

MINISTRY OF EDUCATION AND TRAINING
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**FORMATIVE – APPROACH – BASED ASSESSMENT OF
STUDENTS' LEARNING OUTCOMES IN PEDAGOGICAL
UNIVERSITIES IN THE SUBJECT EDUCATION**

Major: THEORY AND HISTORY OF EDUCATION

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**ABSTRACT OF
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INTRODUCTION

1. Rationales for the research topic

Our national training – education has been having innovation meeting demands of requirements of industrialization – modernization of the country. With the spirit of Regulation 29 Central meeting 8 Course XI in the year of 2013 of “Basic comprehensive innovation in education – training”, assessment needs to be implemented systematically to get an improvement of quality.

Innovative trends of assessment in teaching have been great changes. General assessment is orientated to the highest target of training human forces and enhancing labours’ competencies. Then in teaching process, the assessment purpose has been changing from the final exams to purposes of the process gaining those results.

With the higher and higher requirements of human force, social expectation to the training process in pedagogical universities are being put on educators’ shoulders. The reality of credit – based training has led initial improvement of learning outcome assessment such as assessment tools in some subjects, the supports of modern technique devices. However, we did not identified the assessment philosophy, scales, criteria, and there were several difficulties of assignments, missions, bank of questions, lecturers’ assessment competencies.

In additional, assessment up to now has been basing on final exams or final marks. Even with vocational subjects in pedagogical universities which are orientated to forming students’ competencies of teaching career, preparing vocational ethical values and skills. The assessment of students’ learning outcomes almost basing on the final exam that caused students’ passive thoughts, onlu crushing on revising at the very last minute. Those above became big obstacles to effectiveness of assessment as well as training quality in pedagogical universities.

Basing on those theoretical and practical rationales, I choose the issue “*Formative – approach – based assessment of pedagogical undergraduates’ learning outcomes in the subject Education*” as my doctoral dissertation.

2. Research purposes

Suggesting the solutions in order to enhance the effectiveness of pedagogical undergraduates’ learning outcome assessment in the subject Education, improving the proficiency of teaching Education in particular, the teaching process at pedagogical universities in general.

3. Subjects, objects of research

3.1. Research subjects: Undergraduates' learning outcome assessment at pedagogical universities.

3.2. Research objects: Formative – approach – based assessment of pedagogical undergraduates' learning outcomes in the subject Education and its relations with the teaching process in pedagogical universities.

4. Scientific hypotheses

The status of pedagogical undergraduates' learning outcome assessment in the subject Education now has existed some weaknesses. The basic reason is the inequivalent connection between cognition and implementation in reality. If we could set such solutions as establishing assessment plans, building the system of assignments, diversifying assessment forms, using portfolios and exploiting information technology in assessment, we would overcome the shortcomings in reality, enhancing the effectiveness of formative – approach – based learning outcome assessment in the subject Education and its function of adjustment to teaching, improving the training quality of pedagogical universities nowadays.

5. Research tasks

- Researching the theoretical basis of formative – approach – based assessment of pedagogical undergraduates' learning outcomes in the subject Education in pedagogical universities;

- Studying the status of formative – approach – based assessment of pedagogical undergraduates' learning outcomes in the subject Education, analyzing it and its root reasons;

- Proposing the solutions for formative – approach – based assessment of pedagogical undergraduates' learning outcomes in the subject Education;

- Deploying those solutions for formative – approach – based assessment of pedagogical undergraduates' learning outcomes in the subject Education.

6. Scope of research

In terms of contents: the dissertation has studied formative – approach – based assessment of pedagogical undergraduates' learning outcomes in teaching the subject Education.

In terms of studying status: the study has been implemented in six nationwide pedagogical universities.

7. Research methods

In this study, the system – synchronicity and structure – function approaches were employed to inquire theory and practice.

With these approaches, groups of research methods were categorized as

follows: document research, practice research, experimental research, and statistical research.

In addition, in the study there was a combination of non – formal interviews with the staff, the undergraduates in order to clarify some issues related to the outcomes of the surveys and the experiment.

8. Arguments

- Formative – approach – based assessment has assured learning outcome assessment in general being fully comprehensive and objective. It is to enhance the teaching process, to motivate learners for their improvements, and it is an equivalent way for pedagogical undergraduates.

- Formative – approach – based learning outcome assessment in teaching the subject Education has been implemented in the teaching process, showing in partial assessments, equivalently to characteristics of the subject Education and characteristics of assessment in pedagogical universities. These partial assessments have the close correlations and interactions with each other.

- If formative – approach – based learning outcome assessment in teaching the subject Education has been implemented focusedly in such solutions as building the assignment systems, using diversifiedly assessment methods and forms, applying portfolios to record learners' improvements, it could enhance the effectiveness, the teaching quality of Education in particular, the quality of training teachers in general.

9. New contributions of the dissertation

(1) The dissertation contributes to clarify several theoretical issues of pedagogical undergraduates' learning outcome assessment, then add and complete more the theoretical basis of higher education in general, the theories of pedagogical undergraduates' learning outcome assessment in particular.

(2) Analyzing and identifying the status of formative – approach – based learning outcome assessment, especially in teaching the subject Education in pedagogical universities. Revealing the reasons and basic difficulties in the reality which are the root basis for suggesting solutions.

(3) Proposing solutions to enhance the proficiency of formative – approach – based assessment of pedagogical undergraduates' learning outcomes in teaching the subject Education and assuring the validity of those mentioned solutions.

10. The dissertation structure

In addition to Introduction, Conclusion, Reference, Research annexes, the dissertation includes four chapters.

Chapter 1

THEORETICAL FOUNDATIONS OF FORMATIVE – APPROACH – BASED ASSESSMENT OF PEDAGOGICAL UNDERGRADUATES’ LEARNING OUTCOMES IN THE SUBJECT EDUCATION

1.1. Research history of the issue

1.1.1. The works that have researched testing, learning outcome assessment

1.1.2. The works that have researched undergraduates’ learning outcome assessment

1.1.3. The works that have researched formative – approach – based assessment of pedagogical undergraduates’ learning outcomes in the subject Education in pedagogical universities

1.2. Basic theoretical issues in learning outcome assessment at higher education level

1.2.1. Concepts of learning outcome assessment

- Assessment.
- Self assessment.
- Testing.
- Measurement.
- Learning outcomes.
- Learning outcome assessment.

