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Article

Model of Questioning Skill Teacher for Developing Critical Thinking Skill in Early Childhood Education in West Sumatra, Indonesia

Dadan Suryana

Universitas Negeri Padang, Indonesia

Email: dadan.suryana@yahoo.com

<https://orcid.org/0000-0002-0953-3124>

Resti Yulia

Universitas Negeri Padang, Indonesia

Email: restiyulia911@gmail.com

<https://orcid.org/0000-0002-7089-587X>

Safrizal

Institut Agama Islam Negeri Batusangkar, Indonesia

Email: safrizal@iainbatusangkar.ac.id

<https://orcid.org/0000-0001-8293-586X>

Abstract

Good questioning skills among teachers is a basic competence to develop students' thinking skills. Much of the past research have highlighted the lack of good questioning skills in teachers, which is limited to elementary questions like initiating a lesson, which would not invite any open answers nor stimulate students' thought processes. This study aimed to emphasize upon the role of a teacher's or mentor's questioning skills in the development of students' critical thinking skills in Rumah Anak Sholeh (RAS) institute. By using a mixed method research design, the study took shape of a case study. With the researcher, being the key instrument, the data collection process was carried out through in-depth interviews, participatory observation, and documentation research. To ensure the validity of the data, a triangulation process was carried out. The results found that children's critical thinking skills are formed by two principles: first, teacher's questioning skills which acted as mentoring principles; second, questions framed in open-ended question model. These two principles essentially supported the function of teacher's questioning skills so that students not only received information but managed information, resulting in the development of children's critical thinking skills. The findings have interesting implications because the characteristics found in children because of the questioning model are not usually found in formal school levels. Further research is needed to measure the effectiveness of the results found in this study.

Keywords

Teacher's Questioning Skills • Critical Thinking Ability • Early Childhood • Rumah Anak Sholeh

Correspondence to Dadan Suryana, Associate Professor, State University of Padang, Padang, Indonesia. Email: dadan.suryana@yahoo.com

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21st-century skills are keywords in facing the era of the industrial revolution 4.0. This era is marked by rapid changes in various lines of life caused due to the chaotic use of internet-based technology (Junedi, Mahuda, & Kusuma, 2020; Nabilah, 2020; Prayogi & Estetika, 2019). Dissemination of information at such massive and large scale can be both beneficial and challenging. These challenges, if not handled properly, will potentially cause greater problems. To cope up with these challenges, teachers require such skills that could stimulate students' critical thinking skills. Good critical thinking skills can help students fight the moral decadence that afflicts society, especially the younger generation, who have a high level of urge and curiosity. Hence, the younger generation needs to be equipped with skills that will enable them to survive and wisely adapt to the challenges of the 21st century (Apsari, 2016; Feng, 2013; Gelder, 2005; Paul & Elder, 2008; Sugiyarti, Arif, & Mursalin, 2018; Zubaidah, 2016). One of the means to provide these skills is through education. Education is a proven conscious effort in developing human potential, and to provide opportunities to explore the environment and natural surroundings. While a child explores the environment, it collects a variety of useful information. The more information a child collects, the better the child's skills are. One of the skills that can be developed in early childhood through education or through learning is the ability to think critically.

Critical thinking skills allow children to observe and process the information they receive and eventually convert them into attitudes (Han & Brown, 2013; Ridley, 2006; Walsh, Murphy, & Dunbar, 2007). Good critical thinking patterns will also encourage children to become problem solvers. Such children who are accustomed to being problem solvers are less dependent on other people in dealing with problems (Nabilah, 2020; Sugiyarti et al., 2018). Hence, we need teachers who have good pedagogical skills to stimulate critical thinking skills in children. Good pedagogical skills develop a teacher's ability to understand children as well as to actualize their potential. One of the pedagogic skills that teachers must have is questioning skills (Fadlila, Palupi, & Hafidah, 2019; Gall, 1970; Kamarulzaman, 2015; Kamarulzaman, Ahmad, & Kamarulzaman, 2014; Lewis, 2007; Santoso, Yuanita, & Erman, 2018; Savage, 1998; Tuma & Head, 1989; Yunita, Meilanie, & Fahrurrozi, 2019). However, in the current teaching situation, teachers have very limited questioning skills. Their questions are confined to routine activities or such basic questions about the daily news, current date, or the day. These questions are mostly closed-ended questions that require a child to answer with one or two words like 'yes' and 'no' or choose one of the options. Past research studies also pointed out at this problem stating that many teachers have not mastered advanced questioning skills, and that questions asked by the teacher are often limited to basic questions such as guru questions to initiate or open lessons (Cahyani, Nurjaya, & Sriasih, 2016; Prasetyaningarum & Rohita, 2014; Sunarto & Rohita, 2021).

