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Parent Understanding to Support Children Science Activity at Home

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ABSTRACT
Science is one of the crucial factors in maturing various aspects of a child's development. However, some parents think science is problematic and unsuitable for early childhood. It has a limited report on whether parents already have a sufficient understanding of science education for early childhood. This research aims to determine parents' understanding of science learning for early childhood. The participants were 87 parents. The design of his research is quantitative with online questionnaire instruments. The data were analyzed using the Rasch Model with Winstep Rasch Measurement. The quality of the questions can be seen from the reliability value (0.94), separation (5.81), and outfit and infit values according to standards. Among the 16 questions, only three were identified as biased for teacher and housewife groupings. It means that few questions are in favor of the teacher. Respondents' performance was good because of the ability to be spread across all the intervals. It was based on the wright map. Another finding is that the average logit person is +1.26, which means a sufficient ability for participants related to early childhood science. All participants can answer questions regarding the criteria of tools and materials and appropriate places for science activities. While the participants least understand the scope of science for children. The conclusion is that parents already have a proper understanding of science learning for early childhood. Parents are theoretically able to support the child. The future study needs to improve the parents' ability to plan and implement children's science activities at home.

Keywords: *Parents support, Science activity at home, Science education*

1. INTRODUCTION

Activity in science learning is crucial in developing young children's thinking [1]. In addition, [2] stated that children need to do some science activities to understand some phenomena in the environment. Children can logically answer some questions and solve problems when used to science learning [3]. In addition, Starting science learning in early childhood can provide an opportunity for children to use their excellent learning curiosity to conduct challenging science investigations [4]. Therefore, science can help young children in developing their mature thinking.

Based on an educational point of view, there are several other reasons why we should teach science to children [3]. The two main reasons are that children can learn from the actual phenomenon from the natural condition, and science learning drives the children's reasoning skills. Moreover, there are additional facts of the advantages on science learning 1) Children, in general, are interested in observation and thinking about nature; 2) Develop a child's positive attitude towards science; 3) provide an initial understanding of scientific concepts before formally studying; 4) The use of scientific language at an early age influences the development of scientific concepts; 5) Children can understand scientific concepts and think scientifically.; and 6) Science is an efficient means of developing scientific thought. Thus, it is essential to learn science for children in preschool or the first years of elementary school.

On the other hand, parents of young children have a different point of view regarding science learning. They believe that science is not suitable for young children. The parents thought that science learning is complicated and needs many equipment and experiments to perform learning science. We surveyed the 36 parents with young children as the preliminary data. The survey described that 11.1% of respondents believe science learning must be conducted in the laboratory. At the same time, 5.5% of respondents agreed that science learning is complex for young children. This preleminary survey described that the

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parents still have some obstacles in learning science for their kids.

Whereas, science activities can be conducted simply without being in the laboratory, such as gardening. Based on the study results [5], gardening activities can improve the science process skills of kindergarten children. Gardening contributes to the physical-motor, language, cognitive, socio-emotional, and moral-religious development of children in an integrated manner. In addition, direct contact with plants makes children more interested and want to know more [5].

Also, we surveyed respondents to know how children's curiosity about the phenomenon of science. The questionnaire was about how often the children asked science questions. Among 143 respondents, 25.17% stated that their child frequently asked more than 6 times. While 42.66% sometimes asked (4-6 times), 17.48% said infrequent (1-3 times), and 14.69% said never been asked by the child about science. These facts described children's curiosity about science phenomena as not good enough. Some even never ask. The description confirms that the child's understanding is still lacking about environmental relations and science knowledge [6]. This problem should be a concern about increasing a child's science interest. Both parties should attempt this improvement effort, namely parents as escorts and children as objects.

To support the efforts, assistance from surrounding people of the child is crucial. Young children's opportunity to learn science depends on how to teach (pedagogy of practice) and culture (cultural value and tradition) [7]. Constructivist teaching, such as the practice of colour combination, In aligning science will undoubtedly give very different results rather than just explanations about the combination between red and yellow results green. Likewise, cultural factors contribute to a significant issue. When parents still think that the highest target of academic achievement is to score the highest in the exam. Also, the parent thought that the child's ability to climb and recognize trees more closely would not be helpful. This way of thinking or culture will affect the motivation and restriction of the child's learning space. Parents with opposite cultural values can provide more excellent opportunities for learning science in young children.