1.2.2. Purposes, functions of learning outcome assessment

Purposes of learning outcome assessment.

Functions of learning outcome assessment.

With the portion of this dissertation, we give out four basic functions of formative – approach – based assessment: function of education, function of supporting, function of orientation and function of confirmation.

1.2.3. Requirements of learning outcome assessment

Requiring objectivity and equality.

Requiring inclusiveness.

Requiring systematical regularity.

Requiring potential development.

Requiring proficiency.

1.2.4. Characteristics of assessment of undergraduates’ learning outcomes

1.3. Formative – approach – based assessment of undergraduates’ learning outcomes

1.3.1. Concept of a formative approach

1.3.2. Meanings of formative – approach – based assessment of learning outcomes

1.3.3. Characteristics of formative – approach – based assessment of learning outcomes

1.3.3.1. Purposes of formative – approach – based assessment of learning outcomes are for learners and their improvement.

1.3.3.2. Methods and techniques of formative – approach – based assessment of learning outcomes are used diversedly and flexibly, suitable with circumstances, class conditions and with the learners.

1.3.3.3. Tools of formative – approach – based assessment of learning outcomes are diversified, flexible and corresponding to the chosen assessment methods.

1.3.3.4. Formative – approach – based assessment of learning outcomes show the assessment philosophy that is “for learning”, through providing positive feedbacks.

1.3.3.5. Formative – approach – based assessment of learning outcomes has an intering and strong connection with modern assessment trends and approaches.

1.3. The subject Education in pedagogical universities and its learning outcome assessment according to formative - based approach

1.4.1. The subject Education and its learning outcome assessment at pedagogical universities

Characteristics of the subject Education at pedagogical universities.

Learning outcome assessment in the subject Education at pedagogical universities.

1.4.2. Factors that influence on formative – approach – based assessment of undergraduates’ learning outcomes in the subject Education

Conclusions for chapter 1

International and national research works have revealed quite systematically general issues of students’ learning outcome assessment, different approaches of students’ learning outcome assessment, models of holding assessment activities in an institutional university. Meanwhile, the researches of proposing solutions for formative – approach – based assessment of students’ learning outcomes in this context of Vietnam higher education are important, but not yet fully deployed.

Despite of much improvement and innovation in credit – based training, current learning outcome assessment has been mainly leaned on marks and final exams, not concentrating much on students’ emotions and vocational skills. The approach that assessment is regarded as a parallel process with teaching, fully corresponding to its purposes, contents, methods, tools... is one of the most suitable research orientations in trends of credit – based training nowadays at pedagogical universities.

Chapter 2

PRACTICES OF FORMATIVE – APPROACH – BASED ASSESSMENT OF PEDAGOGICAL UNDERGRADUATES’ LEARNING OUTCOMES IN THE SUBJECT EDUCATION

2.1. General points of the study

2.1.1. Purposes

2.1.2. Objectives

The study was deployed with 668 students, and 132 lecturers at six pedagogical universities nationwide.

2.1.3. Contents of the study

- Lecturers and students’ cognitions of concept, purposes, functions and requirements of formative – approach – based assessment of pedagogical undergraduates’ learning outcomes in Education.

- Practices of formative – approach – based assessment of pedagogical undergraduates’ learning outcomes in Education.

- Major difficulties in formative – approach – based assessment of pedagogical undergraduates’ learning outcomes in Education.

2.1.4. Methods

2.1.5. Timeline

The study was deployed in the school year 2012 – 2013.

2.2. Study results

2.2.1. Status of assessment of undergraduates’ learning outcomes at pedagogical universities

2.2.2. Status of cognition of formative – approach – based assessment of pedagogical students’ learning outcomes

2.2.2.1. Cognition of formative – approach – based assessment of pedagogical students’ learning outcomes

Table 2.1. Opinions of lecturers and students of “Formative – approach – based assessment of learning outcomes”

<i>Concept</i>	<i>Students’ opinions</i>		<i>Lecturers’ opinions</i>	
	<i>Quan.</i>	<i>%</i>	<i>Quan.</i>	<i>%</i>
a. is the way lectures assess students	141	21.11	4	3.03
b. is the process of giving judgement about students’ learning.	137	20.51	9	6.82
c. is to gather information of learning and teaching, to process it and adjust learning – teaching activities in time	390	58.38	119	90.15
<i>Total</i>	<i>668</i>	<i>100</i>	<i>132</i>	<i>100</i>

For students, more than a half of those who are asked about their concepts of

formative – approach – based assessment chose the answer *c* (58.38%). This is a quite adequate concept of this term. Besides, there are a considerable number of students did not understand as enough as required. 21.11% of the whole students chose the idea *a*. The rest (41.62%) chose the idea *b*, which was an inadequate knowing, that is such a considerable number.

For lecturers, most of them (90.15%) had a right thought of formative – approach – based assessment. However, there was a number of nearly 10% of them that not have a righteous concept of formative – approach – based assessment.

Basing on the fact that a considerable number of students have not had an adequate thought of formative – approach – based assessment, we can see one of lecturers’ missions in the teaching process is to enhance learners’ awareness of formative – approach – based assessment, crucially through class activities, holding those activities as forms of formative – approach – based assessment.

