ALTERNATIVE LEARNING OF THE FUTURE BASED ON VERBAL-LINGUISTIC, AND VISUAL-SPATIAL INTELLIGENCE THROUGH YOUTUBE-BASED MIND MAP WHEN PANDEMIC COVID-19

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Informasi artikel
Sejarah artikel
Diterima : 09/06/2020
Revisi : 08/08/2020
Dipublikasikan : 28/08/2020
Kata kunci:
Kecerdasan Visual-Spasial,
Kecerdasan Verbal-Linguistik,
Mind Mapping,
YouTube,
COVID-19

ABSTRAK

Kecerdasan menggambarkan kemampuan individu menyelesaikan tugas untuk mencapai tujuan. Perkembangan jaman turut mengembangkan temuan baru diantaranya kecerdasan jamak yang dicetuskan Howard Gardner terdiri sembilan kecerdasan. Dalam kajian literatur ini akan membahas pengembangan kecerdasan visual-spasial dan kecerdasan verbal-lnguistik siswa dengan mind map berbantuan youtube untuk menunjang alternatif pembelajaran masa depan setelah munculnya COVID-19. Mind map dianggap cocok untuk mengembangkan kecerdasan visual spasial dan kecerdasan verbal-linguistik karena pembelajaran mind map berhubungan dengan gambar, warna, kata-kata yang sesuai dengan indikator kecerdasan visual-spasial dan kecerdasan verbal-linguistik, media youtube membantu siswa mengembangkan topik yang dibahas serta menunjang kecerdasan dalam pembelajaran jarak jauh ditengah pandemi COVID-19. Dengan demikian penelitian ini sebagai solusi gambaran pembelajaran jarak jauh untuk pengembangan kecerdasan jamak ditengah pandemi COVID-19.

Keyword:
Visual-Spatial Intelligence,
Verbal-Linguistic Intelligence,
Mind Mapping,
YouTube,
COVID-19

ABSTRACT

Intelligence describes the ability of individuals to complete tasks to achieve goals. Development of the times helped develop discoveries including multiple intelligences that Howard Gardner coined consisted of nine intelligences. This literature review will discuss the development of visual-spatial intelligence and the verbal-linguistic intelligence of students with a YouTube-assisted mind map to support future learning alternatives after the advent of COVID-19. The mind map is considered suitable for developing spatial-visual intelligence and verbal-linguistic intelligence because mind map learning is related to images, colors, words that are following indicators of visual-spatial intelligence and verbal-linguistic intelligence, YouTube media helps students develop topics discussed and support intelligence in distance learning amid the COVID-19 pandemic. Thus, this study as a solution to the description of distance learning for the development of multiple intelligences amid the COVID-19 pandemic.

Introduction

The implementation of education in Indonesia is based on Law No. 20 of 2003 concerning the National Education System. Education is a conscious effort planned to create an atmosphere of learning and learning process so that students actively develop their potential to have spiritual power, self-control, personality, intelligence, noble character and the skills needed by themselves, society, nation, and country

(UU No 20 Tahun 2003, 2003). Based on the meaning of education above students are allowed by the state to develop their potential, namely intelligence.

Intelligence is the ability to achieve one's goals in life, in one's socio-cultural context (Sternberg, 2005). As knowledge develops, intelligence develops into multiple intelligences developed by Howard Gardner. Multiple intelligences are intelligence possessed by each individual, even though each intelligence inherent in the individual is not the same depth (Gardner, 2003). At the beginning of its emergence, there were eight bits of intelligence namely verbal, visual, kinesthetic, logical, interpersonal, intrapersonal, musical, and natural intelligence (Gardner, 1993). Then Gardner enriched his findings by adding one intelligence that is spiritual (Lazaer, 2000). Furthermore, this study will reveal two bits of intelligence namely verbal-linguistic intelligence and visual-spatial intelligence. Verbal-linguistic intelligence is intelligence that refers to sensitivity to words and language, while visual-spatial intelligence is the child's ability to recognize shapes correctly (Agustin, et al., 2018). Furthermore, humans store several highly complex intelligence potentials, including visual-spatial intelligence and verbal-linguistic intelligence. Visual-spatial intelligence is intelligence related to images, creating images in the mind, enjoying charts, puzzles, and visualization tasks. With visual-spatial intelligence, a person will have imagination and creativity in solving problems that arise in everyday life, helping them to produce new ideas and encourage them to be more flexible. Whereas with verbal-linguistic intelligence which is intelligence in processing words and language, a person will be able to convey ideas and creativity properly and correctly (Ansori , 2016).

