

Learning Model based on Multiple Intelligences oriented towards Higher Order Thinking Skills (HOTS) through the application of Visual, Auditory, Read-Write Preferential, Kinesthetic (VARK), and Directed Reading Listening Thinking Activity (DRLTA) in Elementary School

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ABSTRACT

The purpose of this study was to develop a learning model based on multiple intelligences and students' critical thinking skills through visual, auditory, preferential read-write, kinesthetic (VARK) learning strategies, and the application of the directed reading listening thinking activity (DRLTA) model to elementary school students. The stages include: 1) formulating research problems and determining survey objectives, 2) determining concepts and hypotheses and digging literature, 3) sampling, 4) making questionnaire, 5) field work, 6) data processing, 7) analysis and reporting. The result of the need assessment score is 3.54, the product development stage, FGD, expert and practitioner validation and the field trial stage. The feasibility of this model is tested based on: 1) The assessment of psychologists is assessed based on three aspects, namely the elements of the supporting theory used, the elements of the learning stages and the elements of the implementation of learning techniques to get a score of 4.77 or including "very feasible" to use. 2) Assessment of education practitioners is also assessed based on three aspects of getting a score of 4.33 or including "very feasible" to use. 3) Field trial assessment based on four aspects, namely, Multiple Intelligences detection, learning methods and learning media. Field trials were carried out with the individual trial stage getting a score of 3.56 including "very feasible", group field trials resulting in a score of 3.59 including "very feasible" and limited field trials getting a score of 3.8 including "very feasible" to use. The framework in this study is based on quantitative and qualitative research in accordance with the objectives to be achieved, the research problems to be solved, and the nature of the data required. The use of a mixed method approach is based on research coverage and research problems. In accordance with the objectives and research problems and the nature of the data collected, this study used a two phase design. The reason for using this design is that it allows theoretically and practically the development of two designs in a position to complement each other, equal, and be implemented sequentially.

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1. Introduction

The low academic performance of students is evident in their failure to graduate, as most students do not achieve the passing grade that has been set. This does not mean that students lack ability, especially in mathematics, but there are still many factors involved, including the teacher. In today's world, there is a

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pressing need for professional teachers who can effectively deliver lessons, foster a positive learning environment, engage students' interests and enthusiasm, and motivate them in their educational journey.

Students exhibit varied learning styles, typically categorized as visual (learning through observation), auditory (learning through listening), and kinesthetic (learning through movement and hands-on activities). As such, they require tailored instructional approaches that align with their individual learning preferences. The primary responsibility of a teacher is to facilitate meaningful and high-quality learning experiences.

What a teacher needs to do is recognize and understand the learning styles of all the students they teach and determine the teaching model that suits the student's needs. The learning model is one of the factors that influence learning. Therefore, it is necessary to apply a learning model that is suitable for the students' conditions. One of the learning models that can be used is the VAK (Visualization Auditory Kinesthetic) learning model.

The VAK learning model is a style that uses three types of sensory modalities in receiving information, namely visual, auditory, and kinesthetic. Learning will be effective and efficient by paying attention to those three aspects. Each student will have their needs met, so they are motivated to learn. Students' learning styles are divided into three categories: Visual, Auditory, and Kinesthetic learning styles. This learning style will be found in the VARK learning model developed by Neil Fleming.

VARK is an acronym that refers to four types of learning styles: Visual, Auditory, Reading/writing preference, and Kinesthetic. The VARK model, often referred to as the VAK model when excluding the reading/writing preference, suggests that students process information in different ways, known as their "preferred learning modes." By identifying these learning styles—be it visual, auditory, reading/writing, or kinesthetic—teachers can better align their approach with the overall curriculum, which has been shown to benefit the entire learning experience.

When students can access information in a manner that suits them best, it significantly boosts their academic confidence. Intelligence is generally understood as the ability to understand information that contributes to knowledge and awareness. Intelligence encompasses the capacity for abstraction and logical, rapid thinking, enabling individuals to adapt and thrive in new environments. According to Gardner (1983), there are seven distinct types of intelligence inherent in every individual or student, a framework that was later expanded to eight by Lazear (1998).

These types include linguistic intelligence, logical-mathematical intelligence, spatial (visual-spatial) intelligence, musical intelligence, kinesthetic intelligence, interpersonal intelligence, intrapersonal intelligence, and naturalistic intelligence. Importantly, intelligence is not a fixed trait but one that can be nurtured and developed over time. Gardner's theory is known as the theory of multiple intelligences, highlighting the idea that while everyone possesses these eight intelligences, the degree to which each is expressed varies according to individual strengths.

Teachers must acknowledge the diverse intelligences present in their students and understand them through the lens of these individual characteristics. As noted by Gardner in the work of Nanang Hanafiah and Cucu Suhana (2010), humans possess multiple intelligences, including musical, bodily-kinesthetic, logical-mathematical, linguistic, spatial, interpersonal, and intrapersonal intelligence. These seven forms of intelligence can be nurtured based on the unique talents of each student.

Recognizing these talents can occur during the learning process, through participation in extracurricular activities, or by engaging with students about their hobbies. This level of understanding can be achieved when teachers demonstrate genuine concern and fully embrace their responsibilities as educators. Tri Gunadi (2010) provides a detailed explanation of human intelligence and its characteristics, serving as a helpful reference for students when designing learning activities based on the characteristics of the students they will be teaching.

The strategy of multiple intelligences learning in practice is to optimize the prominent intelligence of the students as much as possible while striving to maintain other intelligences at the minimum standards set by the institution or school. Thus, the use of multiple intelligences learning strategies remains advantageous for the students who employ them. One thing is for sure, students will emerge as individuals with identities, who have potential in one or more of the eight types of intelligence they possess.