2.2.2.2. Cognition of purposes of formative – approach – based assessment of pedagogical students’ learning outcomes

Table 2.2. Lecturers and students’ opinions of purposes of formative – approach – based assessment of pedagogical students’ learning outcomes

<i>Purposes</i>	<i>Students’ opinions</i>						<i>Lecturers’ opinions</i>					
	<i>Level</i>			\bar{x}	<i>Rank.</i>	<i>S</i>	<i>Level</i>			\bar{x}	<i>Rank.</i>	<i>S</i>
	V.I	Im.	N.I				V.I	Im.	N.I			
a.	201	365	102	2.148	6	0.657	6	87	39	1.75	6	0.5297
b.	311	350	7	2.455	1	0.519	120	12	0	2.91	2	0.289
c.	199	398	71	2.192	5	0.6066	39	72	21	2.14	5	0.663
d.	306	341	21	2.427	2	0.5549	126	6	0	2.95	1	0.209
e.	296	331	41	2.382	3	0.599	114	18	0	2.86	3	0.3445
f.	270	345	53	2.325	4	0.615	96	36	0	2.73	4	0.447

Notes

Purposes

a. Grading students

b. Supporting students to learn

c. Identifying students’ levels compared to requirements

d. Adjusting students’ learning

e. Adjusting lecturers’ teaching

f. Adjust, improving the program

Levels

V.I: Very important

Im.: Important

N.I: Not important

Recognizing the purposes of formative – approach – based assessment of learning outcomes, pedagogical students and lecturers did choose two highest ranking ideas that are “supporting students to learn” and “Adjusting students’ learning”. Two

last ones are “Identifying students’ levels compared to requirements” and “grading students”. The cognition of these two objects is correlative.

2.2.3. Practices of pedagogical students’ learning outcome assessment according to the formative approach in the subject Education

2.2.3.1. Status of ensuring purposes of formative – approach – based assessment of pedagogical students’ learning outcomes

Table 2.3. Lecturers’ opinions of purposes of pedagogical undergraduates’ learning outcome assessment in the subject Education

<i>Purposes</i>	<i>Level of deployment</i>						\bar{X}	<i>Rank.</i>
	<i>Very good</i>		<i>Rather good</i>		<i>Not good</i>			
	<i>SL</i>	<i>%</i>	<i>SL</i>	<i>%</i>	<i>SL</i>	<i>%</i>		
Grading students	28	21.21	79	59.85	25	18.94	2.023	2
Supporting students to learn	27	20.45	69	52.27	36	27.28	1.932	4
Identifying students’ levels compared to requirements	12	9.09	96	72.73	24	18.18	1.909	5
Adjusting students’ learning	12	9.09	105	79.54	15	11.37	1.977	3
Adjusting lecturers’ teaching	30	22.73	99	75.0	3	2.27	2.204	1
Adjusting, improving the program	12	9.09	48	36.36	72	54.44	1.545	6

The results shown in Table 2.3 get us to know the status of deploying purposes of pedagogical students’ learning outcome assessment, for more crucial, the best deployed purpose is “adjusting lecturers’ teaching” (with \bar{X} =2.204); ranking the second with \bar{X} =2.203 it is the purpose of “grading students”. The third one is the purpose of “adjusting students’ learning” with \bar{X} =1,977.

The status results had not been revelant with the study results of cognition above. The purposes of formative assessment of learning outcomes that are composed the most important (in terms of cognition) are not assured the most in the teaching process in pedagogical universities.

2.2.3.2. Status of students’ learning outcome assessment forms in the subject Education in pedagogical universities

Table 2.4. Lecturers and students’ opinions of techniques in pedagogical undergraduates’ learning outcome assessment in the subject Education

<i>Techniques</i>	<i>Students’ opinions</i>			<i>Lecturers’ opinions</i>		
	<i>Quan.</i>	<i>%</i>	<i>Rank.</i>	<i>Quan.</i>	<i>%</i>	<i>Rank.</i>
a. Finishing assignments appointed by lecturers	599	89.67	2	119	90.15	2
b. Giving solutions to certain circumstances	581	86.98	3	122	92.42	1

<i>Techniques</i>	<i>Students' opinions</i>			<i>Lecturers' opinions</i>		
	<i>Quan.</i>	<i>%</i>	<i>Rank.</i>	<i>Quan.</i>	<i>%</i>	<i>Rank.</i>
c. Raising questions for lecturers	395	59.13	6	45	34.09	12
d. Answering lecturers' questions	616	92.22	1	69	52.27	5
e. Setting up the timetable for each week, each subject	157	23.50	17	20	15.15	16
f. Giving out the representative of the group to present the group product	435	65.12	5	109	82.58	4
g. Sharing students' learning experiences to others	314	47.0	12	58	43.94	7
h. Students themselves correct their homework	343	51.35	10	49	37.12	11
i. Helping students write down their activity diaries	126	18.86	18	16	12.12	17
k. Peer assessing	262	39.22	14	62	46.97	6
l. Students' watching documentary films and writing the report	222	33.23	15	43	32.58	14
m. Helping students prepare their teamwork activities	522	78.14	4	112	84.85	3
n. Students' preparing their own syllabus	265	39.67	13	44	33.33.	13
o. Students' practicing their prepared contents of syllabus	324	48.50	11	53	40.15	9
p. Asking lecturers and other students about their difficulties in studying or revising	390	58.38	7	52	39.39	10
q. Students' doing the tests	389	58.23	8	62	46.97	6
r. Talking with each other about difficulties in the future career	347	51.95	9	29	21.97	15
s. Students' peer assessing and correcting other students' errors.	204	30.54	16	54	40.91	8

The survey results in Table 2.4 had shown that such outstanding techniques in formative – approach – based assessment of learning outcomes (more than 75% of students and lecturers chose) are: giving out the solutions for certain circumstances, finishing assignments appointed by lecturers, answering lecturers' questions in class, giving the representative to present the group product and helping students to teamwork. We can see that these are quite diverse and flexible activities, basing on multi – dimension interactive process (between students – lecturers, students with each other, students –

group, group – group). Besides, these techniques had been deployed by mobilizing learners' proactivity, under lecturers' control.

During the study, we did further interviews with several lecturers who agreed that if formative – approach – based assessment of learning outcomes could be integrated in teaching process, it would be considered as active teaching. Its forms such as processing the circumstances, questioning, discussing or presenting are chosen to use the most regularly basing on the nature of active teaching of the methods and the hope of overcoming the difficulty of a huge number of students in each class.

