

MINISTRY OF EDUCATION AND TRAINING
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**ASSESSING THE LEARNING OUTCOMES
OF STUDENTS IN TEACHING GEOGRAPHY
12 IN HIGH SCHOOLS BASED ON
COMPETENCY-BASED APPROACH**

Speciality: Theory and Methodology teaching of Geography
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SUMMARY OF PHD THESIS OF EDUCATION

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INTRODUCTION

1. The rational of the thesis

1.1. Assessing students' learning outcomes (LOs) is a basic element of the teaching process. The assessment method is one of the top three subjects along with the learning method and teaching method that the education system needs to focus. Therefore, research aiming to improve the effectiveness of assessing students' LOs and contributes to improve the quality and effectiveness of teaching is one of the important goals of education science in general and is indispensable for theoretical research and subject teaching methods in particular.

1.2. In our country so far, assessing students' LOs in high school teaching in general and with Geography in particular, including Geography 12 still has some defects. The evaluations focus on whether students are master about the knowledge they learnt or not and care less about the skills of applying knowledge to solve practical problems and they are not able to promote the independence and creativity of students. The assessment emphasizes on the purpose of classifying so it has little effect in providing feedbacks to adjust and improve the quality of teaching and learning process. On the other hand, compared to other factors of the teaching process, especially innovating teaching methods with the application of many new and effective methods in teaching practice, the evaluation stage is “almost does not change in essence, though, it has also been focused” This situation has led to many limitations in the process of fundamental and comprehensive innovation of education that we are now focusing on remedying in which the renewal of evaluating students' LOs is determined as a key and breakthrough stage.

1.3. Our country's education system is being fundamentally and comprehensively reformed with a focus on shifting the educational process from mainly equipping knowledge to comprehensively developing learners' capabilities and qualities. It can be said that this change is a “revolution” in teaching. It is inevitable that when the way to approach education changed, the evaluation of students' learning results must be changed as well. This is not simply a foretold change of a component when its system changes, it is also the necessary “reform” of an inherent motivational factor which is backward. It aims to create reverse motivation, provide feedbacks,

control and promote other stages of the teaching process, especially teaching methods to improving the effectiveness of teaching.

1.4. The goal of teaching Geography in high school today is not only to provide students with geological scientific knowledge systematically but also to form and develop the necessary competencies for them. For grade 12, this course equips students with diverse, extensive geographical knowledge of nature, the socio-economy of the country and the local geography along with a system of skills, attitudes and affection related. Characteristics of the subjects enable the development of a number of specific competencies and with other subjects in the general education system to form common capacities for students, contributing to the value of students after graduated from high school with the ability of “choosing the direction to develop and promote personal capacity such as continue to attend college - university, professional high school or take an apprenticeship and go into working life” that meets the country's new development requirements in the new period.

Stemming from the awareness and requirements of the above reality as well as inheriting the relevant research achievements of other scientists, the author boldly selected the topic “*Assessing the learning outcomes of students in teaching Geography 12 in high schools based on competency-based approach*” as research content.

2. Objectives and tasks of research

2.1. Research objectives

Determining the process and measures to evaluate students' learning outcomes in teaching Geography 12 in high schools based on CBA aims to improve the quality of teaching Geography subject, contributing to the basic and comprehensive innovation of high school education.

2.2. Tasks of research

- Systematizing the theoretical basis for assessing students' LOs in teaching Geography 12 in HS based on CBA.

- Researching the reality of assessing students' LOs in teaching Geography 12 in HS.

- Determining requirements for assessing students' LOs in teaching Geography 12 in HS based on CBA.

- Identify the specific capacity system, evaluation criteria and the opportunity to assess the specific competencies in teaching Geography 12 in high school.

- Develop a process and propose measures to assess students' LOs in teaching Geography 12 in HS based on CBA

- Pedagogical practice to verify the scientific, practical and feasible of process and measures proposed.

3. The objects and scope of research

3.1. The objects

Process and measures to assess students' LOs in teaching Geography 12 in HS based on CBA.

3.2. The scope of research

- Geography 12 in HS (2006 program).

- Surveying the reality of assessing students' LOs in teaching Geography 12 in some HS in the whole country.

- Pedagogical practice at: Tran Phu High School, Phan Thanh Tai High School, Thanh Khe High School (Da Nang city) and Dang Tran Con High School (Thua Thien Hue province).

- Time for researching: From 2014 to 2018.

4. The hypothesis

If the process and measures for assessing students' LOs based on CBA in teaching Geography 12 in high school are proposed appropriately and ensure pedagogical requirements. They will help to assess the extent to which students achieve their competency goals, contributing to improve the quality of teaching this subject in high school.

5. Overview research issues

5.1. Overseas

Before and along with studies on assessing students' LOs based on CBA, researches tend to assess students' knowledge, especially positive trends such as assessment of dynamism, assessment of performance and assessment of accuracy, have contributed significantly to conceptualization and improvement of the nature of assessment in teaching.

Studies on students' LOs based on CBA focus on solving fundamental issues such as: Gronzi and Hager (1992), Wolf (1989); research on capacity system mentioned in OECD materials, studies

by Chappell (1996), Leach (2008); research on methods and assessment tools of Mawer (1992), Scallon (2004), Whiteley (1991), VEETAC (1993), Nitko and Brookhart (2007). Some other authors such as Pitman and others (1999), Davies and Harden have studied difficulties in assessing based on CBA.

