



## Disposition of Students Learning Independence to Support Learning Success During the COVID-19 Pandemic

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### Abstrak

*Pembelajaran online saat ini menyebabkan penurunan pemahaman siswa. Salah satu faktor yang mempengaruhi penurunan ini adalah disposisi berpikir siswa. Dengan demikian, penting untuk mengidentifikasi disposisi yang dibutuhkan siswa untuk mendukung keberhasilan mereka dalam pembelajaran online. Tujuan penelitian ini adalah untuk mengidentifikasi disposisi kemandirian belajar yang digunakan sebagai pendukung keberhasilan pembelajaran online. Metode penelitian ini adalah penelitian kuantitatif dengan pendekatan survey. Sampel penelitian ini terdiri dari 138 mahasiswa program studi pendidikan matematika. Data yang dikumpulkan dalam penelitian ini adalah hasil pengisian angket dan pendapat siswa terkait disposisi berpikir. Hasil survei menunjukkan bahwa ada empat komponen disposisi berpikir yang dibutuhkan siswa untuk berhasil dalam pembelajaran online, yaitu: ketekunan, motivasi, komunikasi, dan pengaturan diri. Keempat komponen ini saling terkait satu sama lain. Seseorang yang berhasil dalam belajar harus memiliki ketekunan, dimana ketekunan dibangun dari motivasi. Seseorang yang gigih dan termotivasi juga harus mampu berkomunikasi dengan berbagai pihak. Ketekunan, motivasi, dan komunikasi harus memperhatikan regulasi diri. Keempat komponen disposisi berpikir ini dapat digunakan untuk menunjang keberhasilan siswa.*

**Kata kunci:** Disposisi Berpikir, Kegigihan, Motivasi, Komunikasi, Pengaturan Diri

### Abstract

Nowadays online learning causes a decrease in student understanding. One of the factors that influence this decrease is the student's thinking disposition. Thus, it is important to identify the dispositions needed by students to support their success in online learning. The purpose of this study was to identify the disposition of learning independence that is used as a supporter of successful online learning. The method of this research is quantitative research with a survey approach. The sample of this study consisted of 138 students in the mathematics education study program. The data collected in this study are the results of filling out questionnaires and student opinions related to thinking dispositions. The survey results show that there are four components of thinking disposition that are needed by students to be successful in online learning, namely: persistence, motivation, communication, and self-regulation. These four components are interrelated with each other. Someone successful in learning must have persistence, where persistence is built from motivation. Someone persistent and motivated must also be able to communicate with various parties. Persistence, motivation, and communication must pay attention to self-regulation. These four components of thinking disposition can be used to support student success.

**Keywords:** Thinking Disposition, Persistence, Motivation, Communication, Self-Regulation

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## 1. INTRODUCTION

Thinking skills are important that must be considered in a learning activity at school and college. This thinking skill is further referred to as thinking disposition or intellectual character (Perkins et al., 1993; H. Setiawan et al., 2017; Tishman et al., 1993; Tishman & Andrade, 1995). This thinking disposition is psychologically defined as a person's tendency or response that is consciously and beneficially carried out (Hobbs et al., 2013; Tishman et al., 1993). This thinking disposition also affects one's success in learning. The results showed that distrust and hatred of mathematics subjects led to low student participation in learning

mathematics (Brown et al., 2008). The results also show that belief significantly affects attitudes towards mathematics (Almerino et al., 2019). The results of the latest research show that students who are successful in solving open problems with various solutions are students who have the disposition to think conceptually, procedurally, and analytically (Anggoro, 2016). Thus, it is not only the ability that affects one's learning success, but the disposition of thinking also affects success in learning.