2.3. General overview of the status

2.3.1. Advantages

The status had shown a number of advantages including lecturers had deployed adequately according to Regulations of colleges, universities in credit – based training in terms of time, requirements, partial marks and diligence marks; lecturers' cognition is quite good; basic purposes and requirements of formative – approach – based assessment were assured in a rather good level; lecturers had a high attempt to build ways of gathering information and providing positive feedbacks for learners; students had a good point of view of formative – approach – based assessment in teaching Education, had an interest in this subject and in forms of formative – approach – based assessment held in classroom.

2.3.2. Disadvantages

Besides, this status had some basic difficulties. We had collected data shown in the table below.

Table 2.5. Difficulties in pedagogical graduates' learning outcome assessment in the subject Education according to formative –based approach

<i>Difficulties</i>	<i>Students' opinions</i>			<i>Lecturers' opinions</i>		
	<i>Quan.</i>	<i>%</i>	<i>Rank.</i>	<i>Quan.</i>	<i>%</i>	<i>Rank.</i>
a. Contents of classroom activities are dispersed, hardly focus on the main ones	403	60.33	1	12	9.09	6
b. Lecturers have to spend more time, energy on editing assignments and questions	292	43.71	4	99	75.0	1
c. Lack of techniques and material conditions	223	33.38	8	10	7.58	7
d. Giving marks takes a lot of time and energy	225	33.68	7	93	70.45	2
e. Difficult in identifying scales, criterion for each kind of exercises and questions	273	40.87	6	99	75.0	1
f. There is not yet a bank of various questions and exercises	283	42.36	5	60	45.45	4
g. Students usually be absent or uninterested	352	52.69	2	24	18.18	5
h. The number of students in each class is overloaded	292	43.71	4	69	52.27	3
k. Students not acknowledge about ways of processing the gathered information	309	46.26	3	7	5.30	8

For lecturers' opinions, the biggest difficulty is "identifying scales, criteria for each kind of assignments, questions" and "lecturers have to spend more time, energy on editing assignments and questions" (both ideas chosen by 74% of the whole asked lecturers). The next ideas ranking are "giving marks takes a lot of time and energy" (70.45%) and "a number of students is overloaded in each class" (chosen by 52.27%).

For students' opinions, the biggest difficulty is "contents of activities are dispersed, hardly focus on the main ones" (60.33% of the whole students). The next ideas ranking are "students usually be absent or uninterested" (52.69%) and "students not acknowledge about ways of processing the gathered information" (chosen by 46.26%).

These results above are quite relevant with the mentioned study of instructing students to process information in lecturers' feedbacks in classroom. Lecturers are reluctant to provide feedbacks and help students process the information that is one of the basic difficulties to students in formative – approach – based assessment of learning outcomes.

2.3.3. Reasons of the status

- In terms of subjectivity: such reasons as lecturers' time and energy (editing assignments, building up questions, giving marks, setting up criteria), lecturers' assessment competencies.

- In terms of objectivity: such reasons as learners' awareness and interest, the used assignments and bank of questions, classroom conditions (the number of students per class, material bases of classroom) have considerable influence on formative – approach – based assessment of students' learning outcomes in the subject Education.

Conclusions for chapter 2

In terms of cognition, lecturers had quite good recognition of formative – approach – based assessment of learning outcomes. However, students had not; that was caused by some misunderstandings of characteristics and nature of this issue. So that besides the mentioned solutions, lecturers need to help students enhance the right awareness of formative – approach – based assessment of learning outcomes. The most effective way to get this is simultaneously through the deployment facts. The way students get directly in classroom activities, experiencing assessment is the efficient solution of improving their cognition.

The status of deployment had shown the irrelevant connection between lecturers' recognition and their implementation. This is one of the main reasons for the fact that formative – approach – based assessment of learning outcomes

in the subject Education has not gained the expectating purposes. Knowing this is the main point for the author of this dissertation proposing solutions and resolving the causes.

Eliciting evidence and providing feedbacks are two quite typical points of formative – approach – based assessment of learning outcomes. Lecturers have been eliciting evidence through questionings, discussing, doing examinations. That work had been mainly done by traditional methods. Active modern assessment methods (integrated in teaching methods) have not been promoted thoroughly. Then lecturers have been providing feedbacks for their students through answering learners’ questions, giving comments to learners’ products and through pedagogical observation.

There are some advantages in deploying formative – approach – based assessment of learning outcomes in the subject Education at pedagogical universities, basically from the regulations of credit – based training, from the quite good acknowledgement of lecturers and students’ high interest. However, there are also a number of difficulties in terms of objectivity and subjectivity.

Chapter 3

SOLUTIONS FOR FORMATIVE – APPROACH – BASED ASSESSMENT OF PEDAGOGICAL UNDERGRADUATES’ LEARNING OUTCOMES IN THE SUBJECT EDUCATION

3.1. Principles for suggesting solutions

3.1.1. Principle of ensuring the teaching purposes in the subject Education

3.1.2. Principle of ensuring the training reality in pedagogical universities

3.1.3 Principle of consolidating the validity of mentioned solutions

3.1.4. Principle of assuring the flexibility of formative – approach – based assessment of learning outcomes

3.1.5. Principle of activating pedagogical students’ learning activities

3.2. Solutions of formative – approach – based assessment of pedagogical students’ learning outcomes in the subject Education

3.2.1. Setting up assessment plans to measure learners’ achievement amount compared to learning targets in the teaching process of the subject Education

❖ *Aims:* to give out ways to set up an assessment plan, helping students identify steps to implementation assessment stages.

❖ *Contents:* A general assessment plan includes 4 periods

* *Period 1: Identifying purposes that need measuring and assessing in each learning unit.*

There are three detailed steps:

- Analyzing and dividing contents of the subject Education into in – need – equipped knowledge units.
- Identifying a system of assessment purposes.
- Building up assessment criteria.

*** *Period 2: Using assessment methods to gather information.***

This period includes three steps:

- Analyzing the objects, devices and conditions in reality.
- Choosing assessment methods in order to gather information.
- Gathering information.