There is no in-depth study on the assessment of students' LOs based on CBA. There are only a number of progressive views that suggest that assessments in teaching Geography should develop students' ability to explore issues around the world, expand into practical contexts and integrate evaluation activities into teaching.

5.2. In Viet Nam

Teaching and assessing LOs in the direction of capacity development are paid much attention by domestic researchers in recent times, especially since the policy of educational reforms is based on this approach. In Geography field, assessment in teaching is often mentioned in the study of theory and teaching methods with outstanding studies of Nguyen Duoc, Nguyen Trong Phuc (1998); Dang Van Duc, Nguyen Thu Hang (2003); Nguyen Duc Vu (2004). These studies have solved fundamental reasoning problems, paving the way for the application of positive assessment methods in teaching.

Recently, the training materials of the Ministry of Education and Training (2014) mentioned how to evaluate students' LOs based on CBA with a focus on identifying capacities and guiding to build practical questions and exercises. However, there has not been much in-depth research to elucidate all problems of assessing students' LOs in teaching Geography based on competency- based approach, as well as applying them to a specific class.

6. The viewpoints and research methods

6.1. The viewpoints research

The views used to study the thesis topic include: The viewpoint of system access, practical approach viewpoint, viewpoint of teaching based on CBA, historical- prospect viewpoint.

6.2. Methodology

The main methods used in thesis research include: analysis and synthesis document; investigation and survey; Observe method; Expert method; Pedagogical experiment method; Math statistics method.

7. The contributions of the thesis

7.1. About theory

- Applying selectively the theoretical issues of assessment in education, assessing students' LOs in teaching based on CBA in specific cases of 12 Geography in HS.

- Identify some specific capabilities, evaluation criteria in teaching Geography 12 in HS.

- Establishing the process of assessing students' LOs in teaching Geography 12 in HS based on CBA.

- Proposing measures to assess students' LOs in teaching Geography 12 in HS based on CBA.

7.2. About practicality

- Analyze the current situation of assessing students' LOs in teaching Geography 12 in HS today.

- Design a number of integrated learning plans for assessment activities used in assessing students' LOs.

- Verify the scientific, practical and feasible of the process and measures to assess students' learning results in teaching Geography 12 in HS with CBA through pedagogical experiment.

8. The structure of the thesis

In addition to the introduction, conclusion and recommendations, the main content of the thesis consists of 3 chapters:

- Chapter 1: Theoretical and practical basis of assessing students' learning outcomes in teaching Geography 12 in high school based on competency-based approach.

- Chapter 2: Procedures and measures for assessing students' learning outcomes in teaching Geography 12 in high schools based on competency-based approach.

- Chapter 3: Pedagogical experience

CHAPTER 1: THEORETICAL BASIS AND PRACTICAL RESULTS OF THE EVALUATION OF STUDENTS' LEARNING OUTCOMES IN TEACHING GEOGRAPHY 12 AT HIGH SCHOOL BASED ON COMPETENCY-BASED APPROACH

1.1. Methods of educational innovation in our country nowadays

1.1.1. Innovating Educational Program based on CBA

Our country's High school Education Program is currently being reformed based on CBA. Accordingly, the teaching process changes

from mainly equipped students with knowledge to comprehensive development of learners' competencies and qualities.

1.1.2. Innovating teaching methods and the evaluation of students' learning outcomes based on CBA

The renewal of the High school Education Program based on CBA requires and leads to the renewal of relevant elements. In particular, teaching methods must be active in learners' activities, in which teachers play a role of organizing and guiding activities for students, creating a friendly, diverse learning environment with problematic situations. In addition, the assessment activities must emphasize to provide accurate, timely and valuable feedback on the student's ability to guide learning activities, adjust teaching, management and develop the program, ensure each student's progress and improve the quality of education.

1.2. Capacity and teaching and learning based on CBA

1.2.1. Capacity

1.2.1.1. Definition of capacity

Capacity is an individual attribute that is formed and developed thanks to the available qualities and the process of learning and training, allowing people to mobilize to synthesize knowledge, skills and other personal attributes such as inspiration, interest, belief, will to perform a certain type of activity successfully, achieving the desired results under specific conditions.

1.2.1.2. Structure of capacity

The structure of capacity is considered under two angles: the constituent resources and the departmental capabilities. Combining two perspectives allows for a comprehensive review of competencies, in the assessment, they help determine the evaluation criteria to accurately and comprehensively measure capacity.

1.2.1.3. Characteristics of capacity

Capacity can be identified through basic characteristics: (i) Capacity is a combination of personal psychological attributes rather than a single attribute; (ii) Capacity is disclosed in operations to meet specific requirements, in specific contexts; (iii) Capacity expressed through the level of success and effectiveness of operations.

1.2.1.4. Classification of capacity

Competency is often divided into general competencies (the

competencies which all subjects and educational activities contribute to develop) and specialized competencies (specific competencies of the subject, developed through a subject).

1.2.2. Teaching based on CBA in HS

1.2.2.1. Teaching based on CBA definition

Competency-based teaching is the layout, arrangement and the impact to learning of the elements of the teaching process in order to form and develop competencies for students. The organization and impact on the components of the process of teaching with CBA is implemented comprehensively in all stages, from defining goals, content and methods to forms of teaching as well as assessment activities.

