

CHAPTER V

CONCLUSION AND RECOMMENDATION

A. Conclusion

Research in developing and validating the Science Virtual Test in the topic of matter and heat has been done systematically. It produced 30 items that can assess 7th grade students' critical thinking on matter and heat topic which is further called 'Science Virtual Test Matter and Heat (SVT-MH)'. Based on the result and analyses, it is acquired some conclusions as follows.

1. The development of science virtual test to measure students' critical thinking on matter and heat topic consists of 5 steps: (1) content analysis of 26 elements Inch critical thinking framework and the matter and heat topic; (2) constructing the multiple choice items; (3) readability test by 3 junior high school students and 2 science teacher, validity test by 2 education expert, 2 content expert and 2 media expert; (4) conducting limited tryout by 40 students of junior high school; (5) conducting a larger test by 117 students of junior high school.
2. In the content validity by experts that analyzed using the average congruency percentage, it is produced 30 valid items that covers eight element and 21 sub-element of Inch critical thinking.
3. Based on the larger test with 117 junior high school students, it is acquired the reliability of the test where the coefficient alpha (α) is 0.642. It means that the instrument has sufficient reliability to measure students' critical thinking on matter and heat topic.
4. The items of SVT-MH is in the form of multiple choice item which has specific characteristic: (1) the information presented not only in the form of figure, article, graph but also in form of video and animation, (2) The information is related with daily activity, (3) The information of some items is in the form of interesting comic.

5. The profile of students' critical thinking in public junior high school is 73% moderate level. The element that mastered by students is implication and consequences, while the element that less mastered by students is question and issue. The topic that mastered by students is heat transfer, while the topic that less mastered by students is expansion. Most of students also respond the positive impression to the SVT-MH in all aspects (experience, technical, preference and media).

B. Recommendation

There are several recommendation for further researcher in developing science virtual test to measure students' critical thinking, they are:

1. For teacher

SVT-MH that has been developed can be used by teacher to measure students' critical thinking in matter and heat topic. Author recommends teacher to pay attention when using SVT-MH, because it needs computer and earphone support and also flash media program in the computer. Author also recommends teacher to make another type of evaluation. SVT-MH also can be a good reference to develop a new features of evaluation.

2. For other researcher

This research can be used for another research as a references in developing another instrument related with critical thinking and virtual test. Author recommends to revise several items to increase its discriminating power and distractor quality. Authors also recommends to pay attention to the technical support in order to get more valid and reliable data.

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