The ability to ask questions is defined as the ability to stimulate students' thought process with the questions. Good questioning skills stimulate children's curiosity, develop interest, and encourage children to ask and get used to answering open-ended questions. This leads children to think critically (Prasetyaningarum & Rohita, 2014). Children already have the relevant experience and the stimulus in the form of questions can help them process information from their experiences. This constructs their knowledge a well. Good questioning skills are very much influenced by skills possessed by the teacher. If the teacher can ask questions by paying attention to language selection, intonation, and suitability of questions, it will affect the child's desire to think. One sign of children becoming interested in a subject or thinking about it is seen in their asking questions continuously. Such an ability of children to question the information they receive and filter it is called critical thinking skills. This kind of ability is what children need in facing the challenges of the 21st century (Junedi et al., 2020; Prayogi & Estetika, 2019; Zubaidah, 2016). But unfortunately, it is the opposite of the existing phenomena as described at the beginning of this paragraph.

Based on these studies, it is proven that good questioning skills in teachers contribute to the development of critical thinking skills in students (Cojocariu & Butnaru, 2014; Corley & Rauscher, 2013; Nappi, 2017; Paul

& Elder, 2008). One of the institutions that have taken this initiative to develop such skills in students is the Rumah Anak Sholeh (RAS). It is a childcare institution that focuses on cultivating a moral character of children. RAS is involved in all types of activities from early childhood to elementary school age. Mentoring and care are carried out through learning activities accompanied by teaching staff called mentors. At RAS, mentors are not allowed to provide solutions directly to children. The mentor's job is to assist children through questions, even though the problems faced by children may be very simple. For example, if a child runs out of HVS or wood-free paper for drawing and asks the mentor to provide, the mentor will usually only guide the child with questions that can assist the child to take it by own. If the child has any difficulty taking on its own, because the HVS packet is still not open, the mentor may ask again to find a solution to open it, either opening it slowly or by using a tool such as scissors. The ability to ask questions like this in teacher's trained children to be problem-solvers for their problems and makes them think of previous experiences.

This study was inspired by uniqueness of the RAS Institute. RAS is a non-formal education institution that was established to focus on providing various characters and abilities of children at the kindergarten level to the elementary school level. This institution is one of the references and examples in providing non-formal education with different methods from formal education. The format of learning carried out at RAS uses the paradigm that every child is a star, so that the focus of learning is adjusted to the needs of children, both those containing character values, general education, and other skills such as critical thinking. The focus of this study was to find out how questioning ability was developed and carried out by mentors and how it built experiences in students to develop their critical thinking skills at kindergarten age. The study also attempted to describe teachers' profile providing how they developed critical thinking skills in early childhood through their questioning skills at Rumah Anak Sholeh.

Method

Participants

This research was conducted at the RAS, Padang using a mixed research design approach as recommended by Creswell and Poth (2016) and Miles and Huberman (1994). The qualitative section of this study was carried out through an intense and a prolonged contact with participants in naturalistic settings to investigate their everyday and extraordinary lives and produce data in the form of descriptions of words, written or spoken words of people and observable behavior. The use of mixed method research aimed to describe the profile of the teacher's questioning skills model in developing children's critical thinking skills, as well as knowing the depth of children's critical thinking skills formed from the teacher's questioning skills.

The research informants at RAS consisted of the head of the foundation, teachers, and students who were selected with the snowball sampling technique. It was ensured that each informant was able to represent the subject under study and provide data. A special attention was given on the profiles of each teacher and their ability to ask questions for developing critical thinking skills in children. The interest of informants in the current research was sustained by making them remain involved in the research questions until the data was collected as a whole, for each interview question.