The strategy of learning based on multiple intelligences is an effort to achieve certain competencies in education. By paying attention to the eight types of intelligence possessed by each student, teachers can effectively optimize their students' potential. The strategy of learning based on multiple intelligences is a way to absorb information through the eight intelligence pathways present in each student, but to retrieve it, all intelligence work together in a unique unity according to the needs.

Consequently, students are consistently capable of addressing learning challenges in remarkable ways. The strategy of utilizing multiple intelligences enables students to excel in specific areas based on the intelligence that is most prominent within them. Essentially, each student possesses one or more standout

intelligences. Implementing a learning strategy that focuses on multiple intelligences encourages teachers to innovate their teaching methods.

Educators are encouraged to explore creative approaches that enhance the diverse intelligences of their students. Ultimately, creating enjoyable learning experiences is a fundamental goal that must always be pursued. With determination, nothing is impossible. The Directed Reading Thinking Activity (DRTA) is a focused reading strategy that encourages students to engage with the text. It allows them to predict the story's content and verify their predictions while reading.

According to Russel G. Stauffer, The DRTA strategy focuses on student engagement with the text, as students predict and prove it while reading. With the DRTA strategy, teachers can motivate students' efforts and concentration by engaging them intellectually and encouraging them to formulate questions and hypotheses, process information, and evaluate solutions, as stated by "Rahim, 2011:47". The purpose of using the DRTA reading strategy is to make it easier for students to understand the content of the story, thereby gaining broader knowledge, developing their potential and thinking skills in understanding the story's content, and having a more comprehensive view of the material to be studied.

Listening activities are the foundation for learning other language skills. Based on experience and reality in the field, it can be observed that students' listening skills are still low. Students often struggle with identifying story elements, answering questions related to the stories they have heard, and retelling the content of those stories. Their learning activities have not yet actively engaged them in truly understanding the stories.

The method employed by the teacher involves having students listen to readings for independent practice, rather than directly guiding them. This research focuses on the Direct Listening Thinking Activities (DLTA) strategy for teaching skills to elementary school students. Specifically, it aims to: (1) define the concept of listening skills, (2) explain the Direct Listening Thinking Activities (DLTA) strategy, and (3) outline the steps involved in implementing the DLTA strategy to enhance listening skills.

This study is descriptive and qualitative in nature, providing explanations of various concepts from diverse sources, which are then summarized and synthesized into a coherent and systematic framework. The conclusion of the research is that the Direct Listening Thinking Activities (DLTA) strategy can be utilized in teaching listening skills to elementary school students.

The recommendation given is that teachers should: (a) apply the Direct Listening Thinking Activities (DLTA) strategy according to its stages; (b) choose stories or information that students like; (c) use varied media such as recordings and images; (d) provide more opportunities for students to express themselves. The evolving landscape of education necessitates a heightened focus on communication skills and the capacity for collaboration.

Students are now expected to communicate clearly and effectively while working alongside others. Effective communication involves articulating ideas and thoughts proficiently, whether through spoken or written word, or nonverbal cues. Additionally, honing strong listening skills is essential for grasping the meaning behind the knowledge, values, attitudes, and concerns of others during communication. The modern communication process demands the integration of various media and technologies (Trilling & Fadel 2005:55).

Hypothetical Model of Learning and Innovation Skills 5C (LIS-5C) Discussion Solving learning problems in the era of 21st Century Learning requires LIS-5C, which are: (1) Creativity, (2) Critical thinking, (3) Communication, (4) Collaboration, (5) Celebration (Chinien & Sigh, 2009; Wagner, 2008; Lucas, Spencer, & Claxton, 2012). LIS-5C is a skill and learning innovation that is essential in developing creativity, critical thinking, communication, collaboration with others, and celebrating the best learning outcomes in every problem-solving process.

LIS-5C has a significant impact on the processes of gathering, filtering, absorbing, developing, and applying knowledge in problem-solving.

1.1 A Comprehension of Learning Strategies

In school learning, teaching strategies are generally designed by teachers according to the needs of the subjects they manage. The definition of a learning strategy is a learning activity that must be carried out by teachers and students so that learning objectives can be achieved effectively and efficiently (Kemp in Situmorang 2004: 66). Meanwhile, according to Carey in Situmorang (2004), learning strategy is defined as a set of learning materials and procedures used together to produce learning outcomes in students.

Another opinion describes it as a teacher's approach to using information, from selecting learning resources to defining the students' roles in the learning process (Ely in Situmorang, 1978). From the various definitions above, it can be concluded that a learning strategy is a way of organizing and arranging the components of learning needed to achieve the expected learning objectives. The strategies devised by

teachers based on the specific needs of their subjects are deemed effective when executed correctly and consistently.

However, there are times when educators become preoccupied with simply covering the lesson material and overlook the underlying objectives. Learning strategies focused solely on presenting content tend to lack depth and significance for students (Semiawan, 2002). Consequently, it is essential to further refine these approaches so that the learning experiences are meaningful for the students engaged in the process.

1.2 The Concept of Multiple Intelligence

The concept of multiple intelligences was born as a correction to the concept of intelligence developed by Alfred Binet, who based a person's intelligence on IQ (Intelligence Quotient). Based on the IQ test he developed, Binet placed a person's intelligence on a specific scale that focused solely on logical and linguistic abilities. The implication was that if someone was skilled in logic and language, they must have a high IQ.

