



Received: 28-05-2022

Accepted: 08-07-2022

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Design and use test questions in the direction of developing students' qualities and capability to improve the quality of chemistry teaching at secondary schools in Vietnam

Thanh Tuan Chau

Cai Be Secondary School, Tien Giang Province, Vietnam

Corresponding Author: **Thanh Tuan Chau**

Abstract

The use of test questions with vivid practical images will help students acquire knowledge, educate life skills, communication skills, cooperation skills, apply them to real life... ideas and lifestyles for the young generation. Test questions with practical illustrations can be for many

students, selective depending on the purpose and time of the teacher's test; assess the content knowledge and competencies that students need to achieve by lesson or topic.

Keywords: Competencies, *Qualities*, Students, Test Questions, Knowledge

1. Introduction

In recent years, Vietnamese education has made many remarkable achievements in innovating teaching methods to improve the quality of comprehensive education for students, contributing to meeting the requirements of human resource development to serve the country. One of the current trends of innovation in teaching methods is the shift from one-way teaching to active teaching in order to promote positivity, self-discipline, initiative, creativity and development. thinking for students, thereby improving the quality of teaching and learning. Teachers are the ones who design and organize teaching activities for students to actively work, independently think, cooperate together to explore new knowledge and apply it in the process of learning chemistry, in real life. In order to do this, in addition to mastering professional knowledge, teachers must also know how to rationally use many different methods, means and forms of teaching organization ^[1].

On the other hand, according to the general education program, the overall program, problem-solving and creativity is one of the important general competencies that need to be developed for high school students in general, lower secondary school in private. In particular, problem solving and creativity are the basis for developing specific competencies of Chemistry such as: chemical perception; learn about the natural world from a chemical perspective; apply acquired knowledge and skills. An important factor is the capability to detect problems in time, select problems and solve problems that are reasonable in practice. If students are trained to acquire skills, methods, habits of self-study, flexibly apply what they have learned to new situations, and know how to self-detect and solve problems, it will create a desire to learn, unleashing the inherent potential of each student ^[2]. By doing so, the learning results will be multiplied and the teaching process will change from passive learning to active learning. At the same time, the assessment is the stage that determines the quality of the teaching process. Assessment helps teachers know the effectiveness and quality of teaching, adjusts content and teaching methods, helps learners know the quality of learning, adjusts learning methods and helps administrators make decisions about student learning outcomes, program adjustment and teaching organization. That clearly shows that it is necessary and urgent to reform the curriculum and teaching methods in combination with changing the form and assessment methods in high schools. This article presents designing and using test questions in the direction of developing students' qualities and capability to improve the quality of chemistry teaching at secondary school in Vietnam

2. Content

2.1 Competencies and qualities that need to be developed for students

According to ^[2]: "The general education program ensures the development of learners' quality and capacity through educational content with basic, practical and modern knowledge; harmonizing virtue, intelligence, body, aesthetics; focusing on practice, applying knowledge to solve problems in learning and real life. Based on the requirements of Vietnamese

characteristics, the new general education program after 2018 has identified 5 qualities and 10 competencies that

need to be formed and developed for students:

Table 1: Qualities and competencies are formed and developed for students

Qualities		Competencies	
Patriotism	This is a millennial tradition of the Vietnamese nation, built and nurtured over the years since our ancestors built and defended the country. Love for the country is expressed through love of nature, heritage, love of the people of one's country; be proud and protect those sacred things	General competence	Capacity in self-control and self-study
Kindness	Kindness is knowing how to love and care for people; love the beauty, love the good; respect differences; sympathy, generosity and willingness to help others		Competence in communication and cooperation
Diligence	The virtues of working hard, being eager to learn and enthusiastically participating in common work will help them train and develop themselves to achieve great success in the future.	Professional competence	Competence in problem solving and creativity
Honesty	No matter how good a person is without this virtue, he is still useless. Therefore, from an early age, students need to be trained in honesty, integrity and know how to stand up for right.		Language capability
Responsibility	Only when a person is responsible for what he or she does, that is when he or she matures and knows how to dedicate himself to a better society.		Computational Capability
			Informatics Capability
			Physical Capability
			Aesthetic Capability
			Technological Capability
			Competence in natural and social inquiry
These are the 5 qualities and 10 competencies that the new general education program focuses on forming and developing students, so that high school students will be more comprehensively developed.			