Instruments

The instrument of data collection in this research was the researcher himself (Creswell & Poth, 2016; Miles & Huberman, 1994). To facilitate data collection, the researchers used tools in the form of observation guidelines, interview guides, and recording devices to document all activities, personnel, places where the research was conducted. The content guidelines of the observation guide are presented in Table 1.

Table 1. *Research Observation Guidelines*

No	Observation Points	Observed aspects
1	Lesson Planning	Use of the learning guide Stages of activities based on planning in accordance with the development of critical thinking skills
2	Activity Implementation	Approaches or strategies used by teachers in shaping children's critical thinking skills Method used in developing children's critical thinking skills Use of the supporting media Development of critical thinking skills Pattern of questioning skills used by teachers in developing critical thinking skills.
3	Evaluation	Assignment concept used by teachers in developing students' critical thinking skills.

Table 2 presents the interview guide used by researchers which covers the main questions and information expected to be retrieved from the informants in accordance with the research objectives.

Table 2. *Interview Guidelines for Teacher or Mentor*

Informant	Main questions
Mentor	1. What are the mentor's guidelines and references in planning learning?
	2. Who is the consultant in lesson planning?
	3. How is the pattern of questions given to form children's critical thinking skills?
	4. What are the characteristics of the questions given by the mentor in developing children's critical thinking skills?
Foundation	5. What are the forms of questions asked by mentors to children of different ages?
	6. How is RAS trying to develop children's critical thinking skills?
	1. Are there other activities that RAS does to develop children's critical thinking skills?
	2. Is there a guide given by the teacher in providing a question model to form children's critical thinking skills?

Furthermore, for quantitative research data, especially on the formation of children's critical thinking skills, researchers used a questionnaire packaged in a performance observation sheet by referring to the critical thinking skills grid. The grid of observation sheets measured children's critical thinking skills as presented in Table 3.

Table 3. *Grid of Children's Critical Thinking Skills Performance Observation Sheet*

Variable	Aspects
Give a simple explanation	1. Focus the question by formulating the problem
	2. Formulate criteria to determine possible answers
	3. Analyze arguments by identifying conclusions
	4. Identify reasons that are not stated
	5. Ask and answer an explanation by adjusting to the source
Build Basic Skills	6. Adapt to the source
	7. Observe and consider the results of observations
Draw a conclusion	8. Reduce and consider the conclusions and statements
Provide further explanation	9. Define terms and consider them
	10. Identify assumptions
Develop strategy and tactics	11. Determine actions in making solutions
	12. Decide what to do in the meantime

Adapted from Ennis (1989)

The grid in [table 3](#) was validated by using content validation and construct validation. In the process of validating the lattice instrument for the performance of children's thinking skills, it was carried out using expert judgment techniques. The results that were validated through expert judgment were analyzed using the Aiken's V formula ([Aiken, 1980](#)), as follows.

$$V = \sum s / [n(c - 1) \dots\dots\dots (1)$$

Where :

- s : r- lo
- lo : Lowest validity score (s = 1)
- c : highest validity score (s = 4)
- r : The value provided by validator

The results of the calculations were based on the above formula, followed by the instrument eligibility criteria as grouped in [Table 4](#) below.

Table 4. *Questionnaire Validity Analysis Score*

<i>Score Analysis Results</i>	<i>Category</i>
0.76 – 1	Instrument very worth using
0.51 – 0.75	Instrument worth using
0.26 – 0.50	Instrument less appropriate to use
< 0.25	Instrument not suitable to use