1.2.2.2. Characteristics of teaching based on CBA

The basic characteristics of teaching based on CBA are: (i) Teaching objectives towards forming and developing competencies, they are described in detail and can be observed and evaluated, (ii) The content of teaching through lessons should be related to the outputs; (iii) teaching methods, organizational forms of teaching must promote pedagogical interaction, enhance student participation; (iv) Assessing students' LOs should consider the level of meeting the output requirements that need to be achieved and promote the role of supporting students' learning activities.

1.3. Evaluate LOs in teaching and learning in high school

In teaching with CBA, the content of teaching through lessons should be related to the outputs; Methods and forms of teaching must promote pedagogical interaction, enhance student participation. Assessing students' learning results should consider the level of meeting the output requirements that need to be achieved in order to promote the role of supporting students in learning activities.

1.3.1. Some basic concepts

- Learning outcomes: LOs are statements about the intended outcome of learning and teaching, it describes knowledge and skills, as well as important and essential values that learners should achieve and can prove reliably at the end of the curriculum.

- Assessing LOs: Assessing LOs is the process of collecting and analyzing information about knowledge, skills and values of learners,

thereby comparing with appropriate criteria of the identified goal to make judgments about the level of achievement and use them to make appropriate decisions.

- The concepts of testing, measurement and valuation are concepts closely related to the concept of assessing students' LOs.

1.3.2. Role, functions, forms of evaluating students' LOs

- Assessing students' LOs has the following basic roles: Providing information about students' LOs after a learning process, providing feedback on learners' abilities, linking teaching and learning activities to contribute to improving teaching effectiveness.

- Assessing students' LOs has three basic functions: management function, control and adjust teaching and learning activities function, educate and develop students function.

- Types of assessment: Evaluation of diagnosis, process assessment and summation assessment.

1.3.3. Methods and tools to evaluate students' LOs

- The basic methods used in assessing students' LOs include: Writing test method; assessment through learning products method; observation methods; question and answer method;

- The basic tools used in the assessment of LOs include feedback collection tools such as questions, exercises and tests, and grading tools such as points, checklist; rubric; academic records... ect

1.3.4. Principles for assessing students' LOs

Assessing students' learning results should ensure the basic principles: Ensuring objectivity; ensure education; ensure comprehensiveness; ensure fairness and ensure development.

1.3.5. The relationship between evaluation and other elements of the teaching process

In relation to other factors of the teaching process, evaluation is an indispensable and interactive component with all other elements. In which, according to the modern viewpoint, the evaluation has a close and inseparable relationship with teaching activities.

1.3.6. Evaluating students' learning outcomes based on CBA

Assessing students' LOs in teaching based on CBA is the process of forming judgments, drawing conclusions or predictions about the level of students' ability to achieve the capacity by determining, analyzing and explaining collected information

systematically through assessment tasks focusing on solving problems in practical situation and context; besides, giving feedbacks to students, schools and families about the evaluation results so that they can take appropriate measures to foster and train students' capacities.

1.4. Physiological and Psychological characteristics and Cognitive Ability of grade 12 students

1.4.1. Physiological and Psychological characteristics of grade 12 students

Grade 12 students are in the early stages of adult. At this age, children have reached the maturity level of their bodies, beginning to identify their own direction, socially conscious. The formation of the world view is a key feature of psychological development of grade 12 students.

1.4.2. Cognitive Ability of grade 12 students

At the age of 12th grade, independent thinking develops at a high level. Their initiative in seeking and dominating knowledge is increasingly evident. The interest of students in this period is deeper than the previous age. These characteristics are consistent with the characteristics of teaching and assessing students' LOs based on CBA.

1.5. Target and content of Geography 12 program

1.5.1. Target of Geography 12 program

The current goal of Geography 12 in addition to the focus of "continuing to improve students' knowledge of Vietnamese geography", also focuses on forming and developing students' basic geography skills system, along with positive attitudes and feelings.

1.5.2. Content of Geography 12 program

Geography 12 has a content around the Vietnamese geographic issues, which focus on the main topics including: Geography, Residential Geography, Economic Geography and local Geography

1.5.3. The ability to perform evaluation based on CBA through Geography 12 program

The current Geography subject program is a content-based program but can conduct assessments of CBA on the basis of: (i) the overall goal has been aimed at developing fundamental factors of capacity is knowledge, skills and attitudes; (ii) practical content is an

opportunity to develop assessment situations in the direction of applying the knowledge and skills learned; (iii) Logically organized content, facilitating the development of students' capacity according to the level of completion and improvement (iv) Local geography can be viewed as an open channel, creating opportunities for organize teaching associated with practice, thereby assessing student capacity.

1.6. The reality of evaluating students' LOs in teaching and learning Geography 12

- Teacher survey results: Most teachers have the right awareness of the importance, purpose and position of assessment in teaching. However, there is still a big gap between awareness and practice. Teachers have not focused on developing assessment process and have not focused on the use of student evaluations and the feedback is mostly formalistic. Therefore, they have not yet met the requirements of innovation and assessment of LOs based on CBA.

- Results of student surveys: students are less interested in teachers' evaluation activities, whereas, they also acknowledge the pressure that tests create for them. In addition, students are less likely to participate in self-assessment and evaluation of their study results even though they are very interested in this.

