Mission; 2) Tenshoku (転職) Vocation; 3) Shokugyou (職業) Profession; 4) Jounetsu (情熱) Passion.

3) Characteristics of Middle-Last Adolescent Stage Students.

Adolescence is the period of adolescence, which is the transition period for children to adulthood & (Sofia Adiyanti, 2013). Adolescence is a development that occurs in the transition period from children to adults starting from the age of 12 years and ending at the age of 18 years (King, 2012). This period children experience changes both hormonally, physically, psychologically and socially.

Adolescence is divided into 3 stages, namely early adolescence, middle adolescence. and late adolescence (Soetjiningsih, 2010). Early adolescence starts from 12 to 15 years old. Middle teens start from 15 to 18 years old. Late adolescence starts at the age of 18 to 21 years. In early adolescence, teenagers are characterized by an identity crisis and mental instability. In middle adolescence, teenagers are described as starting to become interested in intelligence and careers. And in late adolescence, they are already paying attention to the future, including the role they want to play in the future. The research subjects discussed in this article are female students at the high school level whose age range is between 15 and 18 years. Therefore, we will focus on teenagers in the middle-last adolescent stage.

Adolescents at the middle-last adolescent stage have the following characteristics (Batubara, 2010).

- 1. Starting to be interested in intelligence and career
- 2. Already have a role model concept
- 3. Start being consistent with your goals
- 4. Self-identity becomes stronger
- 5. Able to think of ideas
- 6. Able to express feelings with words
- 7. Be more consistent with interests
- 8. Proud of the results achieved
- 9. Emotions are more stable
- 10. Look for opportunities to socialize and try new experiences (Soetjiningsih, 2010)

 Think about the balance between your own interests and those of others

4) Relevance between the Use of AI, Application of Ikigai, Middle-Last Adolescent Characteristics, and Determining Students' Future

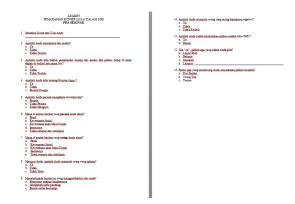


Figure 1. Student Self-Perception Data Questionnaire based on the Ikigai Concept

To obtain research data, a research instrument was created in the form of a questionnaire which was created to produce answers to the problems formulated. There are 13 questions in the questionnaire which contain several things, including:

- 1. Self-Identity
- 2. The concept of selfunderstanding is based on personal perception
- The concept of understanding Ikigai in oneself

4. Planning for the future by yourself

The respondents who were presented as research subjects as well as recipients of the form of ikigai implementation were 89 people, consisting of female students in grades 10-12. The initial step was to distribute a questionnaire with 13 questions which were answered directly by respondents in the form of a manual questionnaire. Then the questionnaire results are calculated according to the number of choices for the answer items. The following are the results of calculating the answers of the majority of respondents. This majority answer will describe the characteristics of students in grades 10-12 which are in accordance with the description of the characteristics of adolescents in the adolescent age.

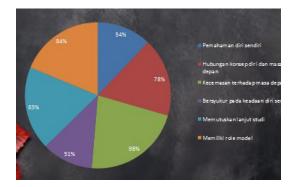


Figure 2. Calculation Results of Questionnaire Answers

Application was given in the form of a seminar and talk show which was held on May 9 2024, consisting of students from grades 10 to 12 with a student age range of between 15 and 18 years. Students aged 15 to 18 years are teenagers in the middle adolescent period which is the transition period from child to adult. During this period, children experience changes in behavior and relationships with social their environment.

Adolescence is a period where a person determines his future. At this time in Japan the concept of ikigai was applied which aimed to help teenagers determine their future well. For Japanese society, the concept of ikigai is applied to realize values and benefits so that someone carries out and faces or welcomes the future with happiness. The concept of ikigai has 3 concepts, namely avoiding worry, always being optimistic in every situation, and throwing away negative thoughts.

These three ikigai concepts are applied in adolescence to prepare

the young generation to be happy but still able to determine their future consciously. Students at SMU Muhammadiyah 2 Taman Sidoarjo with ages ranging from 15 to 18 years are middle adolescents who are already interested in intellect and career, have started to have the concept of role models, and are starting to be consistent in their ideals (Batubara, 2010:27).

The aim of this research is to determine the characteristics of students at SMU Muhammadiyah 2 Taman Sidoarjo who are in the middle adolescent age range, as well as provide application of the ikigai concept, and assess the suitability between characteristics and application of the ikigai concept through exploring individual selfunderstanding in the form of questionnaire questions.

The following are the results of the analysis of the questionnaire answers based on the majority answers given by respondents.

 The majority of respondents are aged 17 years, where this age is in the middle adolescent period where at this age a person is interested in intelligence and career, has started to have the concept of a role model, and is starting to be consistent in his ideals. The number of respondents aged 17 years was 44 people out of the total number of respondents 89 people, the other answer choices were between the ages of 15, 16 and 18.