Learning in schools and colleges is currently done online. This is to prevent the spread of the COVID-19 virus. Online learning is learning that is done virtual or by giving certain tasks to be completed by students independently or in groups. The change in the learning process from face-to-face to virtual learning has several negative impacts, especially the increase in student achievement. The results of the study show that distance learning affects the learning process which has an impact on students' lack of understanding of the material explained online (Basar, 2021). The results also show that students experience boredom in learning due to monotonous online learning (Pawicara & Conilie, 2020). The results also show that the problem of distance learning causes difficulties in understanding the material due to the limited interaction space with the teacher, and the material has not been conveyed effectively (Engko & Usmany, 2020; Fauzy & Nurfauziah, 2021). The results also show that students have difficulty adapting to online learning, including internet constraints (Annur & Hermansyah, 2020; Oktawirawan, 2020). Even the impact of online learning is also a cause of anxiety for parents, especially parents of elementary, middle, and high school students (Tirajoh et al., 2021). From the various research results, in general, the main problem is the decrease in student achievement in doing online learning.

This increased learning achievement is an important concern for educators and researchers. It is in line with previous research that has focused on analyzing online learning problems and their solutions (Agustin et al., 2021; Setiawan & Wijayanti, 2020; Suriadi et al., 2021). Their research explains that there are a lot of online learning problems, caused by a transformation of learning from face-to-face to online learning that must be prepared. Both students and teachers must be able to adapt to using learning media or applications to support online learning (Atsani, 2020; Dewi & Sadjarto, 2021; Dzalila et al., 2020; Elfahmi, 2021). In addition, the role of parents in online learning is very essential, because learning is done from home, and parents have full responsibility to guide and supervise their children in carrying out online learning (Ahsani, 2020; Cahyati & Kusumah, 2020). There must be work together in conducting learning for students (Khadijah & Gusman, 2020).

However, the research conducted still focuses on thinking ability rather than thinking disposition. Therefore, research is still needed on the thinking disposition needed by students to support successful online learning during the COVID-19 pandemic. Thus, the formulation of the research problem is what are the components of thinking disposition that are needed by students to support their success in understanding the material or learning online? From the formulation of the problem, the purpose of writing this article is to describe the components of thinking disposition that are needed by students to support their success in online learning. The novelty of this research is to examine the thinking disposition needed by students in independent study during the covid-19 pandemic which has never been studied by previous research. Thus, the benefit of this research is the acquisition of a thinking disposition component that is important for students to have to support successful learning during the COVID-19 pandemic.

## 2. METHODS

This type of research is quantitative research using a survey approach. Survey research is the most suitable research to identify the needs of a community and to find out the

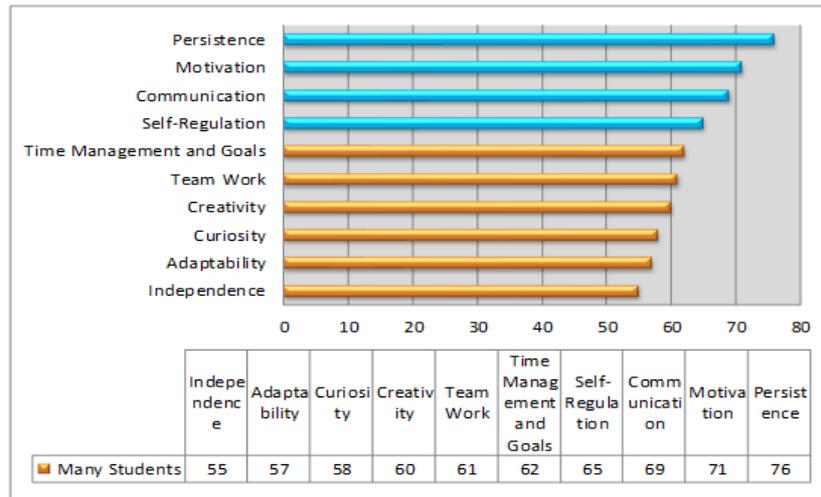
opinions, behavior, or characteristics of the population (Creswell, 2012). In addition, survey research is also used to describe a trend or issue, in this case, to describe the thinking disposition needed by students during the COVID-19 pandemic. So, it can be said that through survey research, the thinking dispositions needed by students as supporters of success in learning can be identified. This survey research design uses a cross-sectional design, where the researcher collects data at one time to collect student opinions about the components of thinking dispositions, they need in solving mathematical problems. The population of this research was students of the mathematics education study program at the Islamic University of Malang. The selection of research samples using a random sampling technique. The selection of this random sampling technique was based on the fact that this study did not differentiate between gender and individual characteristics. The sample of this study consisted of 138 students in the mathematics education study program at the Islamic University of Malang.