Procedure

The data collection was carried out in three methods, participants’ observation, in-depth interviews, and documentation. Participants’ Observations were carried out repeatedly until the required data related to the profile of the teacher's ability to ask questions for developing children's critical thinking skills were found. Observation activities were carried out in a participatory manner, where researchers participated in activities carried out by the RAS, Padang. The subjects observed in this case were students and teachers who were at the RAS Institute. Students were observed by looking at critical thinking skills based on the grid of questions in [Table 3](#), while observations of teachers were based on a model of questioning skills that developed children's critical thinking skills. This was done to obtain data that was in naturalistic settings ([Kawulich, 2004a; Kawulich, 2004b](#)). The researcher recorded all these events that occurred during observations. Likewise, in-depth interviews were conducted on informants in a supportive atmosphere that facilitated data collection in a very relaxed manner. The interviews with children were grouped age-wise or based on the class they belonged to. The interview stage was carried out for mentors as people who applied learning patterns at RAS. This was done to ensure that all informants in one group have the same level of cognition and same developmental stage. Interviews progressed from one informant to another while a few probe questions were added based on the information obtained from the responses. This ensured that all the information being obtained was in line with research objectives. During the whole process, documentation research was also done by analyzing and collecting documents at the RAS and recording their day-to-day activities. The research was completed in about two months, starting from 29th April to 10th June, 2020. The data obtained through the retrieval technique is done by using the interview code (CW), Observation (CL), and Documentation (DC). These codes were used to facilitate researchers to carry out data analysis at a later stage.

Data analysis

The data which was collected and analyzed involved a rigorous data collection process, data reduction, data presentation, and conclusion ([Creswell & Poth, 2016; Kawulich, 2004a; Kawulich, 2004b; Miles & Huberman, 1994](#)). The data collection process as mentioned earlier included participants’ observations, in-depth

interviews, and document analysis. The data reduction process was carried out by sorting out the appropriate data and separating them into data groups or categories based on research questions. In other words, a data coding process was carried out to sort out data that matched the research questions and discard data that did not match. This coding was done using the manual coding method. Data presentation was done by displaying appropriate information based on the categories made during the coding stage and by describing the entire set of data for easy reading. Finally, conclusions were drawn based on the data displayed.

The validity of the data was ensured in two ways: Triangulation, and Member Checking (Creswell & Poth, 2016; Kawulich, 2004a). The data triangulation was done by first accumulating the data generated from different data collection methods and then compare the data obtained from one informant to another across each data collection method. To further increase the rigor of the research, the researchers used a credibility test by extending the research period, increasing persistence, discussing with colleagues, and conducting member checks until all the research criteria were achieved.

Results

Instrument Validity

The results of the validation of research instruments in measuring children's critical thinking skills are carried out by giving expert judgment which is assessed using a scale of 1 to 4. The results of the validation that have been carried out with the expert judgment technique can be seen in Table 5 below.

Table 5. Results of Validation Assessment of Children's Critical Thinking Skills Performance Observation Sheet by Expert

Variable	Aspects	Marks
Give a simple explanation	1. Focus the question by formulating the problem	4
	2. Formulate criteria to determine possible answers	4
	3. Analyze arguments by identifying conclusions	4
	4. Identify reasons that are not stated	3
	5. Ask and answer an explanation by adjusting to the source	4
Build Basic Skills	6. Adapt to the source	3
	7. Observe and consider the results of observations	4
Draw a conclusion	8. Reduce and consider the conclusions and statements	4
Provide further explanation	9. Define terms and consider them	3
	10. Identify assumptions	3
Develop strategy and tactics	11. Determine actions in making solutions	4
	13. Decide what to do in the meantime	4

The values obtained were based on expert judgment about the validity of Assessment of Children's Critical Thinking Skills. The Performance Observation Sheet was analyzed using the Aiken's V formula, so that the following values were obtained as presented in Table 6.

Table 6. Validation results by experts

Expert	Item																							
	1		2		3		4		5		6		7		8		9		10		11		12	
	n	s	n	s	n	s	n	s	n	s	n	s	n	s	n	s	n	s	n	s	n	s	n	s
A	4	3	4	3	4	3	3	2	4	3	3	2	4	3	4	3	3	2	3	2	4	3	4	3
∑s	3	3	3	3	2	3	2	3	3	2	3	3	2	2	3	3	2	2	3	3	3	3	4	3
V	1	1	1	1	0.67	1	0.67	1	1	1	0.67	1	1	1	0.67	0.67	1	1	1	1	1	1	1	1

The value of V for item 1 was obtained from $V = 3/(4-1) = 1$; V for items 2, 3, 5, 7, 8, 11, 12, and for item 4 was obtained from $V = 2/(4-1) = 0.67$ and same for V for item 6, 9, 10. Aiken's V coefficient value ranged

from 0 to 1. Coefficient value Aiken's of 1 was found in the item 1, 2, 3, 5, 7, 8, 11,12, while in items 4, 6, 9, 10 Aiken's coefficient value of 0.67 was achieved. The Aiken's average coefficient was $V = 0.89$. This suggests a high content validity and the assessment of children's critical thinking skills performance observation sheet and rated as "Very worth using".