CHAPTER 2: PROCESS AND MEASURES FOR ASSESSING STUDENTS' LEARNING OUTCOMES BASED ON COMPETENCY- BASED APPROACH

2.1. Requirements for evaluating students' LOs in teaching Geography 12 in high school based on CBA

Assessing students' LOs in teaching Geography 12 based on CBA should ensure the following requirements: Based on specific and publicized criteria; being carried out continuously during the teaching process; be implemented based on various methods and tools; encourage and create opportunities for other stakeholders to participate in the assessment.

2.2. Specific capacity system, evaluation criteria and opportunity to evaluate capacities in teaching and learning Geography 12 in HS

2.2.1. The specific capacity system and the criteria for evaluating capacities in teaching and learning Geography 12 in high school

2.2.1.1 Geographical comprehension capacity

- Geographical comprehension capacity is shown in student ability to demonstrate the correlation between knowledge, understanding of spatial processes and patterns and interaction between people; between human and environment based on space and time.

- Evaluation criteria for geographical comprehension capacity include: Comprehension of related spatial processes and patterns in a spot, area, region; Comprehension of similarities and differences between spatial processes and patterns and spots, areas or regions; Comprehension of the correlation between environmental problems and social problems; Comprehension the interdependence between human and environment.

2.2.1.2. Understanding Geography capacity

- Understanding Geography capacity is shown in the student ability to demonstrate geographical skills and techniques as well as the ability to raise questions, collect, organize, and the ability to analyze information and make assessments based on collected information, including important capacities such as using maps and map skills (spatial and technical skills), using statistical figures, graphics (diagram, picture) and other tools (electronic data devices).

- Evaluation criteria for Understanding Geography capacity include: Raise geographical questions; Collect geographical information; Organize geographical information; Analyze geographical information; Answer geographical questions.

2.2.1.3 Ability to apply the knowledge and skills learned

- Ability to apply the knowledge and skills learned is shown in student ability to apply geographical knowledge, skills learned into environmental problems and challenges, to be aware of the values, attitudes and suggest acceptable solutions, strategies and take responsible action in order to contribute to social justice and sustainable development of society and environment.

- Evaluation criteria for ability to apply the knowledge and skills learned include: Apply knowledge and skills learned to explain natural phenomenon, socio-economic phenomenon; Apply knowledge and skills learned to deal with practical problems; Determine values and attitudes of individuals and associations related to spatial processes and patterns and human interaction towards environment.

2.2.2. Opportunity to evaluate specific capacities and evaluation criteria in teaching and learning Geography 12 in high school

Opportunity and criteria to assess the competencies are presented in most and throughout the lessons. The most importance is that the teacher determines and chooses to evaluate the competencies and criteria that focus on each lesson.

2.3. The process of evaluating students' learning outcomes in teaching and learning Geography 12 in high school based on CBA

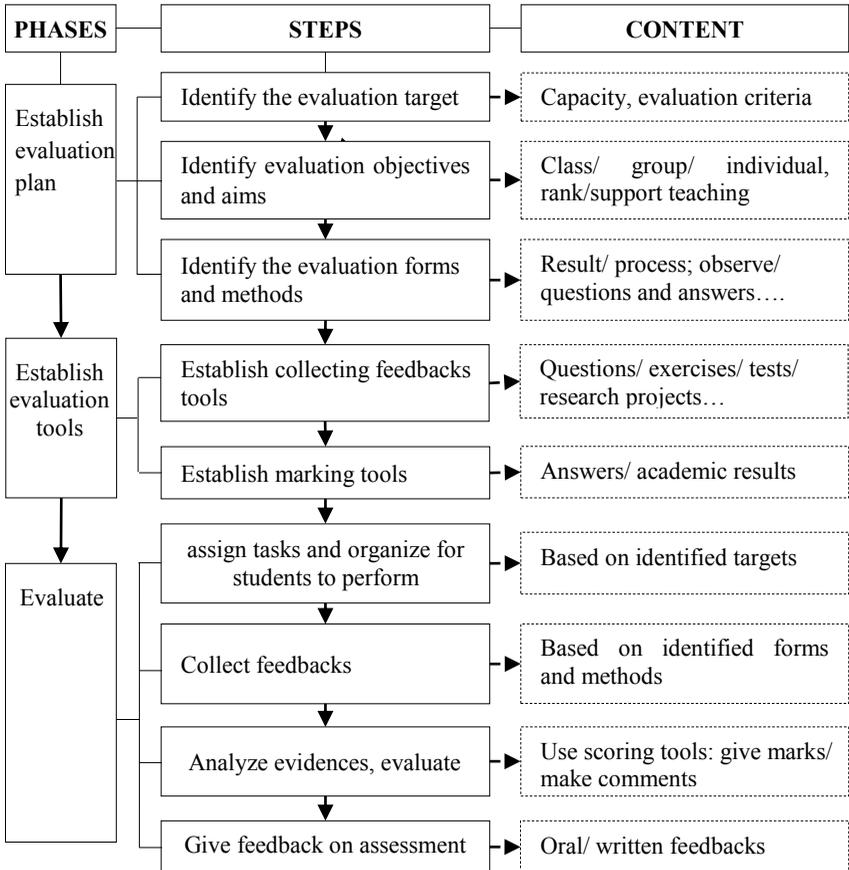


Figure 2.1: Diagram of the process of evaluating student learning outcomes in teaching and learning Geography 12 in HS based on CBA

2.3.1. Evaluation-plan development phase

- *Step 1)* Determine the evaluation objectives: teachers determine the competencies needing to be assessed, in those competencies, select assessment criteria that are appropriate to the lesson content or evaluation requirement.