The data of this research consisted of data from questionnaires and interviews. This questionnaire aims to determine the components of thinking disposition needed by students to be successful in learning during the COVID-19 pandemic. This questionnaire consists of 36 components of thinking disposition, where respondents are asked to choose more than one component needed in this online learning. Then interviews are used to find out the reasons for students choosing thinking dispositions. This survey research was conducted in three steps. The first step is to ask 138 students of the mathematics education study program to choose the thinking disposition (maybe more than 1) required by students to be successful in their studies. The second step is to recapitulate the thinking disposition needed by students in the form of a bar chart. After obtaining the results of the recapitulation of filling out the questionnaire, the researcher asked the opinions of five students randomly from each component that was chosen by many students. The purpose of asking this opinion is to find out their reasons for choosing the component of thinking disposition. Analysis of the results of filling out the questionnaire was carried out by recapitulating the number of students who chose the disposition component. Thus, the results of the recapitulation of the component of thinking disposition that is most chosen by students are obtained. The analysis of student opinions was carried out by data reduction, namely the same opinion would be made one. Through these two analyzes, the thinking disposition needed by students to be successful in their studies during the COVID-19 pandemic can be identified

### **3. RESULTS AND DISCUSSION**

#### **Result**

From the results of filling out the questionnaire, it was found that from 36 components of thinking disposition, 10 components were most needed by students to be successful in their studies during the COVID-19 pandemic, which can be seen in [Figure 1](#). From [Figure 1](#) it can be seen that there are 4 components of thinking disposition that are mostly chosen by 138 students, namely: 55.1% chose persistence, 51.4% chose motivation, 50% chose communication, and 47.1% chose self-regulation. After students were asked to choose the component of thinking disposition needed, then the researcher asked 10 students at random to think about why they chose that component. The opinions of students who chose the component of thinking disposition consisting of persistence, motivation, communication, and self-regulation were reduced by only writing down different opinions, while the same opinion was only written once. Students' opinions regarding the components of the thinking disposition can be seen in [Table 1](#).



**Figure 1.** Results of the Thinking Disposition Survey Needed by Students

**Table 1.** Students' Opinions in Choosing Thinking Dispositions

No.	Components of Thinking Disposition	Student Opinions
1	Persistence	<ol style="list-style-type: none"> <li>1) Learning online must be persistent I understanding the material and finding answers to questions, because the explanations from teachers/lecturers are not as clear as face-to-face learning.</li> <li>2) Because in studying mathematics, you must have a high understanding. So to understand difficult material, I have to have a lot of persistence.</li> <li>3) Because, in online learning, students are required to be more active in understanding material and try their best to understand the material.</li> <li>4) We must always try our best in every situation.</li> <li>5) Because persistence I think is all-encompassing.</li> <li>6) My reason is that a person will be successful when he never stops trying to make what he wants coming true.</li> <li>7) In my opinion, in this online learning, what is needed is persistence in teaching and learning to solve a problem that will be shown from a final result value.</li> <li>8) Because success requires a persistent struggle and keeping the spirit.</li> <li>9) Because persistence is needed.</li> <li>10) Because we know online learning is not easy, it requires persistence.</li> </ol>
2	Motivation	<ol style="list-style-type: none"> <li>1) Motivation is the main component for understanding the material</li> <li>2) The behavior of diligent friends can also motivate them to be diligent too.</li> <li>3) The effect of online learning is that we will not understand the lessons that have been learned in lectures. To avoid such things, in my opinion, what we must instill in ourselves is intention and motivation.</li> </ol>