2.2 Assess student's capability

From the point of view of education, the assessment and assessment of learning outcomes must aim at progress as well as help learners to recognize and overcome difficulties through their knowledge, skills and attitudes. Competency

assessment is the assessment of learners' progress over time so that they can improve their learning.

According to [1, 4, 5] to assess students' capability, we need to use the following tools:

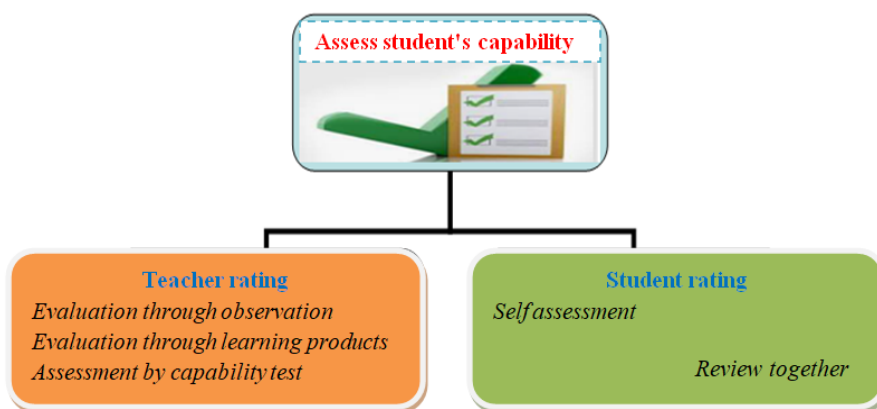


Fig 1: Forms of assessment according to student capability

Within the scope of this article, to assess the development of students' learning capability, we use "Assessment by capability test"

2.3 Develop test questions in the direction of developing students' learning capability

2.3.1 Requirements of the test (Test questions)

- The content must ensure the knowledge unit (knowledge standard)
- Ensuring teaching objectives; adhere to the knowledge, skills and attitude requirements at the level specified in the subject program.
- Ensure accuracy and science

- Match the test time
- Contribute to objective assessment of students' level.

2.3.2 Criteria of the topic (Questions)

- Content is not outside the program
- The content is spread out in lessons, lessons, chapters, and semesters
- The questions in the topic (post) have the appropriate ratio between objective questions and essay questions.
 - Innovative oral test (from 5 to 10 minutes) level of awareness and understanding
 - Renew test 45 minutes not less than 5 questions
 - Renewal test 90 minutes not less than 10 questions

Row (2): Which gas does the image below remind you?

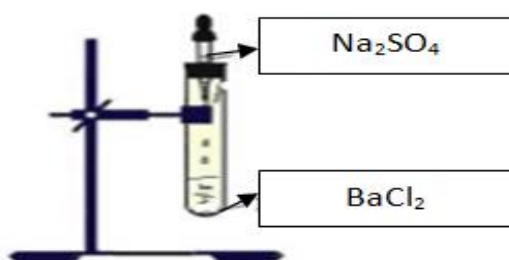


Row (3): What are the typical chemical properties of halogen and oxygen group elements?

Row (4): Compound A is the main ingredient that makes up table salt, what is the name of A?

Row (5): This is the chemical name of the compound that smells like rotten eggs

Row (6): The phenomenon observed when conducting the experiment as shown in the figure is:



Row (7): This gas is present in the stratosphere, has the role of blocking ultraviolet rays and radiation from the sun.

Row (8): This element is the most electronegative in the periodic table of chemical elements.

Row (9): Element X has the following configuration: 1s² 2s² 2p⁶ 3s² 3p⁴. X is called

Row (10): This is a liquid, reddish brown, volatile and toxic.

Row (11): Which element does the image below refer to?



Row (12): This is a gas commonly used to disinfect domestic water.

