

Analysis of The Development of Non-Cognitive Assessment Instrument to Support Online History Learning in Jambi City High School

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ABSTRACT

This research is important to do because (1) there is a lack of an accurate non-cognitive skill assessment tool to assess non-cognitive skills in online learning; (2) it is difficult for teachers to measure students' cognitive skills during online learning due to the limited assessment tools available; and (3) only a few instruments have been developed to measure non-cognitive skills in social science learning, particularly history learning. Based on this gap, it's critical to examine the creation of non-cognitive skills evaluation instruments, particularly for use in online history classes. We collect data through surveys and questionnaires, answering questions. The study's subjects were Jambi City Senior High School teachers, a group of 15 from five different schools. Proportional Random Sampling Strategy is the sampling technique used in this study. An observation sheet and a questionnaire sheet were utilized as research instruments in this study. The questionnaire sheet consists of a questionnaire sheet to collect data on non-cognitive skills. The results of the study were examined using descriptive statistical methods. Non-cognitive skills are critical to acquire in online learning, according to the findings of the study. According to the research, 81.67% of teachers strongly believe that non-cognitive skills have an impact on student success. Non-cognitive qualities including discipline, independence, time management, teamwork, motivation, and technological skills are identified by 84.44 % of teachers as having a significant impact on the success of online learning. According to the teacher, 93.3% strongly agreed to create an assessment instrument to test this skill. The importance of non-cognitive instrument development is evident from the preceding discussion.

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1. INTRODUCTION

Non-cognitive skills have a big influence on academics, health, and jobs. The government, as curriculum makers, schools, and teachers, as educators, must all work together to help students reach their full potential. The goal of national education is to produce students who are not only academically excellent but also think critically, solve issues, and have a humanistic mentality. Several studies have found that non-cognitive skills like motivation, self-efficacy, discipline, independence, communication, collaboration, and digitalization have been proven to be important in achieving success (Ng & Chu, 2021; Zhao & Wang, 2022). Not simply knowledge transfer but also habituation activities are required to improve these noncognitive skills. However, the COVID-19 pandemic has shifted the learning system away from face-to-face instruction and toward online instruction. During the COVID-19 Pandemic, SMA in Jambi City used online learning. Teachers at SMA Kota Jambi employ apps like Zoom, Google Classroom, Google Meet, WhatsApp Groups, Instagram, and Facebook to boost online learning. Advanced technology has made online learning more user-friendly since students may access learning materials regardless of location or time (Hwang, Wang & Lai, 2021).

Online learning appears to present a significant challenge to students' non-cognitive abilities. The lack of direct interaction between teachers and students contributes to the creation of a variety of issues when it comes to the implementation of online learning. According to the findings of interviews with several high school teachers in Jambi City, the problems with online learning are: (1) the lack of IT-based application skills among teachers and students; (2) the lack of discipline among students participating in online learning due to a lack of strict teacher supervision; (3) the number of students who arrive late in the online study room; (4) the lack of interest among students in learning because learning is boring and students only listen to the teacher's explanations; and (5) because students do not encounter one another during online presentations, there is a reduction in students' capacity to cooperate.

Some of the online learning issues discovered in the research suggest that most of the issues are non-cognitive. According to Misra & Mazelfi (2020), key hurdles in the distance learning process include communication between students and professors, group participation, and students' motivation to study independently. While non-cognitive skills play an important role in supporting the cognitive development and academic achievement of students (Heckman et al., 2006), non-cognitive skills have a significant impact on the learning process's success and student academic progress. Jencks (1979) discovered that non-cognitive abilities, including study habits, craft, and perseverance, had almost the same influence on student learning performance as cognitive skills. Self-discipline has been shown to be a key factor in determining one's success (Duckworth & Seligman, 2005). Similarly, poor behavior has a detrimental impact on future educational success (Bouchard et al., 2003).

Elements of personality and motivation are associated with higher success rates on educational, economic, and social dimensions (Cunha & Heckman, 2008). According to Wanzer et al. (2019), non-cognitive variables are favorably associated with students' academic achievement. High academic success is achieved by students who have a strong dedication to study. As evidenced by the research mentioned above, non-cognitive factors clearly contribute to student achievement in school.