However, Binet's test "did not measure a person's intelligence in its entirety, as Binet's IQ test only represented a portion of existing intelligence, namely linguistic, mathematical-logical, and spatial intelligence. In other words, it does not encompass the eight types of intelligence that exist" (Gardner in Situmorang 1983). Linguistic intelligence refers to the capacity to use words effectively, both in speech and writing.

This form of intelligence encompasses a sensitivity to the meanings of words, as well as to the sounds, rhythm, and intonation of spoken language. It also involves understanding the significant impact words can have on influencing mental states and conveying information. Mathematical-logical intelligence pertains to the ability to solve problems systematically. Individuals with this intelligence tend to prefer numbers, sequences, logic, and structure.

They can recognize patterns in relationships and engage in both deductive and inductive reasoning processes. Deductive reasoning involves starting from the general principles to reach specific conclusions, while inductive reasoning works from specific details to formulate broader generalizations.

- a. Visual-spatial intelligence is the ability to see and observe the visual and spatial world accurately (carefully). Visual means images. Spatial refers to things related to space or place. This intelligence involves awareness of color, lines, shapes, space, size, and the relationships between these elements. It also involves the ability to view objects from various perspectives.
- b. Kinesthetic/physical intelligence is the ability to use our bodies skillfully to express ideas, thoughts, and feelings. This intelligence also includes physical abilities in the areas of coordination, balance, endurance, strength, flexibility, and speed.
- c. Musical intelligence is the ability to enjoy, observe, distinguish, compose, form, and express musical forms. This intelligence includes sensitivity to the rhythm, melody, and timbre of the music being heard.
- d. Intrapersonal intelligence is the ability related to self-awareness and self-knowledge. It involves understanding one's strengths and weaknesses. It also involves the ability to motivate oneself and practice self-discipline. People with this intelligence highly value rules, ethics, and morals.
- e. Interpersonal intelligence is the ability to observe and understand the intentions, motivations, and feelings of others. Being sensitive to facial expressions, voices, and body movements of others and being able to respond effectively in communication. This intelligence also enables one to empathize with others, understand their world, comprehend their perspectives and attitudes, and generally lead a group.
- f. Naturalistic intelligence refers to the capacity to recognize, differentiate, express, and categorize elements encountered in nature and the environment. It encompasses the human ability to identify various plants, animals, and components of the universe.
- g. Existential intelligence, on the other hand, involves the ability to situate oneself within the vast, infinite universe and contemplate matters related to the afterlife and mortality. This form of intelligence includes the aptitude to ponder profound questions regarding human existence and the nature of being. Philosophers are often regarded as individuals who exemplify this type of intelligence.
- h. Spiritual intelligence refers to the human capacity to understand and connect with God, acknowledging His existence and oneness. It encompasses the ability to adhere to divine commandments and refrain from forbidden actions. In navigating life, one maintains hope, anchored by the belief that all things rely on God. During moments of joy, there is an opportunity to offer praise and gratitude to Him. This form of intelligence fosters a noble and virtuous character, ultimately benefitting oneself, one's family, society, and the nation as a whole.

1.3 The Concept of DRLTA

According to Walker (2012:196), the Directed Reading Thinking Activity (DRTA) strategy is an instructional approach to reading learning that involves predicting what the author thinks, confirming or revising predictions, and collaborating on opinions. According to Khomariah (2013:5), the DRTA or Directed Reading Thinking Activity learning strategy is a strategy to develop comprehensive reading skills, critical reading, and develop students' experiences based on the form and content of extensive reading.

The DRTA strategy is a reading learning strategy carried out in reading learning, especially intensive reading, by training students to concentrate and think hard in order to understand the content of the reading seriously. According to Wiesendanger (2001), Directed Reading Thinking Activity (DRTA) is a pre-reading, reading, and post-reading strategy.

In this activity, students are involved in guessing (speculating) what the story will be like (what it is about). The Directed Reading - Thinking Activity (DRTA) strategy also involves readers using their experiences to construct the author's ideas. This activity can be used at any reading level, either in groups or individually, with story texts or explanations.

2. Methodology

2.1 Research Design

The research design is a quasi-experiment, with treatment given to elementary school students. The research was conducted in elementary schools in Jakarta, Bogor, Tangerang, South Tangerang City, and Indramayu using purposive sampling. The treatment used was VARK-based learning media and DRTA. The research sample was taken from elementary schools for upper grades, with the consideration of determining the development of multiple thinking and critical thinking skills in students.

The population in this study was elementary school students in Jakarta, Bogor, Tangerang, South Tangerang City, and Indramayu. The research sample was students at the elementary school level. This study used a Nonequivalent Control Group Design. This design is the most commonly used in educational research because the researcher uses pre-determined groups. In this study, two groups of students were selected: an experimental group and a control group, each with a different learning approach.

One group was the experimental group, consisting of students who received learning using the VARK strategies approach. The other group is the control group, which does not receive the same treatment as the experimental group but uses the standard teaching methods typically employed by teachers (Table 2). Both groups were administered pre-tests and post-tests using the same testing instruments. The next step involves comparing the average score differences between the experimental group and the control group. The research design is structured as follows (Table 1):

Table 1. Research Design Structure

Group	Pre-test	Treatment	Post-test
Experiment	O	X	O
Control	O	-	O

Notes:

O: Pre-test (before treatment) and post-test (after treatment) for the experimental class and control class

X: Treatment through application of social skills development education utilizing a visual thinking theory