Previous researchers have long debated intelligence representing some basic traits of the brain, which must be reflected in low-level visual abilities (Galton, 1883). Verbal gradually contributes to the production of unique or original ideas (Fink & Neubauer, 2006). Students who have good verbal-linguistic intelligence can appreciate words and the meaning of those words. Students can develop sharp language sensitivity and can easily manipulate their structure and syntax to suit every need (Haryanti, 2017). Verbal-linguistic intelligence plays a role in developing the language skills of low-grade students (Yuliyanto, Amalia, & Muqodas, 2020). When a student with developed visual-spatial intelligence is allowed to draw numbers and paint pictures of the problems he is reading or when images rather than numbers are placed, the same student attitude towards mathematics that he finds difficult starts to change and his success can increase (Taspinar & Kaya, 2016). Students with developing visual-spatial intelligence can express themselves both symbolically and visually through paintings or drawings (Maphalala & Mpofu, 2017). Students with high visual-spatial intelligence can use their metacognition processes optimally. This shows that visual-spatial intelligence can influence the students' metacognition process in solving open problems to be not optimal or vice versa (Rimbatmojo, Kusmayadi, & Riyadi, 2017). Based on this statement visual-spatial intelligence and verbal-linguistic intelligence are considered important to be developed, verbal-linguistic intelligence is useful to influence others to act, remember information, and use language to discuss it themselves (Jamaris, 2017). Visual-spatial intelligence is useful for finding the path of a location, recognizing faces or scenes, and paying close attention to details (Gardner, 2013). Visual-spatial intelligence influences the ability of children to imagine, in imagining the shape it takes to imagine (Tejaningrum, 2014).

Based on the results of previous studies, visual-spatial intelligence and verbal-linguistic intelligence have not been much developed, this was revealed in research in kindergarten that uses role-playing center learning has not been implemented properly, so that children's intelligence, especially children's verbal-linguistic intelligence, has not been stimulated according to the expected goals (Anisyah, 2016). Teacher-oriented approach (teacher-centered) is often adopted to teach students with consideration of ease, practicality, and conformity to the habits of most students White (Yaumi & Ibrahim, 2013). During this time the game used for the learning process of early childhood autism and visual-spatial intelligence is still limited (Tejaningrum, 2014). Based on observations in a kindergarten in Bogor, students have difficulty in spatial visual abilities. Students have not been able to determine the right and left direction, recognize colors, difficulty remembering, and grouping geometric shapes. Teaching and learning activities

carried out by working on activities according to the teacher's instructions. Students only do the assignments given and they must be the same as what the teacher says. The teacher has not paid attention to aspects of students' imagination in the teaching and learning process (Rosidah, 2014). Children who have low verbal-linguistic intelligence might be able to develop this intelligence through the nurturing process with the teacher's guidance. This also applies to children with high verbal-linguistic intelligence. With the help of teachers, they can accelerate the process of developing their verbal-linguistic intelligence (Hali, 2017).

As stated, the researcher intends to conduct further studies related to the problem with mind-assisted YouTube learning. Mind maps are methods of storing, organizing, and prioritizing graphic information, networking (usually on paper) using keywords and images, each of which will take specific memories and encourage new thoughts and ideas. (Buzan, 2006). The mind map is closely related to the development of verbal-linguistic intelligence namely mind mapping strategies that can be used to explore almost all writing topics and also used in every type of writing such as narrative, descriptive, narrating, persuasive, argumentative, essay, etc. Students can improve their ideas and guarantee to discuss ideas in groups (Riswanto & Putra, 2012). In visual-spatial intelligence, mind maps can develop them in the use of colors, images, and symbols, because the central focus or graphic representation of material is placed in the middle of the page; ideas can flow freely without judgment; keywords are used to represent ideas; keywords are connected to the central focus by lines; colors are used to highlight and emphasize ideas; and images and symbols are used to highlight ideas and stimulate the mind to make connections Wycoff (Goodnough & Wooda, 2002). In line with the previous statement, mind maps are considered suitable to develop verbal-linguistic intelligence and visual-spatial intelligence, children who are language savvy are very suitable to learn to use mind maps because mind maps use keywords in recording, and visual-spatial intelligent children are very suitable to learn to use mind maps because mind maps use a lot of pictures and colors (Swadarma, 2013). Mind maps can greatly help connect verbal-linguistic intelligence and visual-spatial intelligence in the context of Gardner's theory of multiple intelligences (Mona & Khalick, 2008). Mind maps will be fun to see, read, and understand (Buzan, 2005). Mind map tools can make the most boring tasks fun and interesting, thus increasing concentration and memory (Zampetakis, Tsironis, & Moustakis, 2007). Learning will be effective if students are happy. The excitement in learning has proven to have an amazing effect on student achievement (Darmansyah, 2011).