No.	Components of Thinking Disposition	Student Opinions
3	Communication	<p>4) The main motivation is that we must remember the first goal, which is to study and reach our goals and study well to get satisfactory results and by what we want.</p> <p>5) Because we must have motivation in learning.</p> <p>6) There are several that I chose, one of which is motivation. Motivation in learning is important in achieving the expected learning outcomes because, with this, their curiosity can be effective.</p> <p>7) Students need learning media as a tool to support learning activities (at least a cellphone or laptop) and more motivation than parents, teachers, or lecturers during a pandemic, because without motivation students/students are not productive in working or studying.</p> <p>8) Because during this pandemic, it is very important to have motivation and interest in learning. Because with this online lecture, it will be difficult for lecturers to monitor it.</p> <p>1) Regarding communication, students must often ask the lecturer about material that has not been understood.</p> <p>2) On the other hand, if the lecturer can respond to each student because each student is different in understanding the material.</p> <p>3) Because in understanding material, it is necessary to communicate with each other to channel knowledge and exchange ideas among teams so that the solution can be solved.</p> <p>4) Because communication is very important in learning.</p> <p>5) Communication during online learning in the current pandemic era, there must be communication between teachers and students who cannot meet directly in the learning process.</p> <p>6) The difficulty of communication between teachers and students causes communication to be very important so that there is no miscommunication and mistakes in understanding the material.</p>
4	Self-Regulation	<p>1) Because self-regulation affects half of human behavior.</p> <p>2) Because I'm the type to study in a quiet or quiet situation. In this way, the thoughts and material provided can be embedded and captured by the brain properly.</p> <p>3) Because in my opinion self-regulation is very influential for the achievement of a learning activity.</p> <p>4) I think the components that I chose are suitable for the pandemic period because of limited media and time which causes many students who do not understand the subject of money. So that we as students must have the self-awareness to be able to understand these materials independently.</p> <p>5) If he does not have good self-regulation, it means he does not know what is right and what is wrong.</p> <p>6) In my opinion, to increase interest in learning is to start with the intention. Assisted by the existence of an effective, efficient, comfortable, and fun learning atmosphere.</p> <p>7) I think self-regulation is self-control.</p>

Next, the researcher asked 10 students to give their opinions about the four components of thinking disposition in [Table 1](#). The students' opinions about the four components were: These components are needed in learning because they are the most important things to achieve success in learning. This is in accordance with the principle the existence of this thinking disposition component can provide its spirit in doing online learning. Other students state during this online learning it will be difficult to understand the material presented, the disposition is a solution that is very necessary so that online learning can be beneficial for students. The rest of the students said disposition is effective in achieving the learning objectives, namely being able to understand the material well during online learning for this era. On other hand, it can be said that this component is the main and supporting factor for the success of children's learning programs.

## **Discussion**

From the results of the survey and the opinions of students, it was found that the very important learning independence dispositions for students have been persistence, motivation, communication, and self-regulation. The results of this study are consistent with the results of previous studies which showed that thinking disposition has an important role in student success ([Almerino et al., 2019](#); [Clark et al., 2014](#); [Crow & Castello, 2016](#); [Driscoll et al., 2017](#); [Perkins et al., 1993](#)). However, the results of this study expand the results of previous research by explaining the components of the disposition of learning independence needed in online learning during the COVID-19 pandemic, which consists of persistence, motivation, communication, and self-regulation, each of which is explained as follows.

The first component to build a learning independence disposition is persistence. Persistence is defined as the ability to continue despite adversity ([Driscoll et al., 2017](#)). In simple terms, it can also be said that this persistence is trying to overcome difficulties and challenges by never giving up. The results of previous studies show that this persistence is the main disposition component needed by someone in writing a work ([Driscoll et al., 2017](#)). The results of this study extend the results of previous research by showing that this persistence supports one's success in independent or online learning. This is because it allows students to face signal difficulties, difficulties in using technology, difficulties in understanding material, so many tasks, or even other learning demands. Through this persistence, a student can overcome these difficulties by seeking various solutions. Without this persistence, a student tries to avoid difficult things which result in not developing his competence. Therefore, this persistence must be built by students to be successful in learning.