Table 2. Learning Process Design

Experiment Group	Control Group
- Pre-test	- Pre-test
Activities for Learning During Receiving Treatment:	- Learning Activities:
1. Learning uses a visual thinking technique to enhance social skills.	1. Using the method that teachers frequently employ, learning fosters social skills.
2. A single theme is presented by the teacher as the basis for the learning activities.	2. A single theme is presented by the teacher as the basis for the learning activities.
3. At the same time, students study the theme illustrated in a comic book.	3. One theme is taught to the students.
4. Theme-based practice questions and assessments.	4. Practice tests and assessments using LKS

Experiment Group	Control Group
5. The instructor wraps up the class. - Post-test	5. The instructor wraps up the class. - Post-test - Questionnaire

Table 3. Research Instrument Development Matrix

Problem Formulation	Research Questions	Required information/data	Subject	Data Collection Method	Data Analysis Technique
Development of a Multiple Intelligence-Based Learning Model Oriented towards Critical Thinking Skills in Elementary School Students Through the Application of Visual, Auditory, Read-Write Preferential, Kinesthetic (VARK), and Directed Reading Listening Thinking Activity (DRLTA) Models?	How are the stages of developing a multiple intelligence-based learning model oriented toward elementary school students' critical thinking skills through the application of visual, auditory, read-write preferences, kinesthetic (VARK), and the application of the Directed Reading Listening Thinking Activity (DRLTA) model?	Description of the learning process at the beginning of the study	a. Teacher b. Students c. Researcher	a. Interviews b. Orientation c. Observation d. Reflection e. Analysis	a. Interviews b. Observation c. Reflection d. Analysis
	How do teachers perform using a Multiple Intelligence-Based Learning model oriented towards Critical Thinking Skills in Elementary School Students through the application of Visual, Auditory, Read-Write Preferential, Kinesthetic (VARK), and Directed Reading Listening Thinking Activity (DRLTA) models?	Description of teacher performance in implementing a Multiple Intelligence-Based Learning Model oriented towards Critical Thinking Skills in Elementary School Students through the application of Visual, Auditory, Read-Write Preferential, Kinesthetic (VARK), and Directed Reading Listening Thinking Activity (DRLTA) models.	a. Teacher b. Students	a. Observation b. Reflection c. Analysis	a. Interviews b. Observation c. Reflection d. Analysis
	What are the obstacles and difficulties faced by teachers in implementing Multiple Intelligence-Based Learning oriented towards Critical Thinking Skills in Elementary	Description of obstacles and difficulties in implementing a Multiple Intelligence-Based Learning Model oriented towards Critical Thinking	a. Teacher b. Students	a. Observatio b. Reflection c. Analysis of Learning Activities	a. Interviews b. Observation c. Reflection d. Analysis

Problem Formulation	Research Questions	Required information/data	Subject	Data Collection Method	Data Analysis Technique
	School Students through the application of Visual, Auditory, Read-Write Preferential, Kinesthetic (VARK), and Directed Reading Listening Thinking Activity (DRLTA) models?	Skills in Elementary School Students through the application of Visual, Auditory, Read-Write Preferential, Kinesthetic (VARK), and Directed Reading Listening Thinking Activity (DRLTA) Models.			
	How are teachers using the Visual, Auditory, Read-Write Preferential, Kinesthetic (VARK), and Directed Reading Listening Thinking Activity (DRLTA) models to overcome barriers to Multiple Intelligence-Based Learning focused on Critical Thinking Skills in Elementary School Students?	An explanation of the teachers' initial efforts in the learning process	Teacher	a. Interviews b. Observation c. Reflection d. Analysis	a. Interviews b. Observation c. Reflection d. Analysis

3. Findings and Discussions

3.1 Findings

Every child has unique characteristics and different levels of intelligence; schools can accept students in any condition (all levels of intelligence) using the MIR (Multiple Intelligences Research) system, which employs VARK and DRLTA to identify students' intelligence tendencies through parent interviews, identification of children's learning styles, introduction to school programs, parenting, and sharing of MIR results with parents. Classroom mapping based on MIR results and dominant learning styles; Multiple intelligences-based learning emphasizes enjoyable and student-centered learning. The pilot test results show:

- a. Teachers and students jointly participate in the learning process using lesson plans designed with multiple intelligences using VARK and DRLTA. There are some challenges related to the themes developed using online learning
- b. The development of materials with comic themes and media was favored by children for reading and learning, thereby increasing the time available in the learning process.
- c. The implementation of materials through face-to-face and online learning activities was preferred by most teachers and students in a face-to-face setting. Therefore, for subsequent observations, face-to-face sessions were conducted with health protocols, limiting the number of students to no more than 10 per class and rotating attendance.
- d. The implementation of online learning requires a significant amount of internet data, necessitating additional funding to support such activities. Additionally, challenges during the learning process arise due to occasional errors when accessing shared applications or learning materials.
- e. Nearly 60% of teachers and students gradually adapted to the VARK and DRLTA-based learning model, which tends to favor face-to-face meetings.

The following is MIR learning material using VARK and DRLTA

LEARNING MATERIAL DESIGN

THEME: THE ENVIRONMENT

Grade 5

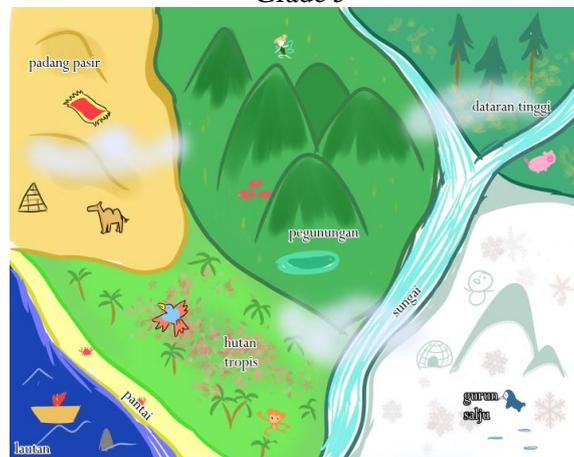


Figure 1.