*** *Period 3: Processing the gathered information***

This period includes two steps:

- Comparing learners' performance to the proceeding purposes and criteria.
- Analyzing and judging the collected information.

*** *Period 4: Adjusting teaching and learning activities.***

This period is including:

- Extracting experience in teaching.
- Supervising students to adjust their learning.

3.2.2. Building the system of assignments correlated the learning contents in the subject Education

❖ ***Aims:*** To provide lecturers for an assessment tool, being a fulcrum to build and design classroom activities. This solution also leads to logic and consolidation of assessment activities and teaching.

❖ ***Contents:*** We build up a system of assignments, tasks, questions, circumstances basing on available materials and crucial contents for each skill that students need to practice.

❖ ***Ways to implementation:*** The illustration of this solution is the pedagogical experiment of group skills of teaching competencies. Firstly, lecturers need to identify the in – need – complete targets in the practice week of this group skills. Then lecturers identify kinds of assignments to help students to finish those purposes.

3.2.3. Using diversedly methods and forms in partial assessment of undergraduates' learning outcomes in the subject Education

❖ ***Aims:*** To design and use diversedly assessment methods and forms in teaching Education, getting them to become ways to collect information for learning outcome assessment according to the formative approach.

❖ ***Contents:*** Identifying methods and forms basing on teaching purposes and assessment purposes and contents.

❖ *Ways of implementation:* In the scope of the dissertation, we had designed such techniques as doing assignments appointed by lecturers, processing certain circumstances, raising questions, setting up the timetable, presenting group products, sharing learners' experience, correcting the homework, writing the activity diaries, peer assessing, watching documentary films and writing reports, teamwork, preparing and piloting their own syllabus...

3.2.4. Promoting portfolios to measure students' improvement in teaching the subject Education

❖ *Aims:* To identify ways to establish portfolios, collecting materials in teaching and assessment, being a point for assessment as well as consolidating learners' positive emotions.

❖ *Contents:* Mentioned portfolios of achievement which includes assignments and products through that students show their potential and their gain.

❖ *Ways of implementation:* The main contents of this solution have been divided into three parts:

- Designing the structure of portfolios in Education.
- Deploying learning missions in Education and collecting products into a portfolio.
- Processing information gained from assessment portfolios.

3.2.5. Establishing the feedback system of learning outcomes through E-learning and information technology devices

❖ *Aims:* To exploit with the maximum level of the advantages of information technology in teaching. Overcoming lackages of classroom.

❖ *Contents:* Lecturers need to consider classroom conditions and lesson purposes and contents. Most of activities are held with the support of softwares, downloaders, projectors. Lecturers use information technology to administer and store students' portfolios.

Conclusions for chapter 3

We have proposed several solutions to improve formative – approach – based assessment of learning outcomes in teaching Education, including setting up assessment plans, building a system of missions and assignments correlating learning contents, using diversedly assessment forms and methods of formative – approach – based assessment of learning outcomes, promoting portfolios and applying information technology in assessment process. Each of these solutions has their own advantages and missions, besides, they exist in a system and have interactive correlations.

Chapter 4
PEDAGOGICAL EXPERIMENT

4.1. Implementation of experiment

4.1.1. Aims

4.1.2. Subjects and time for experiment

4.1.3. Research methods in experiment

4.1.4. Contents of experiment

4.2. Experiment result analysis

4.2.1. Criteria of students' interest, the factor of activating learning and assessment, self - assessment

Students' interest of learning

Table 4.1. Students' interest of the subject Education and formative assessment forms in two experiment rounds

Contents	Level	Round 1				Round 2			
		ExG GDH.06		EnG GDH.08		ExG GDH.07		EnG GDH.09	
		Quan.	%	Quan.	%	Quan.	%	Quan.	%
To the subject Education	Very interested	39	61.9	20	32.79	40	59.7	33	47.14
	Not very interested	24	38.1	21	34.42	27	40.3	32	45.71
	Not interested	0	0	20	32.79	0	0	5	7.15
	Total	63	100	61	100	67	100	70	100
	\bar{X}	2.619		2.0		2.597		2.40	
	S	0.4901		0.853		0.4773		0.744	
To formative assessment activities	Very interested	58	92.06	40	65.57	61	91.04	52	74.29
	Not very interested	5	7.94	19	31.15	6	6	13	18.57
	Not interested	0	0	2	3.28	0	0	5	7.14
	Total	63	100	61	100	67	100	70	100
	\bar{X}	2.920		2.623		2.9104		2.6714	
	S	0.279		0.772		0.346		0.681	

ExG: Experimental group

EnG: Encounter group

In terms of interest in learning Education: Experimental results in Round 1, most of ExG students “very interested in the subject” (61.9%), there was no students who chose “not interested”. Meanwhile, EnG had a little large dispersing: the number of students who chose “very interested” as much as the number of students who chose “not interested” (32.79% of the group); 21 students chose “not very interested”, which occupied about 1/5 total students of EnG. That had been shown more through the index S ($s_{DC1} = 0.853$), clearly higher than that index of ExG ($s_{TN1} = 0.4906$).

Experimental results in Round 2 had shown that, most of students in ExG “very interested” in Education (59.7%), there was no students who chose “not interested”. Meanwhile, EnG had a little lagre dispersing: 33 students chose “very interested” (47.14%), 32 students cho “not very interested” (45.71% the whole); 5 students chose “not interested” in Education. That had been shown more through the index S ($S_{DC2} = 0.744$), clearly higher than that index of ExG ($S_{TN2} = 0.4773$).

The index T-test comparing the difference between ExG and EnG about levels of interest in Education in two rounds gave us the result $p = 0.0012$ (smaller than $\alpha = 0.05$), that mean there was a clear difference between ExG and EnG, between two experimental rounds, and this difference made sense in terms of statistics (Annexes 13.1).

In terms of forms of formative – approach – based assessment of learning outcomes: Experimental results in Round 1 had shown there were 92.06% of the students in ExG chose “very interested” in classroom activities, there was no students who chose “not interested”. 40 students of EnG were “very interested” (65.57%); 19 students chose “not very interested” (31.15% of the total); 3.28% of them composed that “not interested” in the activities. The ExG had a high level of concentration, its ideas had higher reliability than EnG, more crucially through the index S ($S_{TN1} = 0.279$) smaller than that index of EnG ($S_{DC1} = 0.772$).