The second component of independent learning disposition is motivation. Motivation in the context of learning is defined as an urge to take action or behavior that supports learning success. The results of previous studies indicate that this motivation is used as a disposition component of teacher awareness in teaching in the classroom and is also used to describe effective learners ([Clark et al., 2014](#); [Crow & Castello, 2016](#)). The results of this study extend the results of previous studies by showing that this motivation is also a component of building the disposition of learning independence. The motivation that arises in students is shown by their willingness to earnestly in learning and participates in activities related to their interests. Furthermore, motivated students understand that failure is part of the success process and are willing to review or change strategies if necessary ([Crow & Castello, 2016](#)). In independent learning or online learning, students will encounter many difficulties or even failure in learning (for example, grades C or D for certain subjects). The way to overcome this failure is to build strong self-motivation. The opinion of one student said that they need motivation from parents, lecturers, universities, or even the government in dealing with this online learning situation. Thus the motivation of a student needs to be built both from himself and from various parties.

The third component is communication. Communication in the context of students is defined as the process when a person or group of students creates or uses the information to connect with the environment or other people. Communication must be effective, that is, people who communicate can understand each other what is being communicated. Effective communication is important for building new relationships and knowledge (Demirdağ, 2021). In addition, effective communication is an important element that helps students to be actively involved in many activities (Ntoumanis et al., 2017). Effective communication is needed by students in achieving success in independent learning. The results also show that students need to build good communication skills to avoid miscommunication problems or communication misunderstandings between students and educators and fellow students (Demirdağ, 2021). In online learning, there are many communication misunderstandings, this is because students and educators do not meet in person. Therefore, to avoid these misunderstandings, good and correct communication is needed between educators and students and between students themselves.

The fourth component is self-regulation. Self-regulation in this learner context is defined as the ability to evaluate, revise, and improve one's behavior and strategies for learning. For example, when students cannot focus learn in a crowded place, so they need to move to a quiet place. The results of this study are by the results of previous studies showing that self-regulation is also an important disposition of a student in writing (Driscoll et al., 2017). The results of this study extend the results of previous research by showing that self-regulation is important for a student to be successful in online learning. For example, someone who has difficulty learning online is due to signal problems, and then the student looks for a place that is quite adequate for the availability of a signal. This self-regulation allows learners to design and implement behaviors that can increase their success, for example making the most of available resources or increasing focus on learning. Furthermore, students who cannot do self-regulation will be left far behind by their peers in understanding the material or in achieving learning success. Therefore, students must have this self-regulation ability to be successful in understanding the material.

The results of this study have implications for online learning by constantly motivating students to have a learning independence disposition consisting of resilience, motivation, communication, and self-regulation. These four components of thinking disposition form a relationship. Persistence and motivation are the foundations for building successful independent learning. This persistence has a relationship with motivation. Students who have motivation can be described as students who are persistent, enthusiastic, have positive thoughts, are driven, and are goal-oriented (Crow & Castello, 2016). The results of the study also show that someone persistent in working on questions will be able to find errors which in turn can revise the error to obtain the correct answer (Y. E. Setiawan, 2020b, 2020a). Therefore, persistence and motivation must be built-in in students during this pandemic, so that they are successful in learning and achieving their goals. This is where the role of teachers, lecturers, parents, and the government must be able to make students more persistent and motivated in achieving learning success. The two components of disposition consisting of communication and self-regulation are pillars that must be built, where the application of persistence and motivation must also be able to communicate and self-regulate. It is expected that educators (both teachers and lecturers) and parents will teach students about persistence, motivation, good and effective communication, and good self-regulation. Thinking dispositions can be learned by forming a good learning culture.

#### 4. CONCLUSION

From the results of the research and discussion, it can be concluded that the student's learning independence disposition that most supports learning success consists of persistence, motivation, communication, and self-regulation. These four components form a building, where persistence and motivation are the foundation, while communication and self-regulation are the pillars of success in independent learning. Various studies have shown that a person's success factor in learning is not only supported by intellectual abilities but also supported by disposition or behavior. The results of this study indicate that four components are most needed by students in learning during this COVID-19 pandemic, namely persistence, motivation, communication, and self-regulation. Therefore, the researcher recommends educators continuously improve students' persistence and motivate students, as well as teach them how to communicate well and effectively and how to self-regulate. In addition, the researcher also recommends to the government equip educators with knowledge of ways to teach dispositions that support this learning success. Thus, educators will be able to teach good thinking dispositions.

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