Material Development

a. Roots

Roots are the lower part of a plant's axis and usually develop below the soil surface, although some roots grow above ground. The first roots in seed plants develop from the apical meristem at the tip of the embryonic root in the germinating seed. The embryonic root is also called the radicle.

b. Stem

The stem is a shaft with leaves attached to it. At the growing tip of the stem, the stem is surrounded by young leaves and becomes a terminal bud. In older stem sections where leaves are spaced farther apart, the nodes (where leaves attach to the stem) can be distinguished from the internodes, which are the stem sections between two consecutive nodes. Axillary buds are typically found in the leaf axils. Depending on internode growth, various plant forms can be distinguished.

c. Leaves

The leaves of Angiosperms exhibit a wide variety of anatomical and morphological structures. In most Angiosperms, the leaf can be distinguished into the leaf base, leaf stalk, and leaf blade. The shape, structure, and size of these three parts are useful in determining leaf classification. At the base of dicotyledonous leaves, there is often a protrusion called a stipule. The vascular tissue supply for the stipule is obtained from the leaf vein. Like roots and stems, leaves consist of a dermal tissue system, namely the epidermis, vascular tissue, and ground tissue known as the mesophyll. Since leaves typically do not undergo secondary thickening, the epidermis remains as the dermal system. However, in persistent bud scales, a periderm may form.

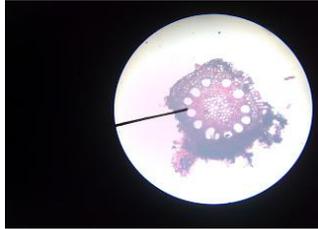


Figure 2.

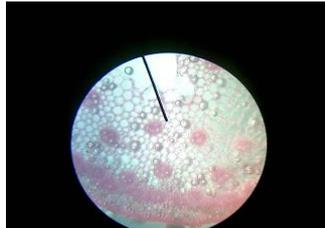
Taking photos/drawing observations.

1. Results of Observation

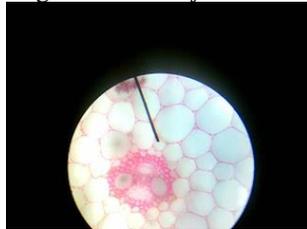
MONOCOTILE



Cross section of corn root



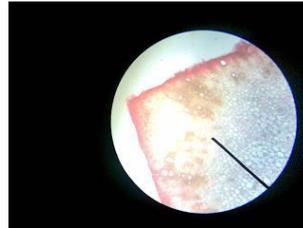
Cross section of corn stalk 10x magnification objective lens



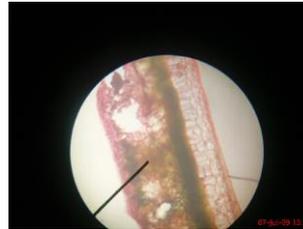
Cross section of corn stalk 40x magnification objective lens

DICOTILE

Cross section of the root



Cross section of a rubber tree trunk



Cross section of a rubber tree leaf

2. Discussion Questions

- What are the differences between the roots, stems, and leaves of monocotyledonous and dicotyledonous plants?
- What is the difference between primary and secondary roots?
- What are the functions of roots, stems, and leaves in plants?
- Explain the various types of tissue found in the roots, stems, and leaves of plants.
- What is the role of water in the survival of plants?

THEME: GETTING TO KNOW MY CULTURE

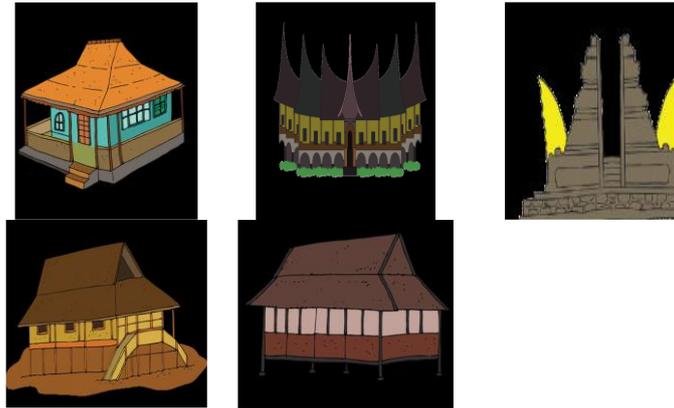
Grade 4

Discussing with others in the group!

- Take a look at the traditional attire in the photo next to this. Do they all wear the same traditional costume? Explain!



2. Take a look at the photo of the traditional house. Do you see the same traditional house? Explain!

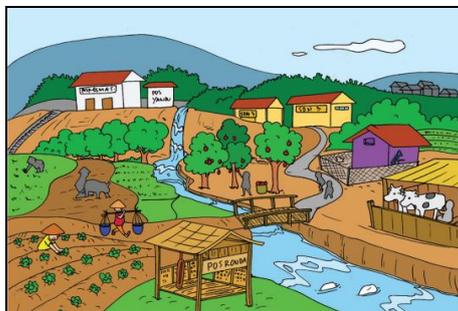


THEME: MY RESIDENCE

Grade 3

How is your current living situation?

What kinds of activities are available in the area around your home?