- *Step 2)* Determine the object and the purpose of the assessment: Depending on the purpose of the assessment, the teacher's intention or other factors, the subject of the assessment may be all students of the class (whole class assessment), some students of the class (group assessment) or any student (individual assessment).

- *Step 3)* Determine the form and method of assessment: teachers can use the form of product evaluation or process evaluation; Teachers can choose assessment methods such as writing tests; study student activity products; Questions and Answers; methods of observation, self-assessment and peer review.

2.3.2. Evaluation-tool development phase

Evaluation task in student academic results in teaching is varied: questions, exercises, tests, geographical research proposed by teacher. Depending on selected information- collecting tools, suitable scoring tools would be available such as answers, rubric.

2.3.3. Evaluation implementation phase

- *Step 1)* Assign tasks to students: according to the evaluation plan established, teachers assign tasks to targeted students by suitable methods.

- *Step 2)* Instruct students in performing tasks: After assigning tasks, teachers create environment for students to perform tasks. Depending on the plan, students could implement tasks at school or at home.

- *Step 3)* Collect student products of the tasks: Teachers could collect by writing, collecting products or using recording devices.

- *Step 4)* Analysis of evidence and assessment: Based on the interpretation and analysis of collected evidence based on grading tools, teachers give final evaluations of students' performance results. Teachers can evaluate by scoring (quantitative), commenting (qualitative) or in many cases should be a combination of both ways.

- *Step 5)* Give feedback on evaluation results: Evaluation results from teachers are reported back to students through oral and written forms.

2.4. Measure of assessing students' learning outcomes in teaching Geography 12 in senior high school based on CBA

2.4.1. Group of measures for developing evaluation plan

2.4.1.1. Combine lesson plans and evaluations in teaching Geography 12 based on CBA

- *Step 1)* Inform evaluation content, context, capacity and criteria: Provide the main content of the lesson, at the same time determine evaluation capacity and criteria based on the content.

- *Step 2)* Develop activities and choose teaching methods: Determine how to give lessons on evaluation capacities and criteria given in step 1 and develop activities or activities would create favourable conditions for developing skills, knowledge in groups.

- *Step 3)* Consider and propose various resources for each activity: imagining different choices available in each activity would enable more opportunities for students who need financial support.

- *Step 4)* Propose evaluation strategy towards activities: On the basis of developed teaching activities, teachers set out evaluation strategies towards each activity in order to support teaching.

- *Step 5)* Distribute time: Distribute time for each activity reasonably, including time for evaluation activity.

2.4.1.2. Combine assessment forms and methods with teaching forms and methods.

When assessments are integrated into the lessons, it will be influenced by the classroom context and has an impact on the other stages. Therefore, it is necessary to have effective coordination between methods, forms of teaching and methods and forms of assessment of students' LOs in order to enhance the effectiveness of interaction and support between them. For the task of evaluating research, it can be used in combination to organize project-based teaching, in the form of teamwork; For other hands-on exercises, teachers may ask students to work in individual, group, or full-class forms in class activities; For self-questioning and objective multiple-choice questions, teachers can use it in combination with many different teaching methods.

2.4.2. Group of measures of evaluation tool development

2.4.2.1. Create student academic assessment exercises in teaching Geography 12 in senior high school based on CBA

- *Step 1)* Developing ideas and sketching exercises: The idea of exercises is the teacher's initial thoughts on forms and structures of the exercises which will be built. Besides studying the content in

textbooks, Teachers can search for ideas about exercises through studying Vietnamese Geography Atlats, studying about issues around life, find out local issues.

- *Step 2)* Collecting and editing information and graphic forms: teachers can diversify information and materials through research to include in the analysis, conclusions and research results in monographs, reference books on Geography and other related fields, research results in the field of Geography which have been published in specialized journals; search and include questions, exercises of some natural geographic phenomena and socio-economic geography taking place in reality.

- *Step 3)* Complete assessment exercises: Based on the idea of questions, identified exercises and information, data collected and / or built, teachers conduct compilation and complete questions and exercises.

- *Step 4)* Determine the grading tool: In an exercise, there may be many tasks given to students, the results of performing these tasks can be measured with different scoring tools. For simple tasks, teachers can use scoring tools as keys and scales. For complex and diverse tasks, scale-based grading tools are used based on specific criteria.

- *Step 5)* Compiling grading tools: Based on the selected scoring tool, teachers conduct compilation to use for collecting evaluation information. In an exercise, each question can use a separate scoring tool. Even in one question, it is possible to use different scoring tools.

2.4.2.2. Create student academic assessment tests in teaching Geography 12 in senior high school based on CBA

The process of developing tests to assess students' LOs in teaching Geography 12 in HS follows the general assessment process proposed in section 2.3. After identifying the basic contents such as the capacity to be evaluated, the object, the purpose of evaluation, the important task is to build a matrix to use as a basis for writing questions.