However, so far, there has been little research on non-cognitive skills. There is no accurate assessment tool to measure non-cognitive skills, especially for students in high school. West et al. (2016) confirm that it is difficult for teachers to measure non-cognitive skills because teachers must consider the pros and cons as well as the element of subjectivity in measuring these skills. Several studies have stated that there is no reliable assessment instrument to assess this skill (Fan et al., 2006; Ouazad, 2014). The Big Five is one of the most widely used tools for assessing non-cognitive talents in several nations. Neuroticism, extraversion, openness, sociability, and conscientiousness are five qualities that are used as standards in measuring non-cognitive skills (Bouchard et al., 2003). The Big Five instrument, on the

other hand, is utilized when the teacher can see the pupils' development in real time. Meanwhile, because learning is currently done online, new relevant evaluation models to quantify these skills are required. Only a few studies on noncognitive skills assessment techniques in social science learning, particularly history learning, have been done. Hati (2021) created a Quizizz app that may be used to diagnose non-cognitive skills in social studies students. Anindita et al. (2021) used Google Forms to do research on non-cognitive assessment instruments. Non-cognitive skills assessment instruments that assess students' capability in studying history are still rare. Based on the preceding theoretical discussion, it is determined that a non-cognitive skill assessment instrument for online history learning is required. The goal of this research is to study and identify the need for relevant assessment instruments to measure non-cognitive skills in history learning, as well as to propose new innovations to address the weaknesses of existing instruments.

Literature Review

Non-Cognitive Skills

Non-Cognitive Skills have become a key indicator of educational attainment and academic success equivalent to cognitive skills (Heckman, Stixrud, & Urzua, 2006). It is estimated that by 2025 a combination of digital skills and non-cognitive skills in the world of work will be increasingly needed (Yue, 2022). Non-Cognitive Skills are defined as patterns of thoughts, attitudes, personality, social skills, feelings, and behaviors that affect a person's social interactions with others (Borghans et al., 2008; Gutman & Schoon, 2013). Several investigations have revealed that, non-cognitive abilities have been proven to have a significant impact on a variety of aspects of life, including academic success, health, and employment. Based on the findings of the theoretical study, non-cognitive abilities are an essential component in assisting students' learning achievement.

To develop this potential in students, the government as curriculum developers, schools as curriculum implementers, and teachers as educators should be concerned. National education aims to produce students who are not only academically excellent but also moral, noble in character, capable of critical thinking, problem solving, and with a humanistic attitude. As a result, non-cognitive skills are far more crucial for students to develop than cognitive skills. Several studies on non-cognitive skills in learning, like Sayekti (2019), found that students' capacity to solve arithmetic problems and increase their academic accomplishment was influenced by their self-efficacy. According to Permatasari's et al. (2016) research, motivation has a 19.3 % impact on student academic attainment, whereas learning strategies have a 30.6 % impact. According to Handarini's research (2019), non-cognitive elements such as motivation, self-efficacy, and interpersonal skills contribute to student academic accomplishment. Non-cognitive skills, according to theoretical research, are an important component in assisting student accomplishment that must be cultivated.

Online Education

During the Covid-19 epidemic, online learning has become a popular educational method. Online learning is defined by Ferri et al. (2020) as the diffusion of knowledge made possible by electronic media. The benefit of online learning is its convenience in terms of time and location. Online learning has been identified as an effective approach to increase learning quality (Belaya, 2018), allowing students to learn at their own speed (Indira & Sakshi, 2017), and giving students with a wide range of possibilities to expand their knowledge. However, if students and teachers are unable to use technology or do not have social connection and involvement in online learning, this form of instruction will negatively influence student learning results (Stewart & Bower, 2019). Teachers and students must be maturely prepared to carry out learning confidently. To conduct online learning, teachers and students must be well prepared. Several studies have found that online learning is one of the best methods for applying knowledge in an emergency. Covid-19 (e.g., Atsani, 2020; Heliandry et al., 2020; Magdalena et al., 2021). However, numerous internal and external aspects must be taken into consideration while implementing online learning. Self-motivation, self-discipline, time management skills, responsibility, independence, and digital abilities are all internal characteristics that teachers and students should be concerned about.