However, since the advent of COVID-19 in Indonesia, learning has to be carried out at home to prevent increasing transmission. Learning through the use of technology is considered to be an alternative during the COVID-19 period. In addition to facilitating learning and applying technology in learning, using the YouTube page to access topics can be a pretty good solution because it can be accessed anytime and anywhere, considering that after the emergence of the COVID-19 pandemic, to prevent transmission of COVID-19, the government recommends frequent hand washing. soap, cover your mouth and nose when you have the flu with your elbows, keep your distance from unhealthy people, avoid touching your face, avoid shaking hands, and do activities at home (Gugus Tugas Percepatan Penanganan COVID-19, 2020). Based on this the students are required to be able to keep learning carried out at home according to government instructions. The teacher is challenged to determine the right strategy so that even though studying at home students can learn optimally. In everyday life, the progress of science and technology, especially information technology, is very influential in the preparation and implementation of learning strategies (Putra, 2018). This is following Blended Learning Theory and Information Processing Theory to provide insight into the successful integration of technology or multimedia in the classroom. Multimedia and discussion also have potential value as teaching techniques (Fleck, Beckman, Sterns, & Hussey, 2014). Media that can be used as an alternative in future learning is YouTube. YouTube is a video sharing site where users upload, share, and view videos (Jaffar, 2012). YouTube can add to its function as a medium of information (video) for gradual learning and teaching. The suitability of the technology task is considered as an adjustment received between the preferred way to learn procedural tasks (realistic visual demonstration) and YouTube technology (visual media) (Lee & Lehto, 2013). Based on this statement, a YouTube-assisted mind map is considered to be able to develop verbal-

linguistic intelligence and visual-spatial intelligence of elementary students during the emergence of COVID-19 and alternative learning in the future.

Literature Review

Mind Map Learning

Important components of the implementation of learning include curriculum, learning materials, and learning models. The learning model is the planning used in preparing the curriculum, arranging learning material, and giving instructions to the instructor in the classroom in teaching settings or other settings (Joyce & Weil, 1980). The learning model is a guide for teachers and students in the implementation of the learning process (Rahman, 2019). The mind map learning model is one of the learning models developed by Tony Buzan. Mind maps are a network of related images that combine all the main elements of memory theory and left and right brain information (Buzan, 2006). Mind maps use color, images, and spatial orientation to facilitate understanding of intra and inter conceptual relationships. The ability to understand this relationship is felt to reflect the type of thinking needed in setting goals (Mollberg, et al., 2011).

Materials needed to make a mind map are white paper, plain, not striped, minimum size A4, colored pencils or markers, at least 3 colors, varying in thickness and thin (if possible), imagination, our brain (Hikmawati & Suprayitno, 2013). Steps to make a mind map include thinking in pictures and thinking in color, basic thinking sequence, use a pen on paper, fill the paper, use a lot of pens (Buzan, 2006). Another statement revealed the mind map steps including the teacher and students doing brainstorming to agree on the theme to be taken; in discussing the teacher uses mind mapping to see and analyze the strengths and weaknesses of the proposed theme; after the theme is agreed upon, students are grouped according to need; each group makes note-making about learning activities on each topic in the group; and the results of the mapping of each group are discussed again between the students and the teacher (Swadarma, 2013). The explanation of these steps is in line with the description of the mind map steps and the steps are: 1) The teacher conveys the learning objectives to be achieved, 2) The teacher presents the material, 3) Students are divided into groups with 2 members, 4) Students design mind maps, 5) Students present the results of the discussion in groups, 6) Conclusions (Syam & Ramlah, 2015).