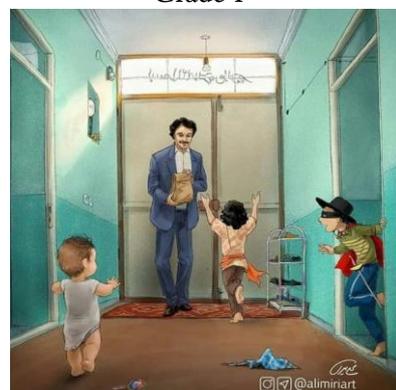
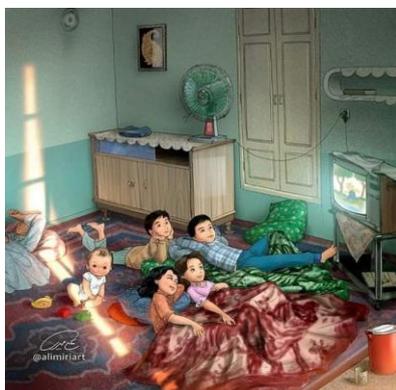
THEME: MY EARTH MY HOME

Grade 2



THEME: TOGETHERNESS

Grade 1





In the significance of Multiple Intelligences-based learning using VARK and DRLTA, the following results were achieved:

- A paradigm shift in teachers' teaching methods, with teachers becoming clearer
- in designing and selecting learning strategies;
- Students always enjoy and are happy to learn;
- The material is easy to accept and understand;
- Children are more critical, creative, and confident.

Students excel and achieve in Multiple Intelligences-based learning. Learning is not merely aimed at improving academic scores/grades but at creating enjoyable learning experiences that humanize students, allow their talents and interests to emerge, and prepare them with life skills. Based on the results of the observation, shows that teachers need multiple intelligences-based learning using VARK and DRLTA.

From the results of an observation questionnaire administered to 30 teachers, it was found that 90% of teachers have implemented multiple intelligences-based learning. Teachers require a learning approach based on multiple intelligences. The potential of multiple intelligences also facilitates the implementation of MI-based learning. The obstacles to implementing multiple intelligences-based learning in schools include the lack of variety in designing learning strategies, such as learning media and methods, as well as parents and guardians who do not yet understand multiple intelligences-based learning.

This was identified during the focus group discussion (FGD) while implementing a learning approach based on multiple intelligences. Challenges in MI-based learning were also identified in the preliminary study, where 60% of the 30 respondents reported difficulty in implementing variations in MI-based learning methods and media. Challenges are not obstacles to implementing MI-based learning. This is evident in the survey findings regarding teachers' interest in applying MI-based learning, with 90% of the 30 respondents expressing interest in applying MI-based learning.

The average score obtained was 3.46, indicating a significant need for learning based on multiple intelligences among respondents. The essential components required for this type of learning include effective learning strategies, methods, and media. Based on the author's observations, preliminary studies, and relevant research, it can be concluded that multiple intelligences-based learning is essential for teachers aiming to enhance students' achievements and talents.

The development of the multiple intelligences-based learning models created by the author has undergone a focus group discussion (FGD) process and evaluation by both experts and practitioners. The

feedback from these evaluations revealed an average rating of 4.77 from psychology experts and 4.33 from practitioners, as detailed in the appendix. The overall average rating for the development of the multiple intelligences-based learning model, combining feedback from both groups, is 4.55.

This suggests that the developed learning model is viable for use. The following table presents the ratings given by participants across individual, group, and limited tests. The overall average score from participants in this trial is 3.65. The aspects evaluated in MI-based learning include the detection of multiple intelligences, which received an average score of 3.61; multiple intelligences overall, with an average of 3.68; learning methods, averaging 3.62; and learning media, which scored an average of 3.69. Refer to **Table 4** for the Average Participant Assessment Scores (Individual Tests, Group Tests, and Limited Tests) about the development of a Multiple Intelligences-Based Learning Model utilizing VARK and DRLTA.

Table 4. Average Participant Assessment Scores

Aspect being Evaluated	Average Score			Average
	Individual Trial (6)	Group Trial (12)	Limited Trial (25)	
Multiple Intelligences Detection	3,5	3,54	3,8	3,61
Multiple Intelligence Indicators	3,5	3,68	3,86	3,68
Learning Methods	3,58	3,54	3,74	3,62
Learning Media	3,66	3,62	3,8	3,69
Average Score				3,65

Based on the above average, the aspects of multiple intelligences detection, variation of multiple intelligences, learning methods, and learning media in multiple intelligences-based learning are very good. Thus, the development of a multiple intelligences-based learning model is easy for teachers to implement. The results of the respondent's assessment of the multiple intelligences-based learning model in individual, group, and limited tests can be seen in the comparison in the table above.

In general, the results of the pilot test show an increase in respondents' assessment of the multiple intelligences-based learning model. This indicates that the multiple intelligences-based learning model is effective in the learning process, as evidenced by respondents' assessment of the learning model development. Based on the research results, the development of a multiple intelligences-based learning model can effectively improve student achievement and bring out their talents and interests.

Based on the researcher's analysis, the development of this multiple intelligences-based learning model has the following advantages:

- It makes it easier for teachers to design and package learning with strategies that suit students' learning styles; thus, teachers adjust to students' learning styles rather than students adjusting to teachers' teaching styles.
- Teachers become more creative in planning and implementing appropriate and more varied learning methods to develop students' multiple intelligences;
- Provides a perspective for human potential development;
- Attracts students' interest and optimizes their abilities;
- Students appear more active, creative, independent, and confident.