This is because with online learning, students do not attend school to study face-to-face, but instead participate in learning via internet technological media. Strong self-motivation is required since students' studying motivation would suffer if they do not see their pals in person. Furthermore, participation in online learning requires independence and time management skills. When students are at home, they frequently spend time resting, playing games, and socializing with their families. Students who are unable to manage their time and study independently will inevitably fail to achieve in the online learning process. To participate in the online learning process, these two criteria are required. Digital technology's capability is also a significant impact (Nguyen & Kieuthi, 2020). If students and teachers are unskilled in the use of digital technology, the online learning process will inevitably fail. Because digital technology media is the major medium in the learning process in online learning.

In addition to internal considerations, external variables influence the implementation of online learning. Parental assistance, fast internet access with a good network, and learning tools like smartphones or laptops are just a few examples (Agormedah et al., 2020). If these criteria are satisfied, online learning can be applied successfully. Based on the theoretical framework, it has been determined that online learning is the optimum option for executing the learning process during the COVID-19 pandemic. However, for the learning process to function smoothly and successfully, the government, schools, instructors, and students must all be prepared for implementation.

Assessment of non-cognitive skills

Assessment is a critical component of educational implementation. Specific assessments are conducted to see how far pupils have progressed on the competencies outlined in the program. The evaluation covers both cognitive and non-cognitive factors (attitudes and skills). Non-cognitive skills, in contrast to cognitive skills, have proven challenging to measure (West et al., 2016), and teachers must evaluate the pros and cons of assessing these talents, as well as the aspect of subjectivity. According to several research, there is no reliable assessment tool for measuring non-cognitive talents (Fan et al., 2014; Ouazad, 2014, Nisbet & Wilson, 1977). The Big Five is one of the most widely used non-cognitive skills assessment tools, and it is used to test non-cognitive skills in several nations. Neuroticism, extraversion, knowledge, friendliness, and awareness are the five characteristics used to assess non-cognitive skills (Bouchard et al., 2003). Non-cognitive skills have been investigated by psychologists for decades, but no consistent model to quantify them has been discovered. To promote the effectiveness of online learning, it is critical to develop non-cognitive model skills. There has been little research on noncognitive skills assessment techniques in social science learning, especially history learning. Hati (2021) developed a Quizizz app that may be used to diagnose social studies students' non-cognitive skills. Anindita et al. (2021) conducted a study on non-cognitive evaluation tools using Google Forms. Students' capacity to learn history is still assessed using non-cognitive skills assessment tools. Based on the above theoretical discussion, it is concluded that an online history learning non-cognitive skill assessment instrument is needed.

2. METHODS

A quantitative descriptive method was used in this study. Descriptive research is defined as research that uses observations, interviews, or questionnaires to collect information about current conditions related to the research subject. We collect data through surveys and questionnaires, answering questions. The researcher will explain the real situation that occurred during the investigation by using descriptive research. The purpose of the study was to determine the necessity for non-cognitive skills assessments. Three factors are examined: (1) the impact of non-cognitive skills on the online learning process; (2) the magnitude of non-cognitive skill aspects that influence the online learning process; and (3) the importance of developing non-cognitive skill instruments to support the effectiveness of online learning.

Jambi City Senior High School teachers, a group of 15 from five different schools, were the study's subjects. The study subjects were chosen based on the school's preparedness to implement online learning tools. Proportional Random Sampling Strategy is the sampling technique used in this study.