The results of the research related to the profile of the mentor's questioning skills at the RAS in developing students' critical thinking skills are illustrated in Figure 1.

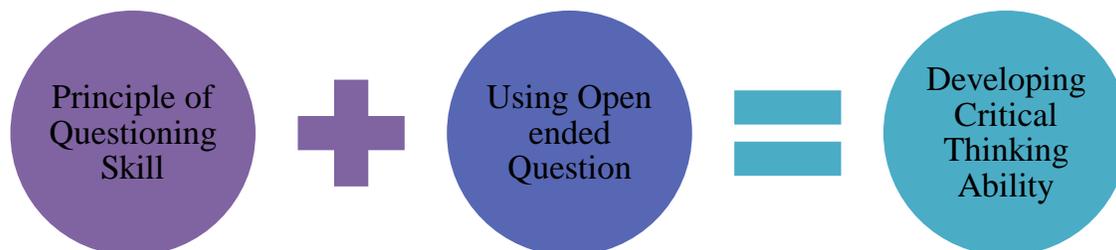


Figure 1. Teacher's Asking Skill Profile for Developing Critical Thinking Ability

To facilitate research and comply with the observation guide, children were divided into age groups, namely Kindergarten, Elementary I and II, Elementary III, IV, V and VI. The grouping by age and grades assisted mentors to understand the characteristics of children and to design and implement learning activities. It was observed that a mentor accompanied all children in kindergarten-age group. This is in line with the results of an interview (CW1) with one of the mentors, namely EF, who said:

"Children are divided according to age groups so that learning can be maximized because mentors are required to be able to memorize and understand the characteristics of children according to their age. It also enables adjusting learning activities according to the characteristics of each child "

This was also stated by another mentor, namely SPE, in the interview note (CW2), who said that grouping child by age and grades helped mentors to plan and customize the study material so that learning objectives are achieved. The questioning skills used by the mentor in early childhood learning at the RAS also were customized according to the characteristics of each child. For instance, when a child accidentally spills water and does not want to be responsible for cleaning it again, in a field note 1 (CL1) the mentor shares the following conversation:

- Mentor : "Sis, what's good if the water has been spilled?"
 Student : "Just let it go, ma'am"
 Mentor : "If there is water on the floor, then friends pass by, what do you do?"
 Student : "Can fall, ma'am"
 Mentor : "If friends fall, what will happen later, sis?"
 Student : "Bleeding of the head or it could be lumpy too"
 Mentor : "If you fall, are you happy?"
 Student : "No, no, I must be sick"
 Mentor : "So, how good is it?"
 Student : "Yes, Ica (student herself) will help wipe the floor, ma'am "(ran to find a mop and then dried the spilled water)
 Mentor : "Ok, thank you, sis, Do you know what responsibility is?"
 Student : "I don't know, ma'am"
 Mentor : "Who spilled the water earlier?"
 Student : "Ica, ma'am"
 Mentor : "Then, who cleans the water again?"
 Student : "Ica, ma'am"
 Mentor : "That means you are responsible"

From this conversation, it can be seen that to explain the meaning of responsibility, the mentor adapts it to the characteristics of a five-year-old child, who is still learning from something concrete. The child eventually understands the meaning of responsibility through a real-life example and is guided by the mentor through questions.

Principle of Questioning Skills (There is No Solution, Information, and Instruction)

Another finding related to Questioning skills in RAS was the application of the principle known as "There is no information, solution, and instruction".