Science in young children can develop when educational program interventions are developed to understand scientific thinking patterns [8]. Learning science by proving a phenomenon through practice is a way of conveying the concept of science effectively. Adults can enhance children's exploration of science tools and materials and their knowledge of them [9]. One of them is with a Cooperative learning-based science education program with family involvement [10]. The results showed that the program significantly affected the treatment group. The program supports the scientific process skills of children. Therefore, implementing educational programs is essential to enhance children's voluntary exploration of science can increase their interest and knowledge.

To establish a science education program, parents need to understand it. Parents should understand how science is learned, guiding the construction of scientific concepts [11], and strategies to help children be confident and focused [12]. However, as mentioned above, the descriptive data of parent's readiness in science learning for early children were rarely reported.

Therefore, it is essential to get information on parents' understanding of science for young children. Parental understanding is essential for learning science support. By having enough understanding, parents can become the right facilitator who can help young children learn science and benefit from it, especially during the Covid 19 pandemic. The bonding of parents and children can be strengthened by doing science activities. This study describes the parent's understanding of science activities for early childhood at home.

2. MATERIAL AND METHODS

2.1. Research Design

This study is a descriptive study with survey methods to get data on parental understanding of learning science for young children. A Survey can provide a quantitative description of a population's trends, attitudes, or opinions by studying a sample of that population [13]. An overview of parents' understanding of learning science is suitable for pandemic times to determine the readiness of parental support during pandemic times.

2.2. Participants

The number of participants was 87 among 123 participants of science education webinars. Participants are parents who are domiciled spread in Java and Sumatra Island, Indonesia. Parents will have two job groupings, namely Housewife and Teacher. Data understanding from parents using an online form that contain questions and biodata needed by researchers.

2.3. Data collection and analysis

The data were curated using a questionnaire consisting of 16 questions. Questionnaires are multiple-choice questions with one correct answer. This question aims to determine parents' understanding of science for young children. The problem has been tested for validity and reliability.

The data were obtained in the form of an online form filled in by participants. Data were retrieved before participants enter the webinar. Next, the data is analyzed using Racsh Model Analysis with Winsteps 4.5.2 software. Rasch modeling can simultaneously test respondents (person) and problem items (items). In quantitative research, the calculation of error standards and calibration requirements (measurement scale, respondent (person), and problem items) can be met. [14]. Table 1 lists questions and question codes used in the analysis.

Table 1. List of questions with the question codes in the analysis

Question	Question code
Definition of science for young children	Q1
The reasons why young children need to learn science	Q2
The science learning process for young children	Q3
Aspects that can be developed through science learning	Q4
Scope of science learning for young children	Q5
The role of parents in science learning for young children	Q6
The way to answer questions about science posed by children	Q7
Method to attract children to do science at home	Q8
Time to do science activities at home	Q9
Criteria for good science activities to do at home	Q10
Criteria for good science activities to do at home	Q11
Preparations to be done when doing science activities at home	Q12
Ways your child can make hypotheses	Q13
How to explain the science material of the activities we have done	Q14
How to check the child's understanding of science activities carried out	Q15
Science process skills that must be observed at home	Q16

3. RESULTS AND ANALYSIS

The collected data were derived from the answers of 87 respondents to 16 questions given via online form. The answers are processed first with excel, then analyzed with the Rasch model. Here are the results of the analysis that has been done.

3.1. Item and Person Measurement

The quality of the problem items used in this study can be seen from the fit item. The analysis result is shown in Table 2.

Table 2. Statistical suitability of items on instruments with rasch analysis. Mean Suaqre (MNSQ); Z-Standsrd (ZSTD)

No	Item/Question Code	Logit	Standard Error Measurement	Outfit MNSQ	Outfit ZSTD	Point Measurement Correlation
1	Q1	0.53	0.24	0.86	-0.97	0.43
2	Q2	-0.11	0.27	1.22	1.00	0.19
3	Q3	-0.26	0.28	0.79	-0.86	0.39
4	Q4	-0.60	0.31	1.01	0.14	0.28
5	Q5	2.95	0.29	1.31	1.15	0.09
6	Q6	0.58	0.24	0.82	-1.38	0.49
7	Q7	0.47	0.24	1.12	0.82	0.22
8	Q8	-0.11	0.27	0.92	-0.29	0.30