Verbal-Linguistic Intelligence

Some students look proficient in speaking, writing stories, or fond of reading, even memorizing the names of places and other small things these students may have uniqueness or intelligence in language or verbal linguistics. Verbal-linguistic intelligence is a person's skill in defining words, knowing facts about the world, and finding connections and differences between verbal concepts (Gardner, 1993). This intelligence refers to sensitivity to words and language (Agustin, et al., 2018). Verbal reasoning is the ability to think logically which is expressed in words (Throne & Qiang, 1996). The impact of verbal-linguistic intelligence can be seen from children's preferences in several ways, including creative writing, making jokes, memorizing names, places, and dates, enjoying reading books, easily spelling words, liking rhymes, poetry, and word games, enjoying stories, radio, and excels in reading and writing lessons (Jamaris, 2017). Even the ability to store information such as a long word list, for a long time has become a favorite testing area for western psychologists, it is another form of verbal-linguistic intelligence that has been highly valued in traditional pre-historic societies (Gardner, 2013). Intelligence requires the ability of children to store a variety of meaningful information related to their thought processes (Amir, 2013).

The measurement of verbal-linguistic intelligence leads to several indicators. The vocabulary subtest of the Wechsler Adult Intelligence Scale-Revised has been identified as the best single measure for verbal and general abilities (Lezak, Howieson, Bigler, & Tranel, 2012). In line with this statement, vocabulary is one of the main tools of verbal-linguistic intelligence, Olson (Stanovich, 1993). It is also said that the characteristics of a person have high verbal-linguistic intelligence as follows: Listening and responding to

the voice, color and pronunciation of words; Understand the voices, languages, readings, and writings of others; Learning through listening, reading, writing and discussing; Able to speak, read, hear and write effectively; Experienced in learning other people's languages; Using hearing, speaking, writing, and reading to communicate; Trying to increase the use of own language; Have an interest in journalism, poetry, etc. Creating new and original linguistic forms from spoken and written languages (Yusuf & Nurihsan, 2008).

Visual-Spatial Intelligence

Likes to draw and can explain the contents of the picture, compile a puzzle, easy to understand an object image, the signs may be our students have unique intelligence in the spatial visual field. Visual-spatial intelligence is the ability to draw, imagine, or change a world that does not exist (Gardner, 1993). The development of visual-spatial intelligence combines the process of making art, coupled with an understanding of its historical context and the acquisition of skills in describing, analyzing, interpreting, and assessing it. This includes philosophical reflections on aesthetic issues, which are pursued through dialogue and discussion. General studies, another important part of the education of artists/designers, must work with studios, art history, and aesthetic studies and critical analysis (Gilmore, Keeble, Richardson, & Cragg, 2015). Children who have visual-spatial intelligence can manage images, shapes, and three-dimensional spaces with the main activity recognizing shapes, colors, and spaces and creating images mentally or realistically. (Cawi, Marhaeni, & Dantes, 2014). The characteristics of spatial children include: having sensitivity to colors, lines, shapes, spaces, and buildings; having the ability to imagine things, giving birth to ideas visually and spatially; can recognize the identity of an object when the object is in a different perspective; able to estimate the distance and existence of himself with an object; likes to doodle, draw pictures, color and arrange building elements; and can form something that has meaning for him (Muslihuddin & Agustin, 2017).

COVID-19 pandemic

The emergence of COVID-19 in China at the end of 2019 and the rapid spread to Indonesia in early March 2020. Since the advent of COVID-19 which has infected 216 countries in the world and impacted various sectors including Indonesia. One sector that feels a significant impact on education. COVID-19 turns the face-to-face learning system into online learning at home through collaboration with parents to prevent transmission. The first step, the simplest and most effective way to prevent COVID-19, is to maintain personal hygiene such as washing hands, and avoiding touching the face and coughing on the sleeves (Ebrahimzadeh, 2020). Furthermore, authorities around the world recommend preventive measures including washing hands, covering your mouth when coughing, wearing personal protective equipment, keeping a distance from others, and isolation for people suspected of being infected (Unite against COVID-19, 2020). Besides, a study says COVID-19 can be controlled by isolation and physical contact tracking (Hellewell, et al., 2020).

Based on the description students are required to maintain physical distance with anyone, therefore the learning system is changed to online learning to prevent further transmission. Online learning is carried out to prevent direct contact between school residents and online learning is carried out based on instructions based on the Minister of Education and Culture Number 36962/PMK.A/HK/2020 dated March 17, 2020, concerning Online Learning and Working from Home in the Context of Prevention of Corona Virus Disease (COVID-19) which was decided by Nadiem Makarim as the Minister of Education and Culture of the Republic of Indonesia.

