



A VEGETABLES-AND-FRUITS MODEL REPRESENTING THE ATOMIC STRUCTURE: AN EFFECTIVE USE OF THE MODEL WITH THE INTEGRATION OF TEAM LEARNING AMONG 10TH GRADERS

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INTRODUCTION

Chemistry is physical science that studies the composition, structure, properties and change of matter. Chemistry involves a diverse range of abstract concepts which require a certain level of student imagination especially an Atomic Structure learning.

Team Learning is popular known as cooperative learning which implicate to High Impact Practices (HIP), it's often used carelessly with too little regard to the composition of the groups, the appropriateness of the tasks they are assigned or the assessment of their work.

Therefore, physical models have been developed to help students learn chemistry more easily. Taking this idea on board, a learning unit consisting of a vegetables-and-fruits model representing the atomic structure with the incorporation of the use of team learning has been developed in this study for 10th graders in introductory chemistry.

OBJECTIVES

This study shows the effectiveness of this learning unit by (1) comparing students' conceptual understanding between before and after the use of the model as well as (2) investigating their satisfaction.

METHOD

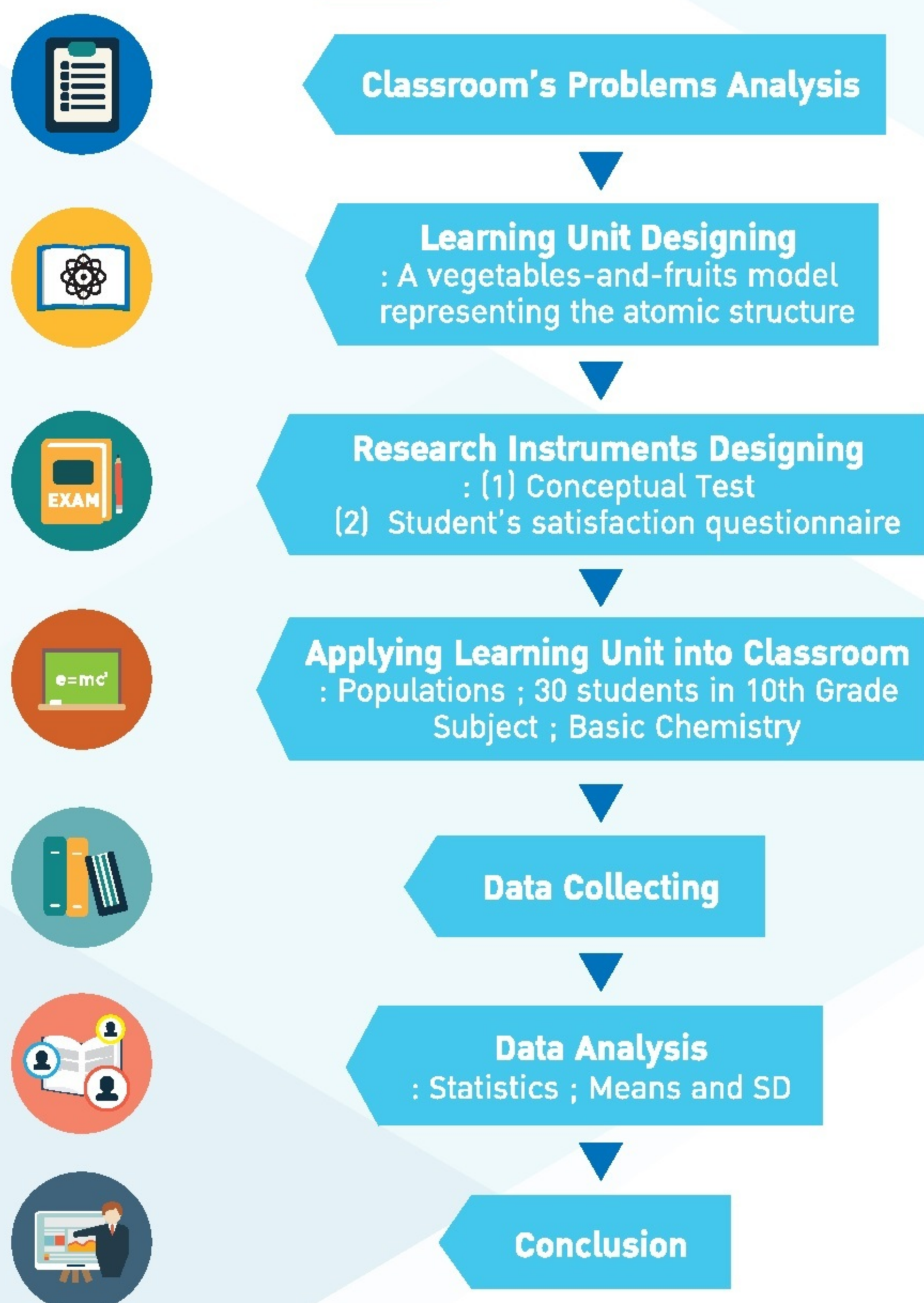


Figure 1-2 : Show Group Discussion in Classroom



Figure 3-4 : Show Team Learning in Classroom

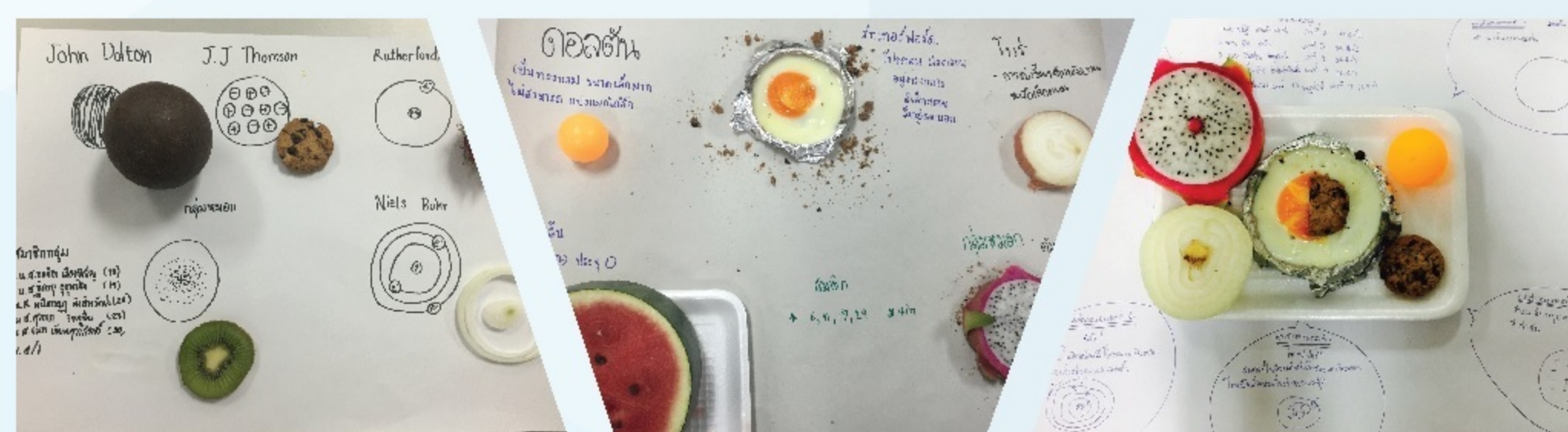


Figure 5-7 : Show Student Works

RESULTS

Table 1 : Shows Assessment of Student's Conceptual Understanding Before And After apply a vegetables - and - fruits model.

Scores	N	Mean (10 point)	SD
Pre-Test	30	5.83	0.87
Post-Test	30	8.20	0.92

Table 2 : Shows Student's Satisfaction on the learning unit.

Topics	Mean	SD	Satisfaction Level
Content	4.51	0.58	High
Learning Unit and Learning Process	4.56	0.55	High
Classroom Atmosphere	4.66	0.54	High
Teacher	4.51	0.64	High

CONCLUSION

The finding shows that students' conceptual understanding increased after participating in the learning unit. The average of students' level of understanding was in a "good" level. Moreover, they expressed their level of satisfaction in a "high" category, meaning that they felt positive to the learning unit. Therefore, it is suggested for other chemistry teachers to adopt or adapt this learning unit in their class.

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