No	Item/Question Code	Logit	Standard Error Measurement	Outfit MNSQ	Outfit ZSTD	Point Measurement Correlation
9	Q9	1.82	0.24	0.97	-0.21	0.40
10	Q10	-1.45	0.41	1.22	0.59	0.11
11	Q11	1.02	0.23	1.03	0.31	0.31
12	Q12	-2.39	0.60	0.64	-0.29	0.22
13	Q13	-2.82	0.72	0.76	0.02	0.16
14	Q14	-1.83	0.47	1.00	0.20	0.14
15	Q15	2.17	0.25	0.84	-1.05	0.44
16	Q16	0.03	0.26	0.97	-0.10	0.35

Based on Table 2, all problems function normally to measure respondents' understanding of learning science for young children. The used benchmark is the value of outfit MNSQ (0.5<MNSQ<1.5), Outfit ZSTD (-2.0<ZSTD<2.0), and Pt. Measure Corr (0.4<Pt. Mea Corr<0.85). Of the three criteria, some of the values of Pt. Measurement Corr are not appropriate. However, according to [15], This can still be tolerated because of two other criteria, Outfit MNSQ and Outfit ZSTD, are already qualified.

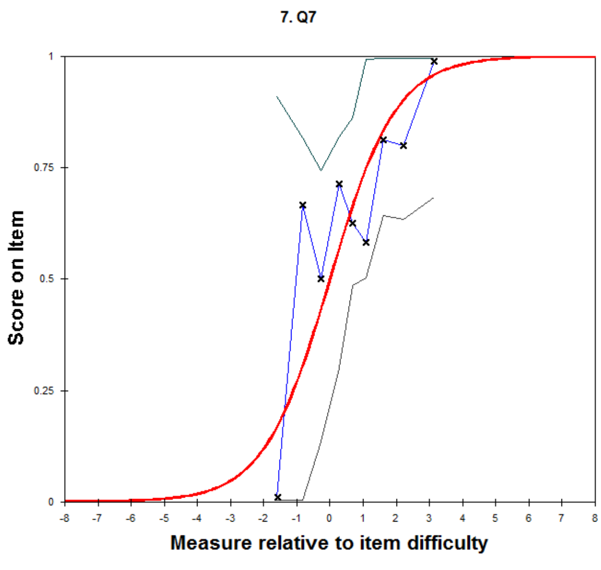

Figure 1 Graphic expected score of Q7. Redline shows the expected model rasch line. While The green line is the tolerance limit, the upper green line is the infit data trust space limit, and the bottom green line is the data outfit trust space limit. Mark (x) indicates the number of data groupings.

Figure 1 indicates if (x) above the red line means the question is answered correctly, and vice versa. The blue line is research data. The expectation is that the blue line follows the pattern of the red line. The blue line in Figure 1 does not follow the pattern, but it is still quite good because it is still within the tolerance limit within the green line zone. Therefore, the problem can still be used.

The entire item on the instrument must be measured the validity of the contract. If the result value is good, then the item construct is also good. The value of construct validity seen from Raw Variance was 23.89% which means that the construct validity range is quite good. (Raw Variance>20%). Unexplained variance in contrast is smaller than 3, so there is no mixture with other elements beyond the instrument's utilization objectives.

3.2. Bias of the Data

Measurement of respondents' understanding of learning science for young children must be valid. In addition to maintaining the quality of the problem as explained earlier, the instrument must be free from bias [15]. The bias in question meant that the instrument did not benefit a particular group of respondents. It is showed in Table 3.

Table 3. Bias Analysis of the questions in the questionnaire

Question Code	Probability	Question Code	Probability
Q1	0.79	Q9	0.01
Q2	0.65	Q10	0.25
Q3	0.45	Q11	0.73
Q4	1.00	Q12	0.61
Q5	1.00	Q13	0.68
Q6	0.44	Q14	0.30

Question Code	Probability	Question Code	Probability
Q7	0.01	Q15	0.03
Q8	0.65	Q16	0.86

In this study, two groups of respondents were named Housewife (H) and Teacher (T). Based on Table 3, there are three biased questions, namely Q7, Q9, and Q15. This bias is because the probability was less than 5%. Based on figure 2, question Q15 contains bias which means that the problem is easier to do by group T than H. While Q7 is inversely proportional, group H is easier to do than T. Q15 is a question of how to evaluate a child's understanding of science activities, and Q7 about how parents answer children's questions about science.