i. There is no Information

The principle of 'There is no information' means that the mentor is not allowed to provide information directly to the child. The mentor must have a discussion or a dialogue with the child so that the child's understanding can be explored, and the child learns to express his thoughts through answers given. For example, during a creativity activity (CL2) a child was asked how to draw the alphabet 'A,' like the cut out of alphabet 'A' provided by the mentor made of origami paper. The mentor did not provide any information how to make it, but the mentor guided the child with the question "Do you have any ideas? How can we make the alphabet 'A' according to what your mother has?" The children answered differently such as: "Will try it" or "Will draw the pattern" or others suggested to imitate it from others. The mentor appreciated each child's answer and discussed the possibility of each idea that the child expressed. Each idea was tried until the children gave up, accepting that they could not draw the alphabet 'A' directly nor could make the letter 'A' pattern. In the end, the children were asked to trace the cutouts of alphabet 'A' that the mentor had exemplified and then to cut them.

ii. There is no solution

This principle means that the mentor does not provide instant solution but facilitates children to solve problems they face through questioning skills; for instance, when two children fight over a toy problem, mentors would not directly say intervene or ask them to share the toy or apologize because fighting is a bad act. It was observed that the mentor held discussions with the two children and first determine the cause of their fight. The first child with the initial 'L' said that they fought because the child 'R' took the toy. Meanwhile, R's son said that they fought because L didn't want to lend his toy, so he took it. The mentor then clarified the information from the two of them until L and R said that what their friends said was true. The mentor then discussed with L starting from simple questions like what L felt when R grabbed his toy, then continued to question about the reasons for not wanting to lend a toy until finally L was guided to decide what attitude he should show if his friend borrowed a toy. L replied that he felt angry and annoyed when R took his toy, he didn't want to lend his toy because R borrowed it by force and he wanted R to borrow it well, then L decided that if R borrowed it in a good way, then he would lend it. Likewise, as with R, the mentor guided him too with questions until R answered that he would borrow toys as well. He also did not like it if his friend borrowed his toys by force if he borrowed in a good way, but his friend did not lend, he would be patient and wait for his friend to finish playing. After discussion with each, the mentor asked the two of them, "So, how good is it now, kid? There is only one toy, while there are two who want to play? " L and R finally decided to play together.

iii. There is no instruction

According to this principle, the mentor does not give direct instructions but provokes the child to take an initiative and do the actions that the mentor wants. For example, when the mentor sees the garbage scattered and some books out of place, the mentor does not directly instruct the child to pick it up and then throw it in the trash and tidy up the books. However, the mentor asked the children "kids, are we comfortable with our room today?" some children answered that they felt comfortable, but there were also children who said they were uncomfortable. The mentor then continued the question "So, what good are we doing now, whom today is helping

mom to tidy up the books?" Several children pointed their hands, and the mentor mentioned the names of the children who were going to tidy up the books. Likewise, with trash, some children pointed their hands to get rid of the trash. The findings of the above three principals were supported by the results of interviews with the mentor coordinator (CW 3). The CW3 stated that the principles of "no information, no solution, no instruction" were the typical rule of thumb for mentors who were in accompanying children. These principles aimed to make every moment and every information meaningful to children because children were allowed to find ideas, solve problems, and decide the attitude they wanted to take without coercion from mentors or any other people. The main objective of these principles was to help the child become a problem solver and not be dependent on other people.

Using Open ended Questions

The open-ended questions were found to be used as a part of the questioning skills profile of teachers responsible to develop critical thinking skills in children during early childhood period at RAS. This technique allowed children to respond with many possible answers to the same question. For instance, when children found a kitten separated from its mother when it was raining, a child holds it and another child surrounds the cat, then the mentor asks, "what does the cat need?" the children answered that the cat needed to eat, drink, blankets, a house, some even answered that the kitten needed its mother. After discussion, the children finally decided that they would help find the mother cat after returning from RAS, while the cat would be kept in RAS for a while. The mentor then asked, "how do we raise this cat in RAS?" The children answered that they would provide food with the food they brought from home, provide a box for their place to live, look for used cloth so that the cat would not get cold, and various other answers.