2.4.2.3. Develop assessment through research tasks in teaching Geography 12 in senior high school based on CBA

a) How to develop research tasks in teaching Geography 12 in high school: Teachers can follow the steps: Develop ideas and decide research topics; Organize students to develop a hypothesis / problem statement; Provide evaluation framework and research guidance; Organize students to conduct research; evaluate research results.

b) Some ideas on research tasks in teaching Geography 12 in high school: The idea of a research task can be found by connecting the content of teaching with local practice. Locality related to specific issues can find connection with teaching content and this is different in different areas.

2.4.2.4. Use various scoring tools effectively in evaluating student academic results

Rating scales: a scoring tool in accordance with the tasks of assessing knowledge and simple skills; Checklist: a very useful tool in peer assessment or observation because it uses generalized criteria, easy to understand and easy to grasp in the object; Rubric: This grading tool is suitable for complex assessment tasks, when teachers want to assess in detail the level of accomplishing specific evaluation criteria of students.

2.4.3. Group of measures of evaluation implementation

2.4.3.1. Coordinate teacher assessments with student assessments

To organize student self-assessment or peer assessment, teachers can use the process of basic steps: teachers provide grading tools built for students or groups of students to conduct research; teachers explain and discuss with students about descriptions in the grading tool; Students use the grading tool provided to conduct the required product scoring; teachers instruct students to write comments; teachers talk to individuals or groups of students about the scoring results.

2.4.3.2. Use and combine various assessment forms with feedback

Increase feedback by incorporating oral and written feedback. Teachers should use the description type of feedback for the student, describing why the answer is right or wrong, suggesting change, and improving students' achievement.

2.4.3.3. Collaborate in assessing professional competency and general competency

Teachers should focus on incorporating common competencies in assessment plans when there is an opportunity. The general capacity assessment results can be used independently, however, teachers should use this result to contribute to the overall assessment results in an assessment task.

CHAPTER 3: PEDAGOGICAL EXPERIMENT

3.1. Purposes of pedagogical experiment

Organize pedagogical experiment to verify the feasibility, effectiveness of the process and measures to assess students' LOs in teaching Geography 12 in HS based on CBA. Thereby, making conclusions about whether the hypothesis of the thesis is true or not.

3.2. Content of pedagogical experiment

- Experiment applies processes and measures based on CBA to assess students' LOs in teaching Geography 12 in HS.

- Take pedagogical practice and continue to follow up, collect feedback from teachers and students to improve the process, how to build the tools to assess students' learning results according to New approaches have been developed (assignments, research tasks, tests).

3.3. Organize pedagogical experiment

3.3.1. Experiment tasks

Pedagogical experiment has the following main tasks: Develop experimental plan; Organize pedagogical experiment; Evaluating experimental results.

3.3.2. Experimental object

Pedagogical experiment was conducted in 04 HS: Tran Phu high school, Thanh Khe high school, Phan Thanh Tai high school (Da Nang city), and Dang Tran Con high school (Thua Thien Hue province).

Table 3.1: Some information about experimental classes and collating classes selected

School's name	Experimental classes		Collating classes		Total number
	Class	Student number	Class	Student number	
Tran Phu	12/7 (E ₁)	34	12/12 (C ₁)	41	75
Thanh Khe	12/10 (E ₂)	40	12/8 (C ₂)	37	77
Phan Thanh Tai	12/1 (E ₃)	45	12/4 (C ₃)	42	87
Dang Tran Con	12B6 (E ₄)	40	12B7 (C ₄)	37	77
Total number	159		157		316

3.3.3. Content of experimental lesson

Content of experimental lesson (from which the experimental time is set) is in the first semester with a total of 13 lessons according to the program distribution, with omitted lessons and the reduced content.

3.3.4. Experimental method

- Experiment with collating is the main method to evaluate the effectiveness of the process and measures to evaluate students' LOs based on CBA. Experimental and collating classes are arranged in parallel.

- The method of observing and surveying teachers and students' opinions is used to monitor the reaction, the level of reception and the progress of students during the experimental process, thereby contribute to the evaluation of the effectiveness of process and measures applied. This method is also used to collect ideas to improve assessment tools.

3.3.5. Method of evaluating experimental results

Mathematical statistics method is used to describe data, compare experimental and collating classes, as well as determine the affect level of the impact. Statistical parameters were used to compare between experimental and collating classes including: average, standard deviation and variance. Besides, the author used the average difference test to compare the average of experimental results between class groups; use the Pearson correlation coefficient between regular classroom tests and end-of-semester tests to assess the stability of assessment results.

3.3.6. Experimental process

The pedagogical experiment process is carried out according to the specific process, starting from transferring methods and measures to the teachers participating in the experiment; followed by applying to practical assessment in classroom teaching; During the experiment, the author interacted, followed up, provided necessary support for teachers and students; After the experiment, the author surveyed teachers and students' opinions to have more basis to evaluate experimental results.

3.4. Experimental results

3.4.1. Results of experimental tests

3.4.1.1. Results of the first experimental test

In the experimental classes, the level of competency, average score achieved by the student is higher than the corresponding collating class. This difference is also expressed through other parameters such as standard deviation, Mode value.