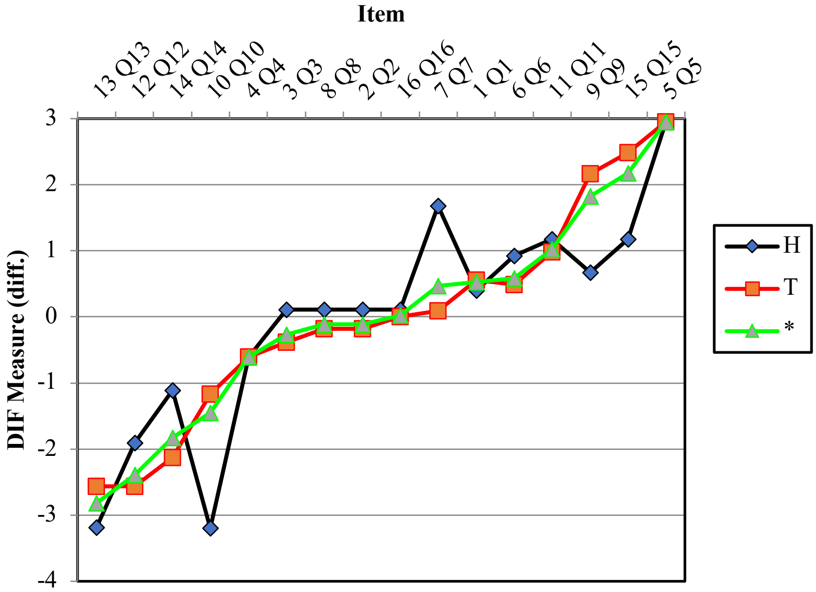

Figure 2 Analysis result of personal Differential Item Functioning (DIF). Houswife (H); Teacher (T); * expected model line.

Based on figure 2, the Q7 question is answered more correctly by the housewife group, while the teacher group is below the green line. The value distance of these two groups is quite far adrift. This indicates that Q7 is more profitable for the Housewife group. It is interesting to know why Housewife has a better understanding of answering children's science questions than teachers.

3.3. Wright Map

Figure 3 shows the distribution of questions (items) in the left column and the respondent (person) in the right column. The most difficult problem to do is Q5 and the easiest is Q13. The above the Q position, the more it has a higher difficulty level than the Q below it. The problem item reaches all the intervals in the item map. This means that the difficulty of the problem item in the test varies from easy to difficult.

In the side of respondents, the more above, the respondents are respondents who have more correct answers. 02T and 51T respondents were the respondents with the most correct answers, while the 62T had the fewest correct answers. The performance of the respondents was also good because of its ability to be spread across all intervals. Ability of Housewife respondent. Although Housewife with the best ability, which is 36H, still has not answered correctly about Q5, but the spread of Housewife respondents is at all intervals (2xSD).