An observation sheet and a questionnaire sheet were utilized as research instruments in this study. The questionnaire sheet consists of a questionnaire sheet to collect data on non-cognitive skills. The results of the study were examined using descriptive statistical methods. The data acquired in the form of proportions is used to conduct a needs analysis. The percentage is calculated using the Likert scale that has been used. The magnitude of the variable to be measured is transformed into an indicator variable using a Likert scale. These indicators are also utilized as a reference for creating non-cognitive skills assessment instruments. The percentage calculation is based on Bakri et al., (2015)'s calculating pattern:

$$\text{Percentage (\%)} = \frac{\sum \text{Earning Score}}{\sum \text{Maximum Score}} \times 100\%$$

The following are the parameters for determining the percentage of response scores: (Sugiyono, 2010)

Table 1. parameters for determining the percentage of response scores

Percentage (%)	Category
0%-25%	Strongly Disagree
26%-50%	Disagree
51%-75%	Agree

3. FINDINGS AND DISCUSSION

The following are the results of the study of the teacher's response to the questionnaire on the needs analysis of non-cognitive skill development:

Analysis of the relevance of non-cognitive skills by teachers

Table 2 shows the results of the analysis of instructor replies to the questionnaire items about the importance of non-cognitive skills in online learning.

Table 2. Teacher responses to the importance of non-cognitive skills

No	Statement	Percentage	Category
1	Skills of non-cognitive aspects are important in learning online	85%	Strongly Agree
2	Non-cognitive skills have a big influence on the online learning process	85%	Strongly Agree
3	Skills are non-cognitive and important to increase the success of participants as learners.	75%	Agree
	Average	81.67%	Strongly Agree

Based on Table 2, keep in mind that the skills of non-cognitive are one of the skills important in learning online. An average of 81.67% of teachers agree that the skills of non-cognitive effect on the process of learning online.

Table 3. Teacher responses to aspects of non-cognitive skills in influencing online learning

No	Statement	Percentage	Category
1	In follow, learning online takes discipline.	86.67%	Strongly Agree
2	In follow learning online takes the attitude of an independent	76.67%	Strongly Agree
3	In follow, learning online takes the skills of management time that is good.	86.67%	Strongly Agree
4	In follow, learning online takes cooperation between Kantar students and students, as well as teachers and students.	73.3%	agree

5	In follow-learning online, it takes motivation that is stronger than the participant learners.	90%	Strongly Agree
6	Learning online takes skills to use technology that is good.	93.3%	Strongly Agree
Average		84.44%	Strongly Agree

Based on table 3, components of non-cognitive skills are critical for online learning effectiveness. Non-cognitive skills, according to 84.44% of teachers, have a significant impact on the effectiveness of the learning process.

Analysis of teachers' responses to the development of non-cognitive skills assessment instruments

The results of the analysis of teacher responses to the development of non-cognitive skills assessment instruments are presented in table 4.

Table 4. Teacher responses to non-cognitive skills assessment instruments

No	Statement	Percentage	Category
1	Teachers need to conduct assessment of the aspects of non-cognitive students.	85%	Strongly Agree
2	Teachers always do the assessment aspects of non-cognitive students.	30%	Disagree
3	Teachers already have instrument ratings that are good for measuring the skills of non-cognitive students.	23.3%	Strong Dissagree
4	Need to develop instruments for assessment of the skills of non-cognitive students to measure the skills of non-cognitive students.	93.3%	Strongly Agree

Based on to Table 4, teachers must examine non-cognitive skills. Table 4 also shows that high school instructors in Jambi seldom test non-cognitive talents since instrument ratings are insufficient to determine their potential. As a result, 93.3% of instructors believe their attempts to design instruments to measure skills are non-cognitive.

The research findings show that, non-cognitive skills are crucial skills to cultivate in online learning. According to the poll, 81.67% of teachers strongly agree that non-cognitive skills influence student achievement. Non-cognitive skills, such as discipline, independence, time management skills, teamwork, motivation, and technological skills, are highly agreed upon by 84.44% of teachers as having a major impact on the effectiveness of online learning. The findings of this study back up those of Spess (2019), who found that non-cognitive skills including discipline, self-control, independence, collaboration, and pupils' ability to protect themselves are important. According to Sayekti (2019), self-efficacy increased students' ability to solve arithmetic problems and boost their academic achievement. Permatasari et al. (2016) found that motivation has a 19.3% influence on students' academic achievement, whereas learning tactics have a 30.6 percent impact. According to Handarini's research (2019), non-cognitive elements such as motivation, self-efficacy, and interpersonal skills contribute to student academic accomplishment. According to a theoretical study, non-cognitive abilities are an important component in helping student achievement that must be developed.