Experimental results in Round 2 had shown there were more than 90% of the students in ExG chose “very interested” in classroom activities, there was no students who chose “not interested”. 52 students of EnG were “very interested” (74.29%); 13 students chose “not very interested” (18.57% of the total); 7.14% of them composed that “not interested” in the activities. The ExG had a high level of concentration, its ideas had higher reliability than EnG, more crucially through the index S ($S_{TN2} = 0.346$) smaller than that index of EnG ($S_{DC2} = 0.681$).

The index T-test comparing the difference between ExG and EnG about levels of interest in classroom activities in two rounds gave us the result $p = 0.043$ (smaller than $\alpha = 0.05$), that mean there was a clear difference between ExG and EnG, between two experimental rounds, and this difference made sense in terms of statistics (Annexes 13.1).

In terms of students’ active learning

**Table 4.2. Students' experiences of learning ways in Education course
(quoted in their group portfolios)**

<i>Date</i>	<i>Content/ Lesson</i>	<i>Teamwork/ independent work skills</i>	<i>Working/ scientific research methods</i>	<i>Individual experience</i>
29/11/ 2013	Skills of identifying and giving out solutions for circumstances in general education	<ul style="list-style-type: none"> - Give out individual opinions - Listen to others' opinions - Extract experience for ourselves - Representation skills 	<ul style="list-style-type: none"> - Doing jobs focusedly, being seriousness and scientific 	<ul style="list-style-type: none"> - Get more experience of teamwork - In order to get proficiency, we need knowledge, connection with reality, individual resolving skills, to be confident and creative for a successful presentation.
06/12/ 2013	Group of teaching skills	<ul style="list-style-type: none"> - Several groups had combination in activities got by their members - Those groups did great job. 	<ul style="list-style-type: none"> - Groups used many methods: presentation, questionings, demonstrating (images, models, illustrations ...) 	<ul style="list-style-type: none"> - Get more experience in teaching - Experience of presentation
13/12/ 2013	Skills of setting up educational plans	<ul style="list-style-type: none"> - Need to have a clear work division amongst members 	<ul style="list-style-type: none"> - Fostering teamworking methods - Ways to arrange the issues in presentation 	Through this lesson, I did get more useful knowledge of skills of teaching, giving myself the career luggage for the future
20/12/ 2013	Individual learning diaries	<ul style="list-style-type: none"> - Brief, scientific - Honest in exams 		<ul style="list-style-type: none"> - Be more active in learning - The lesson was very useful and meaningful - I did get more logical thinking, time management skill, presentation skill.

The above table had shown students' real sharing of skills and their feelings of the lessons, in terms of contents and their application after the course. These were recorded right after each lesson, referring students' proactivity during and after the experiment.

Students' self-assessment

Table 4.3. Students' opinions of their changes in the self-study process after the pedagogical experiment

Level	Round 1				Round 2			
	ExG (GDH.06)		EnG (GDH.08)		ExG (GDH.07)		EnG (GDH.09)	
	Quan.	%	Quan.	%	Quan.	%	Quan.	%
-Much better	13	20.63	2	3.28	15	22.38	5	7.14
-A little more	43	68.26	24	39.34	47	70.16	32	45.72
-Not yet changed	7	11.11	22	36.07	5	7.46	23	32.86
-A little worse	0	0	12	19.67	0	0	10	14.28
-Much worse	0	0	1	1.64	0	0	0	0
Total	63	100	61	100	67	100	70	100
\bar{X}	4.0952		3.2295		4.1492		3.4571	
S	0.6385		0.8612		0.5437		0.7246	

Experiment results in Round 1 showed that, for ExG, nearly 90% of the students gave the answers of their self-study ability "much better than before" and "a little more" (56 students); 7 students (11.11%) chose "not yet changed", there was no students saying that their selfstudy had been worsening. Meanwhile, the EnG had a great dispersion, 42.62% of the students said their self-study "much better" và "a little more improved", about 1/3 of them chose "not yet changed" and 13 students (21.31% of them) said their self – study ability "a little worse" và "much worse", which is a considerable number.

Experiment results in Round 2 showed that, for ExG, more than 90% of the students gave the answers of their self-study ability "much better than before" and "a little more" (62 students); 5 students (7.46%) chose "not yet changed", there was no students saying that their selfstudy had been worsening. Meanwhile, the EnG had a considerable dispersion, 52.86% of the students said their self-study "much better" và "a little more improved", about 1/3 of them chose "not yet changed" and 10 students (14.28% of them) said their self – study ability "a little worse" và "much worse".

The index T-test comparing the difference between ExG and EnG about changes of students' self – study ability after two rounds gave us the result $p = 0.0357$ (smaller than $\alpha = 0.05$), that mean there was a clear difference between ExG and EnG, between two experimental rounds, and this difference made sense

in terms of statistics (Annexes 13.6). Those statistic numbers show that formative assessment deployed with forms of class activities has great influence on self – study as well as students’ improvement of holding their own awareness.

4.2.2. Criteria of students’ cognition

Table 4.4. Students’ cognition of the role of activity diaries in learning Education in two experimental rounds

Level	Round 1				Round 2			
	ExG (GDH.06)		EnG (GDH.08)		ExG (GDH.07)		EnG (GDH.09)	
	Quan.	%	Quan.	%	Quan.	%	Quan.	%
-Very important	29	46.03	1	1.64	32	86.71	2	2.86
-Important	27	42.86	5	8.2	29	4.33	11	15.71
-Confusing	7	11.11	13	21.31	6	8.96	16	22.86
-Not yet important	0	0	34	55.74	0	0	34	48.57
-Not important	0	0	8	13.11	0	0	7	10.0
Total	63	100	61	100	67	100	70	100
\bar{X}	4.3492		2.295		4.388		2.5286	
S	0.6605		0.9735		0.5312		0.8291	

Experiment results in Round 1 showed that, students in ExG said that the implementation of activity diaries is “Very important” and “Important”, occupying 88.89% (56 students); the number in EnG is 9.84% and 6 students. The confused students in ExG occupied 11.11% (7 students), just as a half as ones in EnG (21.31%, 13 students). None of students in ExG chose “not yet important” and “not important”, meanwhile most of students in EnG chose these two choices (68.85%, 42 students). The study of cognition of ExG had $S_{TN1} = 0.6605$; smaller than the index in EnG ($S_{DC1} = 0.9735$). This showed the ExG had more concentration and better reliability, meanwhile the amplitude in cognition study of EnG was quite large, the answers were dispersed in five levels while students being asked.