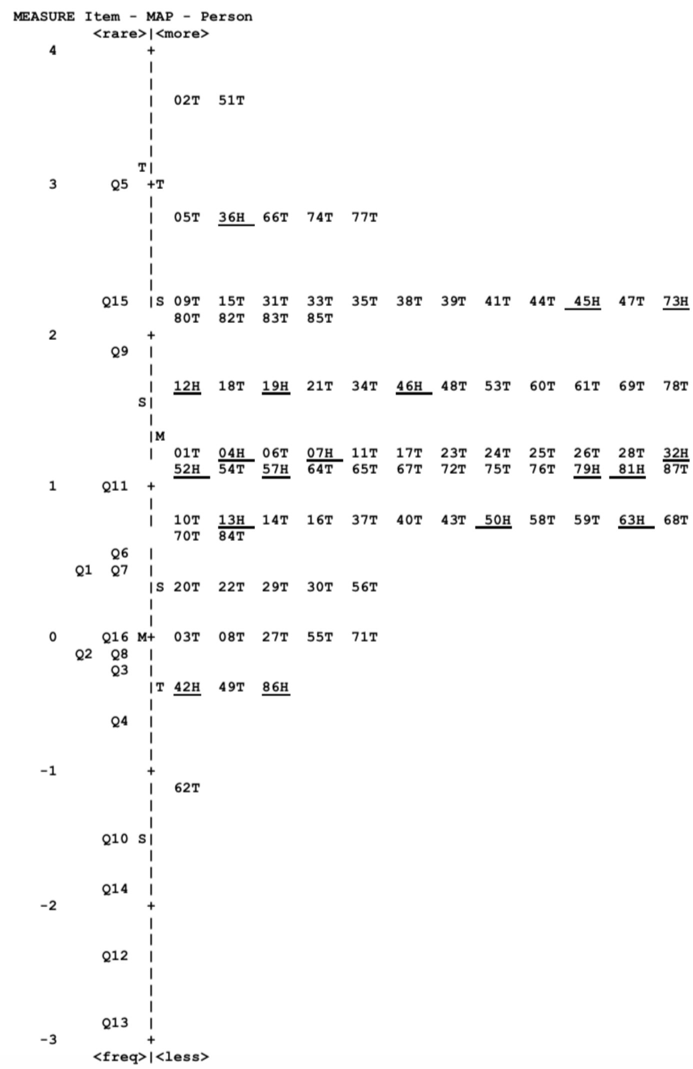

Figure 3 Map distribution of the difficulty of the problem and the ability of respondents to answer the question depicted in the Wright Map (description: 02T means second respondent as teacher and 04H means fourth respondent as Housewife). Underlinned values are the Housewife's scores.

3.4. Respondent Ability

Ability analysis will help determine the level of understanding of respondents. In table 5, the average logit person was 1.26. The value of 1.26 was above the item's average value (0.00 logit). This shows that the average respondent's knowledge is above the average difficulty level of the problem. Furthermore, the highest logit value is 3.61 and the lowest value is -1.12. Only 4 out of 87 respondents have a logit value of less than 0.00, meaning that only most respondents have a good understanding of learning science for young children.

Furthermore, it can be seen the order of respondent abilities in the person column (far right), most logit data is individualized can be used to explain various information related to the ability of the person because the resulting scale has the same distance [15]. For instance, respondents are 02T (3.62 logit), 73H (2.07 logit), and 64T (1.14 logit). Respondent 02T has a capability of approximately 1.5 times 73H. While the 64T has the ability of one-third of the 02T. The same logit value of 2.69 in respondents 05T, 36H, 66T, 74T, and 77T indicates the same ability that correctly answers the same number of questions (Table 4).