Test Topic 2

Subject: 9th grade chemistry

Time to do the test: 45 minutes

Full name: Class:

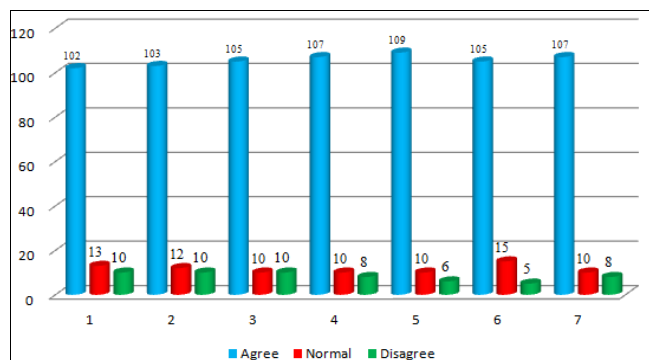
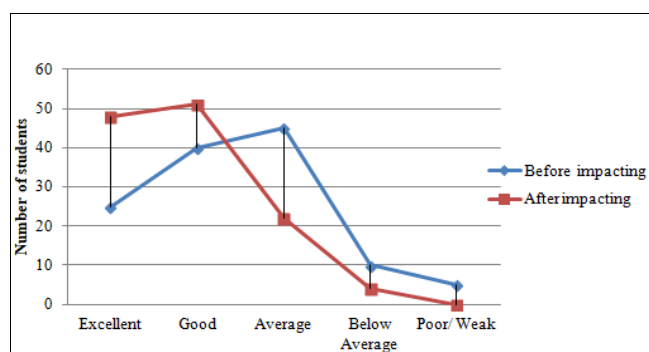
Lipids and health Lipids and health the role of lipids in the human body is particularly important, in the structure of cell membranes and storage in tissues, as a reserve of energy. In particular, it is also a solvent medium to dissolve vitamins in fat and is an important energy source in the daily diet. Lipids include many complex esters, including fats, which are indispensable components in the human development process.

Fats in food can be provided in both animals and plants. Lipids of vegetable origin such as margarine, refined oils, shortening, soybeans, peanuts, sesame... Lipids of animal origin such as eggs, meat, fish, aquatic products, lard. In 100 grams of lard, there are about 39 grams of saturated fatty acids such as tripanmitin, tristearin. One of the most commonly used foods today is vegetable oil with various types such as peanut oil, sunflower oil, brown



Table 2: Interest and love of studying Chemistry of some 9th grade students in 2021 – 2022

S. No	Interested in learning Chemistry	Agree	Normal	Disagree	Total
1	Tests in the direction of developing quality, stimulating capacity, promoting self-study capability	102	13	10	125
2	The test in the direction of developing quality, capacity helps students better understand and master the theory.	103	12	10	125
3	I study Chemistry better when there is a test in the direction of developing quality and capacity.	105	10	10	125
4	Test questions in the direction of developing quality and capacity with realistic, colorful pictures, attracting students to study Chemistry, explore and research	107	10	8	125
5	The exam questions in the direction of developing qualities and abilities to help students interact with teachers better	109	10	6	125
6	Studying Chemistry will help me a lot in my life	105	15	5	125
7	Students want to be regularly assessed through test questions in the direction of developing quality and capacity	107	10	8	125

**Fig 2:** Interest and love of studying Chemistry of some 9th grade students**Fig 3:** Graph of results achieved before and after the impact

Thus, the use of test questions with vivid practical images will help students acquire knowledge, educate life skills, communication skills, cooperation skills, apply them to real life... ideal education, living personality for the young generation.

3. Conclusion

The use of test questions with practical illustrations can be for many students, selective depending on the purpose and time of the teacher's test; assess the content of knowledge and competencies that students need to achieve according to the lesson/topic. Using this method is inexpensive in terms of economy, the knowledge that students have firmly grasped, has breadth and depth, students will remember for a long time and can still apply it to real life. From there, students will be interested in Chemistry and the quality of education will be improved

4. References

1. Nguyen Hai Chau, Vu Anh Tuan. General issues of educational innovation in high school, Education Publishing House, Hanoi, 2007.
2. Ministry of Education and Training. General Education Program - Master Program. Issued together with Circular No. 32/2018/TT-BGDĐT dated December 26, 2018 of the Minister of Education and Training, 2018.
3. Dang Thi Oanh (editor), Pham Hong Bac, Pham Thi Binh, Pham Thi Bich Dao, Do Thi Quynh Mai. Teaching and developing competence in Chemistry at high school, University of Education Publishing House Pham, Hanoi, 2018.
4. Ministry of Education and Training. Training materials, building thematic teaching and testing and assessment oriented towards student capacity development (internal circulation), Hanoi, 2014.
5. Nguyen Cong Khanh. Examination and evaluation in education, Pedagogical University Publishing House, Hanoi, 2015.