Experiment results in Round 2 showed that, students in ExG said that the implementation of activity diaries is “Very important” and “Important”, occupying 91.04% (61 students); the number in EnG is 18.57% and 13 students. The confused students in ExG occupied 8.96% (6 students), just as nearly a half as ones in EnG (22.86%, 16 students). None of students in ExG chose “not yet important” and “not important”, meanwhile most of students in EnG chose these two choices (58.57%, 41 students). The study of cognition of ExG had $S_{TN2} = 0.5312$; smaller than the index in EnG ($S_{DC2} = 0.8291$). This showed the ExG had more concentration and better reliability, meanwhile the amplitude in cognition study of EnG was quite large, the answers were dispersed in five levels.

The index T-test comparing the difference between ExG and EnG about students' cognition of importance in implementing activity diaries in teaching Education after two rounds gave us the result $p = 0.047$ (smaller than $\alpha = 0.05$), that mean there was a clear difference between ExG and EnG, between two experimental rounds, and this difference made sense in terms of statistics (Annexes 13.9).

4.2.3. In terms of learning outcomes (grades

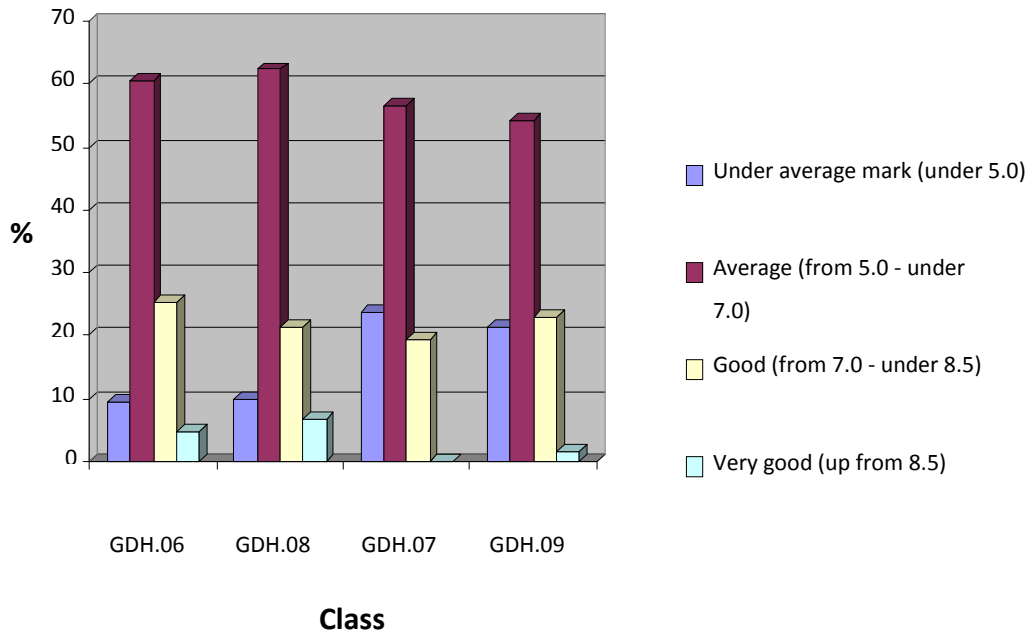


Figure 4.1. Distribution of students' input marks in two experimental rounds

As input results in Round 1, we could see the dregs of ExG and EnG were rather balance: the group mark of under average was about 16 – 17%; the one of average was 58 – 59%; the one of good was 22%; and the one of very good points was 2 – 3% of the total students.

The average point of both ExG and EnG: $\bar{X}_{TN} = 5.696$; and $\bar{X}_{BC} = 5.782$

The standard deviation on the ExG was $S_{TN} = 1.3774$; The standard deviation on the EnG was $S_{BC} = 1.3813$. This showed that input results of both groups are rather evenly, the difference was not considerable.

Table 4.5. Students' output marks in two experimental rounds

Mark	Round 1				Round 2			
	ExG (GDH.06)		EnG (GDH.08)		ExG (GDH.07)		EnG (GDH.09)	
	f_i	Total	f_i	Total	f_i	Total	f_i	Total
2.0	0	0	0	0	0	0	0	0
3.0	0	0	0	0	0	0	1	3
4.0	2	8	4	16	2	8	3	12

Mark	Round 1				Round 2			
	ExG (GDH.06)		EnG (GDH.08)		ExG (GDH.07)		EnG (GDH.09)	
	f_i	Total	f_i	Total	f_i	Total	f_i	Total
4.5	0	0	0	0	0	0	0	0
5.0	3	15	9	45	3	15	20	100
5.5	0	0	6	33	0	0	0	0
6.0	9	54	13	78	14	84	23	138
6.5	6	39	4	26	0	0	0	0
7.0	13	91	8	56	28	196	17	119
7.5	11	82.5	6	45	0	0	0	0
8.0	12	96	7	56	19	152	5	40
8.5	3	25.5	2	17	0	0	0	0
9.0	4	36	2	18	1	9	1	9
Total Σ	63	447	61	390	67	464	70	421
\bar{X}	7.095		6.393		6.925		6.014	
S	1.12		1.28		1.005		1.123	

Output results of Round 1: The average point of ExG $\bar{X}_{TN1} = 7.095$, clearly higher than the one of EnG $\bar{X}_{DC1} = 6.393$. The ExG had a standard deviation $S_{TN1} = 1.12$, smaller than the index of EnG (độ lệch chuẩn $S_{DC1} = 1.28$). This had shown that ExG had higher reliability, more concentration and its students had better learning skills.