Table 4. Snippet of Level of ability describing respondent's ability and order

Person STATISTICS: MEASURE ORDER

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTMEASUR-AL CORR.	PTMEASUR-AL EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	Person
2	15	16	3.61	1.11	1.11	.39	.44	-.03	.30	.30	93.8	93.8	02T
51	15	16	3.61	1.11	.62	-.30	.17	-.48	.49	.30	93.8	93.8	51T
5	14	16	2.69	.85	.85	-.14	.49	.02	.49	.39	93.8	88.3	05T
36	14	16	2.69	.85	.93	.04	.74	.27	.42	.39	93.8	88.3	36H
66	14	16	2.69	.85	.98	.14	1.06	.51	.36	.39	93.8	88.3	66T
74	14	16	2.69	.85	.99	.16	1.19	.60	.35	.39	93.8	88.3	74T
77	14	16	2.69	.85	.54	-.90	.23	-.35	.63	.39	93.8	88.3	77T
9	13	16	2.07	.74	1.05	.25	.70	.09	.46	.45	81.3	84.2	09T
15	13	16	2.07	.74	1.25	.69	1.42	.71	.30	.45	81.3	84.2	15T
31	13	16	2.07	.74	.65	-.79	.39	-.32	.64	.45	93.8	84.2	31T
33	13	16	2.07	.74	.46	-1.47	.26	-.55	.72	.45	93.8	84.2	33T
35	13	16	2.07	.74	1.33	.85	.83	.24	.35	.45	68.8	84.2	35T
38	13	16	2.07	.74	1.12	.41	.95	.34	.40	.45	81.3	84.2	38T
39	13	16	2.07	.74	1.41	1.00	3.24	1.63	.09	.45	81.3	84.2	39T
41	13	16	2.07	.74	.83	-.29	.78	.18	.52	.45	93.8	84.2	41T
44	13	16	2.07	.74	.46	-1.47	.26	-.55	.72	.45	93.8	84.2	44T
45	13	16	2.07	.74	1.05	.26	.68	.08	.46	.45	81.3	84.2	45H
47	13	16	2.07	.74	.46	-1.47	.26	-.55	.72	.45	93.8	84.2	47T
73	13	16	2.07	.74	1.13	.43	.80	.20	.41	.45	81.3	84.2	73H
80	13	16	2.07	.74	.46	-1.47	.26	-.55	.72	.45	93.8	84.2	80T
82	13	16	2.07	.74	.65	-.79	.39	-.32	.64	.45	93.8	84.2	82T
83	13	16	2.07	.74	.83	-.29	.78	.18	.52	.45	93.8	84.2	83T
85	13	16	2.07	.74	.74	-.54	.49	-.16	.59	.45	93.8	84.2	85T
12	12	16	1.57	.68	1.32	.92	1.09	.40	.35	.49	68.8	81.4	12H
18	12	16	1.57	.68	1.17	.56	2.37	1.42	.32	.49	81.3	81.4	18T
19	12	16	1.57	.68	1.49	1.30	1.42	.71	.24	.49	68.8	81.4	19H
21	12	16	1.57	.68	1.19	.62	.99	.28	.41	.49	81.3	81.4	21T
34	12	16	1.57	.68	.58	-1.24	.41	-.58	.70	.49	93.8	81.4	34T
46	12	16	1.57	.68	.89	-.20	.75	-.02	.55	.49	81.3	81.4	46H
48	12	16	1.57	.68	1.38	1.04	1.09	.40	.33	.49	68.8	81.4	48T
53	12	16	1.57	.68	.49	-1.60	.33	-.74	.74	.49	93.8	81.4	53T
60	12	16	1.57	.68	1.54	1.39	1.21	.52	.26	.49	68.8	81.4	60T
61	12	16	1.57	.68	1.26	.77	1.99	1.17	.29	.49	81.3	81.4	61T
69	12	16	1.57	.68	1.42	1.15	1.08	.39	.32	.49	68.8	81.4	69T
78	12	16	1.57	.68	1.46	1.22	1.13	.44	.30	.49	68.8	81.4	78T
1	11	16	1.14	.64	1.20	.70	1.60	.95	.36	.51	75.0	78.3	01T
4	11	16	1.14	.64	1.50	1.47	2.95	2.07	.18	.51	62.5	78.3	04H
6	11	16	1.14	.64	.55	-1.60	.40	-.87	.75	.51	87.5	78.3	06T
7	11	16	1.14	.64	1.37	1.16	1.21	.51	.34	.51	62.5	78.3	07H
11	11	16	1.14	.64	.77	-.70	.60	-.43	.64	.51	87.5	78.3	11T
17	11	16	1.14	.64	1.11	.44	.92	.12	.47	.51	75.0	78.3	17T
23	11	16	1.14	.64	.75	-.78	.57	-.50	.65	.51	87.5	78.3	23T