According to Krskova et al, (2020), discipline is more essential than IQ for student learning achievement. Students must be able to organize and discipline themselves to develop their own learning capacities, which necessitates independent learning. To follow the learning process and obtain superior learning results, students' independence and discipline are critical in the online learning process. Several studies have indicated that children who are used to discipline and self-control are more likely to succeed (Duckworth, Taxer, Eskreis-Winkler, Galla, & Gross, 2019; Macgregor, Carnevale, Dusthimer, & Fujita, 2017).

Time management skills are crucial in online learning. Low academic achievement might be caused by uneven time allocation among students. Students that are adept at managing their time can increase their academic achievement (Xu, Du, Wang, Liu, Huang, Zhanng, & Xie, 2020). Individual that are skilled at time management can plan, monitor, and assess themselves, as well as complete their tasks successfully and efficiently. Students who planned schedule for online learning will have ample time to participate in class and finish tasks, allowing them to improve their grades. Meanwhile, students who don't have a good schedule will find it difficult to keep with the online learning process.

Students' self-confidence is greatly influenced by communication between them and their teachers (Blanco et al., 2020). Effective communication is the most important factor in the success of the learning process. Cooperation also affects student leadership development, communication, and the success of the learning process. Another important factor that has an influence on the distant learning process is motivation (online). Students that are highly motivated to study will be more passionate about engaging in online learning (Radkowitzsch, Vogel, & Fischer, 2020). In online learning, motivation is critical since it aids in the creation of a pleasant learning environment. The transition in learning habits from face-to-face to online will affect students' passion for studying. Face-to-face learning allows students to interact directly with teachers and peers, which increases their passion for learning. Meanwhile, students that learn online only interact with one another online, which might lead to boredom. Those with strong motivation outperform students with low motivation in terms of learning outcomes, according to studies.

Meanwhile, the attitude element, the ability to use technology, has a considerable influence on the distance learning process. The capacity of students and teachers to use technology determines the smoothness of the learning process (Aliyyah, Rachmadtullah, Samsudin, Syaodih, Nurtanti, & Tambunan, 2020). Teachers and students who are not technology-savvy will find it difficult to follow the distance learning process. As a result, poor learning outcomes occur. Operating a computer or other electronic device contributes to the success and efficiency of learning, as well as the achievement of learning objectives. The online learning process will certainly fail if students and teachers are not proficient in the use of digital technologies. Because digital technology is such an important part of the online learning process.

Non-cognitive skills are recognized to be significant skills in distant learning, as discussed above. As a result, 93.3 % strongly agreed to design an assessment instrument to measure this competence, according to the teacher. This is because it is the responsibility of the proper teacher to test non-cognitive skills, thus this part is rarely assessed. There is no accurate assessment instrument to measure non-cognitive skills, according to research (Fan et al., 2014; Ouazad, 2014; Nisbet & Wilson, 1977), thus the creation of skills assessment instruments is critical. It is apparent from the preceding explanation that the development of non-cognitive instruments is important.

4. CONCLUSION

Non-cognitive skills, such as discipline, independence, time management skills, teamwork, motivation, and technological skills, are highly agreed upon by 84.44% of teachers as having a major impact on the effectiveness of online learning. To follow the learning process and obtain superior learning results, students' independence and discipline are critical in the online learning process. Teachers and students who are not technology-savvy will find it difficult to follow the distance learning process, because of poor learning outcomes. Operating a computer or other electronic device contributes to the success and efficiency of learning, as well as the achievement of learning objectives. There is no accurate assessment instrument to measure non-cognitive skills, thus the creation of skills assessment instruments is critical. This study is confined to examining the significance of constructing non-cognitive instruments for assessment in online history education. Consequently, it can serve as a tool for assessing and constructing non-cognitive skills in history learning in the future. As a refinement of this research, more research is needed on instrument design, instrument development, and the application of non-cognitive assessment instruments for historical learning.

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