Another example is also shown when the mentor will explain about respecting differences, the mentor asks the children to collect various types of leaves that exist in the RAS environment, after the leaves are collected the children are asked to recognize the shape of the leaf, then the mentor asks, "what is the shape of the leaf?" "what are you holding now?", then the children said that the leaves they have are long, different from those of their friends, and some say that the leaves are shaped like hands. Then, the mentor asked again, "what if the shape of all the leaves is the same?". The children said with various answers, some said I would feel confused because I couldn't recognize leaves that could be the same as consumption, another said that he would feel bored because the leaf crowns I made from leaves would not look beautiful, and others also said I wouldn't be able to tell the difference between a guava tree, a manga tree, and another tree. The answers to questions about leaves that have been described by the children are used as conclusions by the mentor that differences are not a bad thing. Then the children explained again that differences make me happy, will not hate, and accept other circumstances. The answers given by the children were returned with questions by the mentor, "then, what if we have different friends, for example, different skin color, hair, height?", then the answers given by the children that they will still want to be friends, will not bully, I will make him a good friend, and I will appreciate it.

Other findings were also obtained when the mentor and the children discussed how to love living beings. A week before the topic discussion began, the mentor guided the children to choose a plant to be planted in a flowerpot. The mentor asked the children, "What about the condition of the plants that you have planted?" The answers were varied, some said that the plants had dried up, withered, lacked nutrients, and so on. Then, the mentor asked how the children felt when they found out that the plants had dried up, withered, or lacked nutrients. The children answered that they were sad and felt sorry to see the plants being neglected. Then the mentor questioned: "How should the plants survive?". The answers obtained again varied such as: to water the plants every afternoon, provide fertilizers, place them in a place that was exposed to sufficient sunlight, and weed the grass that had begun to grow around the planted flowers. These answers that came from open-ended questions enabled children to get skilled in thinking. This not only helped them to prepare hypotheses, but also helped them prove the truth and other illustrations that were related to various factors such as vision, mission, and goals of the

RAS Institute. Open-ended questions really reached out to get various and even unexpected answers from children. Open-ended questions thus really probed into children’s experience.

The findings about the questioning skill model described above were supported by findings collected through the observation sheets on the performance of children's critical thinking skills. These observations were also based on open ended and verbal questions given by the mentor on several topics. These questions were related to scientific topics such as development of children's character or concern for others like humans, animals, and plants. The results of the observation are described in the following [Figure 2](#).



Figure 2. Results of Observing Children's Critical Thinking Ability Performance Answering Mentor's Oral Questions.

The diagram above illustrates the acquisition of observations of children's critical thinking skills that developed when being taught by using a teacher's questioning skills model. These observations have a specificity. All aspects that become indicators of children's critical thinking skills look well, both from the aspect of providing examples of explanations, drawing conclusions, to developing strategies and tactics. The percentage of all aspects as shown in the figure ([Figure 2](#)) were found to be more than 50% of children, found to have met the critical thinking skills aspect during the learning process by the mentor.

Discussion

The main objective of this research study was to understand the questioning skills profile of mentors at Rumah Anak Sholeh (RAS) institute. It also aimed to know about the teaching and the learning process carried out by mentors as facilitators and companions of children. Being a companion is one basic teaching skill that every teacher must possess. Besides, the teacher must acquire a few other pedagogical competencies to teach children at early stages. The art of questioning for the sake of developing children’s critical thinking skills is one such competency. This competency helps in actualizing the potential embedded in students. The questioning skills competency is therefore a strength for every educator, to explore and ensure that students' understanding is not limited to the stage of knowledge acquisition, but also moves to the next stage, i.e., reduction or the application stage in order to solving problems themselves by applying the knowledge acquired ([Ma, 2008; Nappi, 2017](#)).

The most important finding of this study was to understand the profile or the pattern of teachers’ questioning skills at RAS. It was observed that a teacher's questioning skills dominated every mentoring activity. An interesting phenomenon observed was that the questioning skills of the mentors were used not only for obtaining information, but for increasing the occurrence of interactions between teachers and students, students and students, and students and learning media such as books, etc. This kind of intervention played an important

role in the development of critical thinking skills in students. The questions raised by RAS mentors in each learning activity were thus not solely explored students' knowledge encouraged them to use their critical and analytical thinking power to participate in the learning activity.

Another uniqueness of the finding of this study lay in understanding the pattern or profile of questioning skills of using open-ended questions. The mentors asked open-ended questions from children so that their answers would lead to their understanding at the application level. They could utilize their knowledge to answer the questions and even elaborate answers if probed further or any troubleshooting encountered. The use of open-ended questions was also done to change their habit patterns, which they were subjected to in society. Generally, questioning was not encouraged in the society and children were criticized for questioning habits. In such inhibitions, their critical thinking skills remain lost and hidden. If a student is allowed the freedom of asking questions and develop his or her thinking skills, it gets transmitted to various lines of life and does not remain confined to learning in a classroom.