24	11	16	1.14	.64	.93	-.14	.70	-.23	.57	.51	75.0	78.3	24T
25	11	16	1.14	.64	.93	-.12	.86	.03	.54	.51	87.5	78.3	25T
26	11	16	1.14	.64	1.74	2.03	2.04	1.37	.11	.51	62.5	78.3	26T
28	11	16	1.14	.64	.67	-1.09	.53	-.57	.69	.51	87.5	78.3	28T
32	11	16	1.14	.64	1.21	.74	1.86	1.21	.35	.51	75.0	78.3	32H
52	11	16	1.14	.64	1.36	1.13	1.04	.30	.37	.51	62.5	78.3	52H
54	11	16	1.14	.64	1.10	.41	3.91	2.67	.31	.51	87.5	78.3	54T
57	11	16	1.14	.64	1.03	.21	.78	-.10	.52	.51	75.0	78.3	57H
64	11	16	1.14	.64	1.18	.65	1.05	.31	.43	.51	75.0	78.3	64T
65	11	16	1.14	.64	.90	-.21	.67	-.29	.58	.51	75.0	78.3	65T
67	11	16	1.14	.64	.74	-.82	.56	-.51	.66	.51	87.5	78.3	67T
72	11	16	1.14	.64	.65	-1.18	.50	-.64	.70	.51	87.5	78.3	72T
75	11	16	1.14	.64	1.48	1.44	2.02	1.35	.24	.51	62.5	78.3	75T
76	11	16	1.14	.64	.67	-1.08	.49	-.67	.69	.51	87.5	78.3	76T
79	11	16	1.14	.64	1.09	.38	.88	.07	.49	.51	75.0	78.3	79H
81	11	16	1.14	.64	1.18	.64	.94	.15	.45	.51	75.0	78.3	81H
87	11	16	1.14	.64	1.26	.86	1.10	.38	.40	.51	75.0	78.3	87T
10	10	16	.74	.62	.90	-.30	.68	-.41	.61	.53	75.0	75.3	10T
13	10	16	.74	.62	1.24	.89	1.06	.30	.43	.53	62.5	75.3	13H
14	10	16	.74	.62	.83	-.57	.95	.12	.59	.53	87.5	75.3	14T
16	10	16	.74	.62	1.05	.26	1.14	.42	.49	.53	75.0	75.3	16T
37	10	16	.74	.62	.99	.05	.81	-.14	.55	.53	75.0	75.3	37T
40	10	16	.74	.62	.68	-1.22	.52	-.80	.71	.53	87.5	75.3	40T
43	10	16	.74	.62	.91	-.25	.70	-.36	.60	.53	75.0	75.3	43T
50	10	16	.74	.62	1.03	.21	.81	-.15	.54	.53	62.5	75.3	50H
58	10	16	.74	.62	.88	-.34	.69	-.40	.61	.53	75.0	75.3	58T
59	10	16	.74	.62	1.14	.56	.89	.01	.49	.53	62.5	75.3	59T
63	10	16	.74	.62	.90	-.30	.70	-.38	.60	.53	75.0	75.3	63H
68	10	16	.74	.62	.84	-.51	.69	-.40	.62	.53	75.0	75.3	68T
70	10	16	.74	.62	.81	-.66	.62	-.56	.65	.53	75.0	75.3	70T
84	10	16	.74	.62	.92	-.21	.71	-.35	.59	.53	75.0	75.3	84T
20	9	16	.37	.60	.68	-1.35	.52	-.96	.72	.54	87.5	73.3	20T
22	9	16	.37	.60	1.15	.64	1.23	.58	.45	.54	62.5	73.3	22T
29	9	16	.37	.60	1.04	.25	.97	.11	.52	.54	62.5	73.3	29T
30	9	16	.37	.60	1.37	1.38	1.62	1.18	.34	.54	50.0	73.3	30T
56	9	16	.37	.60	.96	-.06	.73	-.41	.59	.54	62.5	73.3	56T
3	8	16	.01	.60	1.00	.09	1.22	.59	.52	.55	75.0	72.7	03T
8	8	16	.01	.60	.77	-.92	.59	-.82	.68	.55	87.5	72.7	08T
27	8	16	.01	.60	.89	-.37	.68	-.57	.63	.55	75.0	72.7	27T
55	8	16	.01	.60	.69	-1.29	.53	-.99	.72	.55	87.5	72.7	55T
71	8	16	.01	.60	.94	-.15	1.66	1.28	.51	.55	87.5	72.7	71T
42	7	16	-.35	.61	1.00	.10	.86	-.12	.56	.55	75.0	74.2	42H
49	7	16	-.35	.61	1.83	2.58	2.50	2.26	.05	.55	50.0	74.2	49T
86	7	16	-.35	.61	.84	-.53	.71	-.47	.64	.55	75.0	74.2	86H
62	5	16	-1.12	.65	.59	-1.32	.46	-.73	.74	.53	93.8	79.6	62T
MEAN	11.1	16.0	1.26	.68	.99	.0	.97	.1			79.3	79.5	
P.SD	1.9	.0	.84	.09	.30	.9	.66	.7			11.3	4.8	