YouTube

The variety of learning media currently makes it easy to achieve learning goals. In the era of the industrial revolution, 4.0 demands the use of technology and the internet in learning. Internet media can be used as interactive information media and easily accessible is to use the YouTube page through the website www.youtube.com. A study even suggested university and government sources should be actively involved

in education through online video by producing and uploading instructional and informational videos to YouTube to provide accurate and unbiased material. (Rittberg, Dissanayake, & Katz, 2015). YouTube was founded in 2005, allowing individuals from all over the world to upload, share, and watch videos for frees (Rittberg, Dissanayake, & Katz, 2015). YouTube was made to be a website that allows users to freely upload videos on the Internet and share these videos with viewers who have internet access (Lo, 2012). YouTube is a media source that is an integral part of the education system. Educators have access to a large amount of material using YouTube as a teaching tool with adequate internet access and search criteria. Besides, the information available on the YouTube site provides a diverse base for students to learn, is culturally relevant, and easily accessible. Thus, the media as support provides great opportunities for learning because students still have a greater diversity of explanations.

In current technology-based learning via YouTube, class meetings begin with a short YouTube video presentation. Then after the video is shown, the class participates in a structured discussion answering questions related to video content (Fleck, Beckman, Sterns, & Hussey, 2014). Several terms are searched on YouTube, videos are downloaded and analyzed for specific content. But if the lack of mentoring access to YouTube, a study said YouTube was found to be an inadequate source for educational purposes because the content is very varied (Sutherland & Jalali, 2017).

Discussion

Mind map learning is learning that utilizes all parts of the brain, learning is carried out in groups or individually by describing a learning topic that can be developed into several parts that utilize images, colors, symbols, and others to facilitate understanding of the topic being studied. The mind map learning steps are: teachers and students explain the main topics to be studied, learning strategies and media can be developed to find out the material being the topic discussed, students and teachers discuss with each other or find additional information related to the topic being studied so that it gets very material diverse, students write down the main points related to the topic of the results of the discussion and information obtained from various sources, students are divided into several study groups to discuss making mind maps on a paper by writing the main topic in the middle of the paper and drawing branches in each section, students with the guidance of the teacher make a mind map based on their creativity, and the material that has been divided according to the topic, each group explains the results of the mind map they made to each group in front of the class and takes turns for all groups, students and teachers conclude the learning outcomes with the mind map. Mind map learning activities are considered to be able to explore creativity in terms of language (verbal) and sharpening art (visual) students.

Supporting this visual-spatial intelligence can be increased through creative design activities (Ariese-Vandemeulebroucke, 2018). In gambling, the manner explained with the mind mapping learning model makes students have to use their creativity to make pictures or releases beautifully and appealingly (Komarudin, Putri, & Suherman, 2019). In line with this creativity, Gardner has developed student intelligence, two of which are verbal-linguistic intelligence and visual-spatial intelligence. Mind map learning is considered suitable for developing students' verbal-linguistic and visual-spatial intelligence. The compatibility of Gardner's theory with the mind map includes a child who is intelligent in linguistics very suitable to learn with a mind map because mind maps use keywords in writing points; unique children with visual-spatial are very suitable to learn with mind maps because mind maps use a lot of pictures, colors, symbols, and others; each child is unique like making a mind map, and intelligence can be improved by appropriate learning styles and meeting their learning needs. In line with this, children's visual-spatial intelligence can be developed in various ways. One way is to let children play something they like that has the potential to help them sharpen their intelligence and improve their talents. For this to happen, people who are close to children, families, and caregivers, need to facilitate the needs of their children (Tobroni, 2017).

In the era of the Industrial Revolution 4.0, the use of technology was necessary for learning. Likewise, mass media technology can be used as an alternative to future learning through online learning

at home, which must be carried out since the advent of COVID-19 to avoid transmission. YouTube is one of the social media that is considered effective in helping the learning process in exploring information related to topics in mind maps. The use of YouTube for elementary school students as an intermediary media for information and verbal stimuli through sound in which there is an explanation of the material, as well as an increase in visual intelligence will be provided through image stimuli, various symbol colors in the video that are expected to be understood by students and have an impact on visual intelligence linguistic spatial and verbal increase in the availability of images in mind map media. Easily accessing the YouTube page with the help of the internet network students get any information interesting and interactive complete with animations and explanations whenever and wherever during online learning at home. Students learn independently and practice their verbal-linguistic and visual-spatial intelligence at home with video observations that provide explanations with simple to complex word descriptions and video shows that combine a variety of images and colors in the show. It is considered to help develop verbal-linguistic intelligence and visual-spatial intelligence of students with mind map learning at home during the COVID-19 pandemic. Illustration of YouTube assisted mind map learning at home during the COVID-19 pandemic in developing verbal-linguistic intelligence and visual-spatial intelligence is depicted in Figure 1 below:

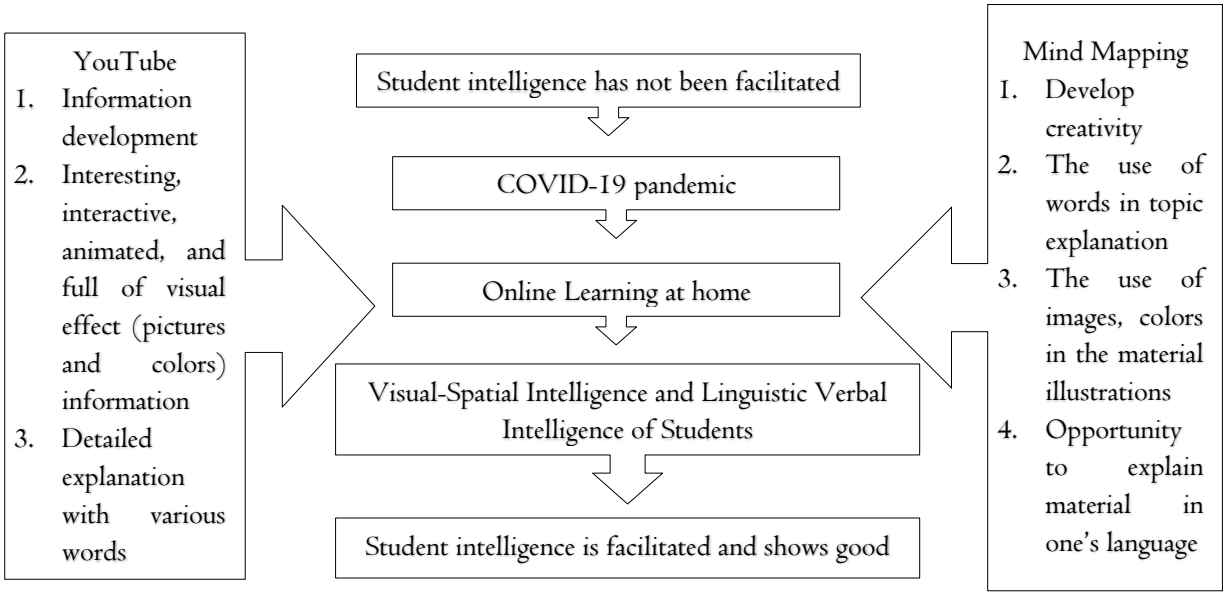

Figure 1. Alternative Design of YouTube Mind-assisted Learning Maps to develop Visual-Spatial Intelligence and Verbal-Linguistic Intelligence during the COVID-19 Pandemic

The following is an example of learning via YouTube related to learning in the first grade of the elementary school as set out in Figure 2 below:

Figure 2. Utilization of Youtube as an online learning media during COVID-19

Conclusion

The development of verbal-linguistic intelligence and visual-spatial intelligence by using mind-assisted learning on YouTube can be an alternative in the future of the COVID-19 pandemic which requires students to study online at home. Learning begins with determining the topic/theme of the material, the discussion between students and teachers related to the topic to be developed, the distribution of material and study groups to create a mind map, students develop topics by finding information through YouTube with their gadgets, activities carried out at their respective homes, students record the findings of information in the form of important points in YouTube videos, students make a summary by making a mind map with parents by combining pictures, writing, and colors according to the creativity they develop, students explain the results of their mind map in front of parents and recorded it to be sent to the teacher, students make conclusions through making mind maps. Based on the description, alternative learning through YouTube-assisted mind maps is considered effective during the COVID-19 pandemic to develop verbal-linguistic intelligence and visual-spatial intelligence of students who are required to study at home to prevent transmission and continue to carry out teaching and learning activities. It is fitting for teachers to determine effective and efficient strategies for future learning.

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