The opportunity to ask questions given by the teacher was widely accepted by students as it was reflected in both observation results and interview findings. The asking questions acted as the reinforcement pattern to foster students' habit asking questions. It gave them the courage to dig up various information they wanted to know by asking questions. Such a reinforcement not only helped students get the required information, but also expanded their critical power in solving problems found in everyday life. This development of critical thinking skills in students become possible only through the questioning skills of teachers who asked good and relevant probe questions. Their question formed a sequence that resulted in the development of students' cognition and language acquisition. The students earned not only the knowledge but also developed charity of thinking and application of the knowledge (Lewis, 2007; Ma, 2008; Nappi, 2017; Shanmugavelu et al., 2020; Yahya et al., 2013). This shows that a teacher's questioning skills is not just a requirement for learning and teaching or a pedagogical tool, but it also develops students' critical thinking skills, increases their involvement in learning, and provides them opportunities to acquire more information and language acquisition.

Another finding of this study was to become familiar with the unique pattern of teachers' questioning skills in developing critical thinking skills at RAS, not commonly found in formal schools. This pattern has three dimensions: 'No solution, No information, and No instruction'. These three slogans defined the mentoring pattern carried out by each mentor at RAS, every time when there was a small problem. The purpose of using this pattern was to develop critical thinking and application power of students. In this pattern, the mentor would not provide any command, direction, solution, or information leading to the answer, but guide the students and stimulate their thinking skills. Once the students' critical thinking was stimulated, they started speculating about probable answers until they reached the exact answer. The quantitative findings from the observation sheet on the performance of children's thinking skills as well as by making use of the open-ended question model and utilizing the special characteristics that existed in the RAS Institute, it was found that all aspects of critical thinking skills in children at the RAS Institute were seen frequently and seen in more than 50% children. This finding becomes an attraction that open questions can develop children's critical thinking skills.

During the study in all observations and interviews, the researchers did not come across any direct instructions given by a mentor. Each learning situation was that of mentoring the children and pushing them into the learning needed. The mentors asked questions such as 'how good it would be if conditions like this happened' or 'can anyone help finding the answer'... etc. These questions formed teachers' pedagogical profile and method of helping students in problem-solving. It was believed that students got used to patterns of questions and open-mindedness; eventually they would solve problems in no time when encountered in their later life, as they had developed their critical thinking skills and learnt to apply their knowledge in their early childhood. The new questioning patterns had another distinct advantage to the RAS, as it developed into a character education institution, as it fostered students' critical thinking skills. In many cases, typical questioning skills proved a breakthrough in character development and initiation of good practices as it assimilated moral and ethical aspects.

Recommendations, Implication, and Limitations

To conclude, it can be stressed upon that this study revealed the peculiarities of the questioning skills pattern of the RAS mentors, evidence of their strength and ability in developing students' critical thinking skills. Through their question skills pattern, teachers taught not only how to obtain maximum information but also how to solve simple problems that are encountered during the learning process. Students learn to extract solutions and answers from the questions given by the mentor, while assisting and guiding them. The researchers hope that RAS should be recognized as an institution for mentoring and nurturing children's character. It is also hoped that the results of this research would help educators and administrators to realize the importance of implementing teacher's questioning skills. The teachers' questioning skills could be categorized as an open learning model and studied more comprehensively. Efforts should be made to develop schools not only as places to develop students' cognition and psycho-motor skills but also as places to develop emotional intelligence and critical thinking skills in children.

Furthermore, this study would prove a useful reference to institutions engaged in early childhood education, who should iterate providing training to their teachers in questioning skills. This study can also make an impact on the role of parents to show readiness in developing children's critical skills while at home. The teacher's questioning skills and open-ended learning model for developing children's critical thinking skills and application of knowledge can be further developed into wider research, to explore its replicability as well as effectiveness in improving early childhood critical thinking skills in other schools. Last, but not least, this research was limited to a particular region and to a single institution. Future research may be carried out in the context of other geographical locations.

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