Based on the advantages of this learning model development, the researcher identified the following weaknesses:

- The implementation of multiple intelligences-based learning is still constrained by limited funds and teaching aids/media that are not proportional to the number of students.
- Teaching methods and media still need to be developed so that teachers do not lack variety in their teaching strategies, because not all students like and are comfortable with the teaching methods used, as children's abilities are not yet fully able to accept different types of intelligence.
- The placement of students who are personally inclined toward kinesthetic learning disrupts the classroom atmosphere for students who are not kinesthetic learners, and parents' lack of understanding of MI means that when there is an increase or change in students' intelligence tendencies, parents are unable to fully accept it.
- This MI-based learning model still requires extensive testing by teachers. This is due to limitations in funding and time.

Below are the visual recordings of learning using the VARK and DRLTA models.

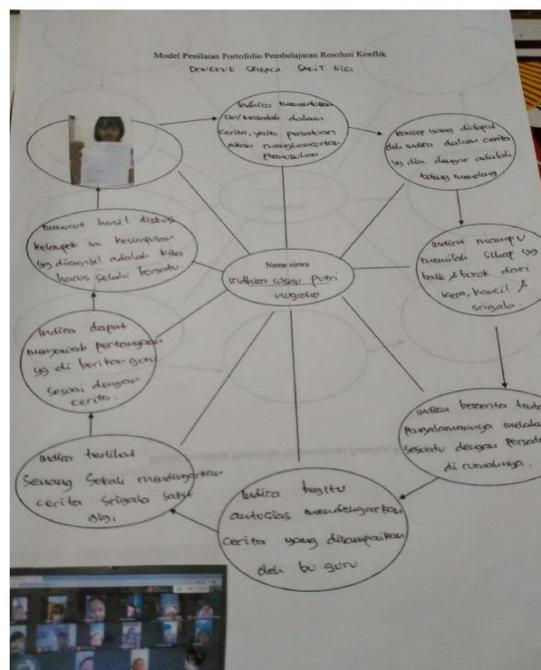


Figure 3. Visual Recordings of Learning Using the VARK and DRLTA Models

4. Conclusions

Basic education serves as the cornerstone of the entire educational framework, significantly influencing the quality of education at subsequent levels. Effectively tackling issues related to basic education represents a strategic move toward enhancing the education system, which, in turn, impacts the national educational landscape.

Given its critical importance in improving the quality of human resources, the initiatives aimed at elevating the standards of learning within primary education warrant serious attention. In the 1980s, Gardner introduced a revolutionary concept of intelligence, broadening its scope beyond the traditional realms of logical-mathematical and linguistic intelligence to encompass musical, kinesthetic, intrapersonal, interpersonal, spatial, and naturalistic intelligence.

Acknowledging and valuing individual differences is essential, necessitating that education not only recognizes these distinctions but also nurtures children's potential to its fullest extent. Education must pay attention to and be able to develop children's potential to the maximum for the benefit of their own lives and the communities in which they live. Thus, schools must provide opportunities for children to learn according to their intelligence, interests, talents, and learning styles.

The multiple intelligences-based learning model oriented toward higher-order thinking Skills (HOTS) is a learning model based on the diverse abilities or different intelligences of learners. With these intelligences, learners can adapt to new situations and learn from experience. According to Gardner, this learning model is a learning model that uses and applies the theory of multiple intelligences, which needs to be prepared and designed well before the learning process is implemented.

The application of the VARK (Visual, Auditory, Read-Write Preferential, Kinesthetic) learning model is oriented toward delivering teaching materials using the senses of the students. Thus, students can optimize the functions of their senses in the learning process to achieve maximum learning outcomes. The DRLTA (Directed Reading Listening Thinking Activity) reading strategy is a direct reading and thinking strategy, enabling students to focus on the text and predict the content of the story by verifying it while reading.

The DRTA reading strategy aims to enable students to read clearly by connecting various prior knowledge they have to build understanding. The assumption is that understanding can be enhanced by building background knowledge, setting specific reading goals, discussing, processing information, and developing understanding after reading. The need for Multiple Intelligences-based learning using VARK and DRLTA begins with a learning process that is not based on the child's learning style, resulting in low student learning outcomes.

The concept of applying Multiple Intelligences is a concept that emphasizes uniqueness and always finds the strengths of children. Furthermore, this concept believes that no child is stupid because

every child has at least one strength. If this strength can be detected early on, it automatically becomes the child's potential for intelligence. Based on this, a school based on multiple intelligences can accept students in any condition.

This is proven by the need assessment score of 3.54. The development of a multiple intelligences-based learning model using VARK and DRLTA produces a learning model diagram that includes: 1) multiple intelligences potential (detection and indicators of multiple intelligences) through the MIR test, 2) the implementation of multiple intelligences-based learning that includes students' intelligence tendencies, learning methods, and learning media that can be used in the teaching and learning process, 3) the significance of multiple intelligences-based learning, 4) Outputs from the application of multiple intelligences-based learning.

The feasibility of the multiple intelligences-based science learning model is based on:

- a. Expert psychological assessment is evaluated based on three aspects: supporting theoretical elements, learning stages, and learning implementation techniques, with a score of 4.77, classified as "highly feasible" for use.
- b. Evaluation by education practitioners based on three aspects: supporting theoretical elements, learning stages, and implementation techniques, scoring 4.33 or "highly feasible" for use.
- c. Field trial evaluation based on four aspects: detection of multiple intelligences, MI indicators, learning methods, and learning media in individual field trials, group field trials, and limited field trials.

The effectiveness of the multiple intelligences-based learning model using VARK and DRLTA is based on comparisons and increases in the average scores on individual tests with an average of 3.56, tests with an average of 3.59, and limited trials with an average of 3.8. Thus, it can be concluded that this multiple intelligences-based learning model is effective for teachers and students in the learning process based on comparisons and average increases from individual, group, and limited tests.