**Table 3.6: Results of summarizing statistics and inspection parameters
T-test capacity of students in experimental and collating classes**

Class	\bar{X}	S	Mode	SMD	t	Sig.
E ₁	7,02	0,98	7	1,02	4,898	0,000
C ₁	5,86	1,13	5			
E ₂	6,89	1,25	7,5	0,71	3,255	0,020
C ₂	5,95	1,29	6,5			
E ₃	7,47	1,08	7,8	0,84	4,036	0,000
C ₃	6,51	1,13	7,0			
E ₄	6,75	1,06	8,0	0,71	3,190	0.002
C ₄	5,95	1,12	6,0			

T-test results with Sig. coefficient (2 tails) of all experimental and control groups were less than 0.05 (5%), indicating a statistically significant difference between the mean scores of experimental and collating groups. Therefore, it can be affirmed that the applied measures have a positive impact on the development of students' abilities, not randomness. The standardized mean difference (SDM) also shows that all groups are at the average or higher affect level.

3.4.1.2. Results of the second experimental test

Similar to the first test, the experimental classes have a higher level of competency and average score than the corresponding collating classes. This difference is also evident through other parameters such as standard deviation, Mode value.

**Table 3.8: The results of synthesizing statistical parameters and testing
T-test capacity of students in experimental and collating classes at the
second test**

Class	\bar{X}	S	Mode	SMD	t	Sig.
E ₁	7,21	0,96	7,5	1,05	4,898	0,000
C ₁	5,97	1,18	5,5			
E ₂	7,09	0,95	7,0	0,70	3,271	0,020
C ₂	6,30	1,13	5,0			
E ₃	7,69	1,11	7,5	0,80	3,823	0,000
C ₃	6,75	1,17	6,0			
E ₄	7,10	1,16	8,0	0,85	3,734	0,000
C ₄	6,00	1,30	6,0			

T-test result with Sig. coefficient (2 tails) of all experimental and collating groups in the second test result are less than 0.05, indicating that

there is a statistically significant difference between the mean score of the experimental and collating groups. Thereby, it can be affirmed that the applied method has a positive impact on the development of students' competency in experimental classes, not randomness.

3.4.1.3. Correlation between regular test scores and end of semester 1 test scores

In the experimental process, the experimental classes were conducted more frequently than the collating classes. The results of the correlation analysis between the end of the semester 1 test with the average of 04 regular tests in the experimental class, and the correlation coefficient between the final semester test and the average of 1 lesson Regular checks in the control class show:

Table 3.9: Results of correlation analysis of frequent checkpoints and checkpoints after experiment

Class	sig.	r	Correlation (according to the Hopkins table)
E ₁	0,000	0,610	High
C ₁	0,001	0,491	Average
E ₂	0,000	0,666	High
C ₂	0,002	0,494	Average
E ₃	0,000	0,700	Very high
C ₃	0,057	0,296	Uncorrelated
E ₄	0,000	0,649	Very high
C ₄	0,004	0,473	Average

Score of semester test and average score of the regular tests in all the experimental classes are correlated with each other (sig. < 0.05). With $r > 0$, this is the positive correlations, meaning that students having high average scores of regular tests will have high score in one-lesson-time test and vice versa. Comparing with Hopkins, class E₃ has a very high levels of correlation ($r = 0.700$), the other experimental classes remaining high level of correlation E₁ (0.610), E₂ (0.666) and E₄ (0.649).

3.4.2. Results of the survey of teachers and students' opinion after experiment

3.4.2.1. Results of survey of teachers' opinions after experiment

Teachers appreciate the positive impacts of the measures applied. There are 5/6 aspects that are assessed at an effective level or more at all teachers (100%). One other aspect is assessed at an effective level of impact from 75% of teachers. Most of the content is evaluated at an

effective or higher level. For the evaluation of "student participation in assessment activities", 75% of teachers rated them as effective or higher, while a small proportion of teachers rated them as less effective (25%).

3.4.2.2. Results of survey of students' opinions after experiment

From 159 students surveyed, 85 students (53.5%) felt very excited, 60 students (37.7%) felt excited, only 8 of them (5.0%) felt the normal and 6 of them (3.8%) feel less interested. Notably, none of the students felt uninterested. Survey of the above interest through specific aspects shows that students are interested in all aspects of the survey. In particular, students are especially interested in "listening and reading feedback on the evaluation results of teachers", "evaluating the results of friends".

3.4.3. Qualitative evaluation of experimental results

Carry out assessments in the classes is done quite smoothly and does not cause any heavy feeling. With the proposed method, teachers have to make assessment with a higher level and frequency, but because of the preparation, it can be done smoothly. Students do not feel pressure but are excited and proactive. With the tools developed in the proposed manner, teachers are very convenient in collecting information to evaluate, the students' self-assess at first are a bit difficult, but the later they got easier to do. The implementation process also shows that it is well- performed by the teacher, ensure the steps conducted and no difficulties would affect the implementation of the teacher. However, in order to carry out the evaluation process in class, teachers have to invest more time in designing tools, they also have to interact with more students in class.

CONCLUSION AND RECOMMENDATIONS

1. The conclusions of the thesis

- The thesis studies the evaluation components in teaching, this is one of the important contents of teaching process based on CBA. In the context of the current education innovation, its urgency is shown in both theoretical and practical aspects. Competency-based education is a new and positive approach which creates and develops necessary competencies in learners. In particular, as a component of the above process, evaluation also plays an important role in supporting teaching and learning activities, positively contributing to the formation and development of students' competency.