4. DISCUSSION

The study found that parents' understanding of science learning was +1.26. It means that parents have a good understanding of learning science for young children. Questions about parental roles (Table 2- Q6 of 0.58 logit) are answered correctly by most respondents and include moderate difficulty level questions. Parents still need a better understanding of their role. Parents have crucial roles [11]. One of them is to code relevant evidence of the activities carried out by children. This coding can give layered questions or lead children to give the right wrong label. These parent-child interactions form everyday scientific reasoning and facilitate the construction of children's everyday scientific theories. The research also concluded that children who interact scientifically with parents have a greater chance of learning than if alone or with peers.

Children can learn simple science concepts through activities with parents in everyday life. Parents' understanding of the reasons for learning science, the learning process, and the developed aspects, Table 2- Q2 (-0.11), Q3 (-0.26), and Q4 (-0.60), is well included in that most answer correctly and includes easy questions. Parents already understand that to achieve the goal of science learning, parental support is needed. It is supported by Sikder [17] which explains that the formation of science concepts in young children does not require extra effort from parents. Most importantly, parents understand the learning process and can provide a setting for the development of children's social situations that support them.

Based on the study of Sikder [18] about the development of science (scientific development) through a study of social interaction in daily activities in infants and toddlers. The investigation was conducted on a Bangladeshi family living in Australia and Singapore for 2 years on a small science (small science). Small science refers to simple scientific narratives in small moments in everyday activities. Small science can be the basis of the development of concrete science concept. Observations in non-native families illustrate that the family can be the initial foundation of the concept of science. This relates to Q7 (0.47 on how to answer questions) and Q8 (-0.11 about attracting interest in children's science). In these findings, it appears that parents already understand the interaction of parent-child in communicating influences success in understanding the concept of science. While attracting interest, parents need to dig back about the amount of science in daily activities.

Daily activities can also be arranged specifically to understand the concept of science [19]. Collaboration of parents and young children is the main key to developing the small science concept from basic form to mature form concept. So that the next discussed is the readiness of parents' understanding in preparing learning science for young children.

Preparation to develop science learning for young children is understanding the purpose of science, understanding children's character, then arranging simple science activities according to the child's interests by applying fun concepts [20]. Use media or supporting materials tools to make science activities more enjoyable. When parents already have a sufficient understanding of learning science for young children, then parents can organize activities or look for other guidelines to facilitate children. Play and learning science activities can be done together. Scientific Play worlds is a science learning model researched by Fleer [21] so that children can learn game-based science.

Parents can also use science kits. Irby [22] explained about Family Involvement in Science (FIS) booklet for early grade (K3) until grade 6. FIS booklet contains family letter, Science academic vocabulary, Family Science Activity, Reading Passage, and Extension. FIS booklet is proven to increase the outcome achievement of children. This activity received a positive response from parents, improved science conversations at home, and improved the child's positive attitude toward science.

It can be concluded, parents who still have difficulty in compiling programmatic activities, can take advantage of kits or science activity manuals. This is in accordance with the understanding of parents in Q10, Q12, Q13, and Q14. Doing science with children is easy, if you can't design your own program, then use a kit that is easy to implement.

Also, one interesting to discuss is the presence of biases in Q7, Q9, and Q15 (see table 5). Q9 (time of implementation of science activities) and Q15 (evaluation of children's understanding of science activities) favor teachers. This is appropriate because teachers get more theoretical provisions than housewife. On the contrary, in Q7 (how to answer the question of science), the Housewife is easier in this matter. This is because parents know the character of the child better and have more time. Children have a great opportunity to interact informally with father, mother, or both about science instructions [23]. Although parents will give more explanations to boys in this study, it is further explained that the possibility can be balanced because there are elements that inadvertently contribute to the gender gap.

Other findings suggest further improving parental understanding of understanding evaluation (Q15) and Process Science Skills (KPS) (Q16). The realm of science for early childhood includes two subjects of study [24]. First is the content of the material and second is the development or ability to be achieved. As knowledge and technology develop, these two things can be helped by using supporting learning resources and media that have been widely made.

Furthermore, young children are taught six basic skills [20]. It's called Process Science Skills (PSS). These skills are observation, communication, classification, measurement, inference, and prediction. PSS are integrated in experiments or observations that children make. These skills are further beneficial in practicing scientific skills and systematic work [25].

Although our children will not all become scientists, but children need science and technology knowledge in everyday life [26]. The child will grow into an adult to live independently. So in the future it is also necessary to have sufficient scientific understanding to make decisions about various information. Therefore, parents need to understand further knowledge and skills about learning science to better prepare for a child's life.

5. CONCLUSION

Finding about parents' understanding of science for young children of +1.26 logit illustrates that parents have a good understanding. This understanding can be used as capital for support learning science for young children. Parents have an important role in developing basic science in a child's early age. Because there is a finding about parents who do not understand on several things, it is recommended that parents get a further understanding of knowledge and skills about learning science for young children.

AUTHORS' CONTRIBUTIONS

Conceptualization, methodology, data curation, data analysis, writing original manuscript, Kistantia Elok Mumpuni; Project administration, data curation, Vera Sholeha, Endri Sintiana Murni; Data analysis, writing-review, Yasir Sidiq.

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