- 2. The answer "not really" shows a person's instability in understanding themselves because they are still in the adolescent stage, which is still in the transitional stage towards adulthood. Respondents answered "not really" as many as 48 people out of 89 total respondents, or 53.9% of the total respondents.
- 3. However, respondents realized that understanding themselves was the first step in determining their life choices in the future. This is shown by the majority answering "yes" which was 77.5%.
- Middle adolescent teenagers in the respondents on average have and often experience feelings of worry, panic, social anxiety and social anxiety. 97.8% of respondents had

experienced worry. 66% have experienced panic, social anxiety and future anxiety. However, only 47% of respondents often experience these three things. This shows that teenagers in middle adolescence are still in the transitional stage of maturity so they are still experiencing instability.

- 5. Questions 8, 9, and 10 illustrate that respondents are still in a transition stage so the answers given include: "don't know" when asked to assess whether they are an optimistic person. Choosing the answer "be grateful whatever the circumstances" is still an unstable answer compared to the other answer choices, namely: changing your perspective and daring to dream. And the answer "not really" to the question of whether they are someone who often thinks negatively can still be categorized as an indecisive answer, because they are still confused about themselves.
- 6. However, questions 11 and 12 show that they are starting to be interested in intellectuals and

careers and are consistent with their ideals, judging from the majority of respondents' answers, 85% who have made their choice after graduating from high school, and 83% who have decided to continue. studies after graduating from high school. Parents are still the biggest reason for them in determining future choices, because at this age respondents already have the concept of role models.

The connection with the concept of ikigai is in the form of worry, optimism and negative thoughts. From the answers to the 13 questions in the questionnaire, it can be concluded that between the characteristics of adolescents at the adolescent stage, respondents, and the concept of ikigai, it can be concluded that most of the respondents are in accordance with the characteristics of middle adolescents, namely they are interested in intelligence and career, have started to have the concept of role models, and starting to be consistent in ideals (Batubara, 2010:27). Respondents have determined their goals after graduating from high school and most have decided to continue their studies at university, this shows that respondents are interested in intellect and ideals. Regarding the concept of ikigai, respondents have quite high optimism.

Two other ikigai concepts, namely worry and negative thoughts, respondents still often some experience panic, social anxiety, and future anxiety at 59% and 42%. In the transition period between adolescence and adulthood, it is normal for respondents in middle adolescent age to still experience this feeling where they are still trying to grasp the future through their desires to move forward by continuing their studies even though their parents are still accompanying them on this decision.

Students with characters who are starting to be interested in intelligence and careers, are starting to be consistent with their ideals, are able to think of ideas, and are more consistent with their interests need media that can facilitate them in determining the choice of field of study that suits their interests and abilities. Currently, artificial intelligence or AI media provides assistance for humans to solve problems, one of which is information about fields of study that suit students' interests and talents. Like ChatGPT, students can get relevant and informative answers based on questions or requests in various contexts and languages.

Gemini-AI can also be used for searches that suit the characteristics of middle-last adolescent students who need someone to talk to, so Gemini-AI can help students gain enlightenment as if they were talking to real people.

Dall-E and Perplexity are more focused on providing assistance. Dall-E can be used by students who are talented and have an interest in drawing or in the field of design to improve their abilities. Perplexity is a medium that can improve the logic and reasoning of students who will enter the world of more expert academics who will work a lot in the analysis process and respond more interactively with more structured answers.

D. Conclusion

No one has discussed the relevance of using AI to support students' interests and talents. This article specifically presents the results of research that integrates the use of AI and the application of Japanese Ikigai culture for students in mature namely the middle-last age, adolescent stage aged 15 to 18 years in determining the field of study they will choose in higher education which can support their future in accordance with his interests and talents.

The AI that is widely used and accessed by Indonesian people is ChatGPT, Gemini-AI, Dall-E, and Perplexity, all four of which can be used by students to search for information about fields of study that suit their hobbies and abilities. AI can help students as if it were consulting a real human.

The Japanese cultural concept of Ikigai, which means happiness in the present and the future, is given to students in the middle-last adolescent age range, namely the age range of 15 to 18 years because students at this stage are the ones who determine their own future. High school students are prepared to determine their future with full awareness so that they can carry out their choices responsibly and happily because students at this age are more stable and are already at the stage of having goals.

Respondents from Muhammadiyah 1 Taman Sidoarjo High School students who were randomly selected from grades 10 to 12 had an age range of 15 to 18 years in accordance with the age range of middle-last adolescent. In accordance with their character, students at the high school level are more stable and prepared to determine their future starting from high school so that they can make life choices to continue their studies at university in a field they like and suit their abilities. So that from high school students can make their choices and carry them out with full happiness and satisfaction in the future.

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