- Through a selective review of research works as well as systematizing the views of researchers and analyzing related issues, the thesis has established a theoretical basis as a cognitive foundation for research process. Competency-based assessment is actually a combination of modern

evaluation theories into a new teaching approach - competency-based teaching. Its basic features include: based on clearly defined competencies and standards; Focusing on developing classroom assessments, developing assessment tools that encourage the ability to apply knowledge, skills, attitudes and values to solve practical problems or possible problems and encourage students' participation in assessment activities.

- Research on the reality of assessing students' LOs in teaching Geography 12 in HS shows a picture that has many defects. Although teachers have made positive changes in their awareness due to the access to the policy of education innovation through many different channels, basically, assessment activities in teaching are still carried out in the old way. This situation, on the one hand, is due to the limitations of teachers when they have not taken the initiative to innovate the assessment method. On the other hand, they are still affected by the old assessment methods. Therefore, it can be seen positively that this is a transition period to evaluate students' LOs based on CBA. The gap between awareness and practice of assessment is a barrier that can be removed when the new High school Education Program and regulations on assessment are applied.

- To create a premise for the assessment of students' LOs in teaching Geography 12 in HS based on CBA, the thesis has identified and described the specific competency system and evaluation criteria. Accordingly, the specific competencies need to create and develop for students in teaching Geography 12 in HS include: the ability to perceive geo-science, the ability to understand geography and the ability to use knowledge and skills learned. The thesis has identified and described a total of 12 evaluation criteria for all competencies. The evaluation criteria are the "link" between the competencies and the content and topics of the lessons in the Geography 12 Program helping teachers have a basis to build and develop tasks to assess students' LOs.

- In order to carry out assessments in teaching Geography 12 in HS based on CBA, teachers can base on a 3-stage process including evaluation planning, building assessment tools and evaluate. Along with that, teachers need to take measures to integrate assessment activities into teaching plans; use a variety of assessment tools, especially practical exercises, research tasks and effective grading tools like rubric; Encourage student evaluations in conjunction with using forms of evaluation and positive feedback in conducting evaluations. Applying the whole process and these measures contribute to the assessment in teaching, making the assessment become regular, continuous and interesting for students. Most importantly,

maximizing the use of the evaluation function in improving learning, contributing to supporting student capacity development.

2. Limitations of the Thesis

- The thesis is carried out when the process of fundamental and comprehensive innovation of education in our country in the capacity approach is in the process of being implemented. Therefore, this approach to teaching and evaluation has only been discussed recently. Knowledge about it is somewhat limited and there are still issues to discuss. For example, the concept of competency along with related issues changes over time and does not seem to have reached agreement by many researchers. In that context, although the thesis has tried to solve the problems raised on the basis of synthesizing and comparing many points of view, but cannot include all points of view. In concept development, this study also did not have conditions to analyze the differences of some of the concepts currently in use, such as “competency-based assessment”, “assessing according to access to capacity”, “assessing capacity”. Therefore, they are considered similarities and use interchangeably in many cases.

- Single research methods in a principle study needs to be connected. This has not been achieved in some cases in this study, some methods have only been used as support for other methods. For example, interviews with teachers and students, classroom observations are only used with limited numbers of teachers and lessons to support the investigation and survey methods to deepen real knowledge about reality. In addition, the pedagogical experiment process is also conducted in a limited number of schools, teachers and students participating, so there are no conditions to clarify the problems that affect to this program including regional, cultural, teacher and student characteristics as well as their relationship and pre-existing study habits.

- The process and measures proposed through this study only provide a total solution to implement the new assessment approach. There are still important issues related to it that have not been resolved. For example, how to evaluate specific competencies the most effectively and how to systematically integrate student achievement to make a final assessment. Unresolved issues in the studies in the past and through this study, it is necessary to develop further studies, especially when the Program and new textbooks follow the competency approach are applied in practical teaching.

3. Recommendation

- There is a real and urgent need from the teachers in HS across the country to foster theoretical knowledge and practice the assessment

of students' LOs based on CBA. This shows that it is necessary to transfer to teachers the issues related to the new assessment approach and this should be done in a synchronized manner before applying the new program and textbook. The difficulties that teachers face when carrying out the assessment of new LOs mentioned in this thesis are important suggestions for the development of teacher training and retraining topics. Attention should be paid to fostering teachers on the process of implementation, assessment methods and ways to build tools to assess students' LOs based on CBA.

- In order to perform the assessment not only through a lesson but all the lessons in the program effectively, teachers should develop an overall assessment plan for the school year. Such a plan will identify formal and informal evaluation tasks during the school year, time, core competencies and standards. This plan will be the basis for teachers to develop daily evaluation plans in classrooms and tests that are reasonable and balanced.

- Evaluation tool is a determinant of success of assessment. Teachers should not rely solely on available resources in textbooks to build assessment tools because it is quite limited. They should increase the search for information and materials from other sources instead, especially from the Internet to build assessment tools or they can also edit them themselves. In these cases, teachers with good information technology skills, know how to use software to edit maps, video clips, or have many advantages. This shows that it is very important to improve the capacity of using information technology for each teacher.

- Teachers should boldly give up their "privilege" to guide and facilitate students to participate in the assessment process. In the context of a class with a large number of students, while the lesson content is dominated by the time limit, teachers should prioritize forms of group assessment. They can help to save time and create conditions for teachers to assess students' ability to coordinate teamwork.

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