Output results of Round 2: The average point of ExG $\bar{X}_{TN2} = 6.925$, clearly much higher than the one of EnG $\bar{X}_{DC2} = 6.014$. The average point of both groups had greater improvement than before the experiment. The ExG had a standard deviation $S_{TN2} = 1.005$, smaller than the index of EnG ($S_{DC2} = 1.123$). This had shown that ExG had higher reliability, more concentration. The mentioned solutions once again assured their feasibility, validity and their meaning to formative – approach – based assessment of students' learning outcomes in teaching Education in pedagogical universities.

The index T-test comparing the difference between ExG and EnG about students' grades after two rounds gave us the result $p = 0.0013$ (smaller than $\alpha = 0.05$), that mean there was a clear difference between ExG and EnG, between two experimental rounds, and this difference made sense in terms of statistics (Annexes 13.11).

Conclusions for chapter 4

We had implemented an experiment in two groups of students that were quite evenly to each other in terms of quantity and learning capacity. After two rounds of pedagogical experiment, we got statistics and were aware of the basic difference between these two groups in terms of marks, cognition, interest, self assessment and learning proactivity.

The experimental group had higher grades, more concentrated mark dispersation than the encounter group's. The index of standard deviation in the experiment had shown that the points of experimental groups better dispersed. With those results above we could assure that the hypothesis of experiment were adequate, moreover, many other faces of reality were revealed. The mentioned solutions including setting up assessment plans, building a system of assignments correlated to teaching purposes and contents, using diversedly formative assessment forms and applying information technology in assessment. Those were shown through the statistical results their validity, feasibility and high reliability.

CONCLUSION AND RECOMMENDATION

CONCLUSION

In terms of theory, national and international works have contributed a hugh base of theories of assessment and general issues of assessment. The changes and improvements set by credit – based training in pedagogical universities put forwards new requirements of assessment of students' learning outcomes.

In the scope of the dissertation, we have given out the concept of formative – approach – based assessment of undergraduates' learning outcomes. Then we have identified its characteristics in such terms as purposes, contents, methods, tools, process and its connections with other concerned definitions.

In terms of practice, pedagogical lecturers and students did not unified with each other about opinions of formative – approach – based assessment of undergraduates' learning outcomes. There is not yet good unification between lecturers' cognition and their deployment of assessment purposes. Lecturers have assured quite well functions, requirements of assessment, however, that job not yet diversedly and flexibly.

There were a certain number of advantages in assessing students' learning outcomes according to formative approach, but there were also some difficulties.

Basing on analyzing reasons of status, we have proposed such solutions as: Setting up an assessment plan in teaching Education, Building a system of exercises and assignments, Using diversedly methods and forms in partial assessment, Using portfolios to record students' learning improvement and Establishing a system of feedbacks of students' learning outcomes in Education through E-learning and technology devices. Pedagogical experiment has showed considerable changes in learning interest, career emotions, self – assessment, cognition and students' marks, proving the feasibility and validity of mentioned solutions for formative – approach – based assessment of undergraduates' learning outcomes.

RECOMMENDATION

For Ministry of Education and Training and pedagogical universities

Promote and support those undertakings of innovating educational assessment, leading to develop learners' competences, strengthening lecturers' assessment competence. There are several ways to deploy this: give more requirements of lecturers' assessment competence, hold more training workshops on teachers' assessment skills, equip them with modern update approaches of assessment and give them more chances to apply those in reality.

Utilitize the class system and modern teaching technique devices which are regarded as an essential factor for formative – approach – based assessment.

Get up – to – date changes of credit – based training correlating to training characteristics and our students. For example, there are some additional regulations of rankings, numbers of credits, courses of apparence. Those all involve in formative – approach – based assessment of students' learning outcomes, and requiring equivalent changes of assessment.

Empower lecturers in holding class activities in charge of forms of formative – approach – based assessment, in formally using information gathered after class assessment for giving out class decisions or having their certain markings in learners' partial marks in that course.

For lecturers at pedagogical universities

Improve their professional personalities, fostering vocational skills, especially assessment skills and the skills of holding assessment forms of students' learning outcomes. Showing dimensions of formative – approach – based assessment (purposes, contents, methods, requirements) is the most effective way to enhance students' awareness of this kind of assessment.

Innovate their teaching methods, integrating formative – approach – based assessment in their teaching process, crucially with the system of

mentioned solutions and their illustration in the dissertation.

Explain to students the issues of teaching and class activities, guiding them to exploit and process the information gained from those activities (using learning materials, notebooks, portfolios, activity diaries).

Gather information of learners' improvement in the whole learning process by diverse flexible methods. Exploit in the maximum level five kinds of partial marks regarded in Point 19 Regulation of training in colleges, universities in credit – based training. Then diversifying class activities, give learners more chances to show their abilities, improving their partial grades and their learning outcomes.

Use diversely ways of providing feedbacks for learners, orientating to individualizing their contents, helping students to recognize errors, continuously perfect themselves, adjust their learning in time. Support students to process the information of class feedbacks. Give learners more chances to get in assessment (self-assessment, peer assessment, assessing lecturers), the lecturers not only get more informative feedbacks but also for students experiencing and learning assessment through practice.

For pedagogical undergraduates

Improve their self - consciousness in learning and self – study of the subject Education basing on the awareness of this subject that is one of the most important occupational courses in pedagogical universities, performing adequately professional characteristics of teaching career in terms of knowledge, skills and emotions.

Engage in class activities, showing their seriousness and responsibility in teamwork. Raise questions for lecturers and other students, actively engage in lessons building the portfolios, exploiting this material as a learning and research tool.

Enhance their skills of self – assessment, skills of exploiting and processing information for self – assessment, adjusting learning pace and learning style.

LIST OF PAPERS CONCERN THE THESIS

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