Suggestions

- a. This multiple intelligences-based learning model using VARK and DRLTA can be developed in other elementary schools that have not yet applied MI-based learning.
- b. The results of developing this Multiple Intelligences-based learning model using VARK and DRLTA can be used as a reference in implementing learning at the elementary school level.
- c. The results of developing this Multiple Intelligences-based learning model using VARK and DRLTA can serve as a guideline that learning is not merely aimed at improving academic scores/grades but also at creating enjoyable learning experiences, humanizing students, and preparing them with life skills.

References

- Armstrong, Thomas. (2009). *Multiple Intelligences in the Classroom: 3rd edition*. Virginia. ASCD.
- Baum, Susan., Viens, Julie., & Slatin, Barbara. (2005). *Multiple Intelligences in the Elementary Classroom*. New York. Teacher College, Columbia University.
- Budiningsih, Asri C. (2005). *Belajar dan Pembelajaran*. Jakarta. Rineka Cipta.
- Campbell, L., Campbell, B., & Dickinson, D. (1996). *Teaching and Learning through Multiple Intelligences*. Needham Heights, MA. Allyn & Bacon.
- Dallas Independent School District, 1995, *Visual-auditory-kinesthetic (V.A.K.) Multisensory Phonics: K- 3 Teacher Guide*, the District
- DePorter, Bobbi. 2004. *Quantum learning: membiasakan belajar nyaman dan menyenangkan*. Bandung: Kaifa.
- Fleming, Neil D. 2001. *Teaching and Learning Styles: VARK Strategies*. N.D. Fleming.
- Jeral, Kim M. 2010. *The Influence of Visual, Auditory, and Kinesthetic Learning Opportunities*. Southwest Minnesota State University.
- Fleetham, Mike. (2006). *Multiple Intelligences in Practice Enhancing Self-Esteem and Learning in the Classroom*. Stafford. Network Continuum Education.
- Gardner, Howard. (1993a). *Frames of Mind; The Theory of Multiple Intelligences-10th anniversary edition*. New York. Basic Books.
- _____ (1993b). *Multiple Intelligences. The Theory in Practice*. New York. Basic Books.

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- Hoerr, Thomas R. (2000). *Becoming a Multiple Intelligences School*. Virginia. ASCD.
- Huberman, A.M. dan Miles, M. B. (1985). *Qualitative Data Analysis; a Sourcebook of New Methods*. London. Sage Publications.
- Jasmine, Julia. (2012). *Profesional's Guide Teaching with Multiple Intelligences (Metode Mengajar Multiple Intelligences) (Terj)*. Bandung. Nuansa Cendekia.
- Kuhns, Bradley W. 1987. *Mind/Body Therapy, Auditory, Visual, Kinesthetic, Neuro-Linguistic Programming (NLP), An Additional Communications Approach for Psychotherapists, Counselors and Law Enforcement*.
- Lazear, David G. (1992). *Teaching for Multiple Intelligences*. Indiana. Phi Delta Kappa Education Foundation.
- McKenzie, Walter. (2005). *Multiple Intelligences and Instructional Technology*. Washington. International Society for Technology in Education.
- Moleong. (2002). *Metodologi Penelitian Kualitatif*. Bandung. Remaja Rosdakarya
- Muhaimin. (2003). *Arah Baru Pengembangan Pendidikan Islam. Pemberdayaan, Pengembangan Kurikulum hingga Redefinisasi Islamisasi Pengetahuan*. Bandung. Nuansa Cendekia.
- Pasak, Taufik. (2007). *Brain Management for Self Improvement*. Bandung. Mizan.
- Pupuh Fathurohman dan M. Sobry Sutikno. 2010. *Strategi Belajar Mengajar Melalui Penanaman Konsep Umum & Islam*. Bandung: Refika Aditama.
- Rasydianah, Andi. (1995). *Butir-Butir Pengarahan Dirjen Bimbaga Islam pada Acara Pelatihan Peningkatan Wawasan Ilmu Pengetahuan dan Kependidikan Bagi Dosen Pendidikan Agama Islam pada Perguruan Tinggi Umum*. Bandung, 11 September 1995.
- Rose, C dan Nichol, M.J. (2001). *Accelerated Learning for the 21st century (Cara Belajar Cepat Abad XXI)*. Penerjemahah; Dedi Ahimsa. Bandung. Nuansa Kerjasama dengan Pusat Perbukuan Depdiknas.
- Salim, Agus. (2006). *Teori & Paradigma Penelitian Sosial*. Buku Sumber untuk Penelitian Kualitatif. Yogyakarta. Tiara Wacana.
- Semiawan, Conny. (1999). *Pendidikan Tinggi, Peningkatan Kemampuan Manusia Sepanjang Hayat Seoptimal Mungkin*. Jakarta. Depdikbud. Dirjen Dikti
- Suparno, Paul. (1997). *Filsafat Konstruktivisme dalam Pendidikan*. Yogyakarta. Kanisius.
- Syukri. (2003). *Pendidikan Islam dalam Konteks Politik Pendidikan Nasional*. Jurnal Ulumuna. 7 (12).
- Tomlinson, Carol Ann. (1999). *The Differentiated Classroom. Responding to the Needs of All Learners*. Virginia. Ascd.
- Tri Gunadi. 2010. *Optimalkan Otak Kanan, Otak Kiri, Otak Tengah, dan Otak Kecil*. Jakarta: Penebar Plus.
- Yaumi, Muhammad. (2012). *Pembelajaran Berbasis Multiple Intelligences*. Jakarta. Dian Rakyat.
- Yin, Robert K..(1994). *Case Study Research; Design and Methods*. Newbury Park CA. Sage Publication.