

# The Impact of Formative Assessment on Students' Academic Achievement

## A Case Study of English Students of Faculty of Humanities, Andalas University, Padang, Indonesia

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### ABSTRACT

This study identified the effect of formative assessment on a group of Indonesian students undertaking the class "Introduction to Australian Culture." The study also attempts to identify the students' perceptions and attitudes towards applying this type of assessment in the class. This eight-week study employed the assessment of a class of 79 subjects. These students were placed into small groups of five and assigned to study Australian culture and create a short video on the topic. There is a relatively significant increase in the students' scores in the second cycle than those of the first cycle. However, there is a decrease in the students' scores on attitudes and behaviors. It employed a questionnaire and observations to evaluate the students' attitudes towards assessment for learning. The qualitative and quantitative analysis of the students' responses shows their positive attitudes towards this assessment type. This type of assessment can be an alternative way of improving assessment for learning practice and to make it more effective in an Indonesian setting.

**Keywords:** *formative assessment, attitude, feedback, learning strategies, Australian culture*

## I. INTRODUCTION

Some scholars have argued about the effectiveness of formative assessment and summative assessment. Scholars report that many educators have mainly used summative assessments to measure learning outcomes for quite a long time. Scholars such as Bloom (1971), Black & William (1998), Black (2000), Shepard (2000), Brophy (2004), Heritage et al. (2009), Rabinowitz (2010), and Herman (2013) have begun to use not only summative assessment but also formative assessments to improve the learning process. They claim that assessment for learning (formative assessment) can improve the learning process and modify students' learning. For them, this assessment works because it continuously runs through specific feedback after each learning step. By so doing, the students immediately know their strengths and weaknesses in doing specific tasks. In applying this evaluation, it is not a one and for all assessment. It fundamentally guides the teacher and the students to gain the best achievement through multiple inputs and feedback.

O'Malley & Pierce (1996) and Hattie & Timperley (2007) are among scholars who stress the effect of feedback on learning. Feedback should be performed right after the action. Feedback, which can be rubrics, discussion, evaluation, and diary, helps students monitor their individual and group work on the right track and upgrade their spirit to reach the learning outcome based on the feedback received. Regarding the effectiveness of formative assessment, this study explores the effect of formative assessment for learning in improving English students' academic achievement studying Australian culture at Andalas University, Padang Indonesia, in the academic year 2019-2020. This study's findings will enhance learning English, particularly English-related culture in the Indonesian context.

### 1.1 Statement of the Problem

This study investigates the effect of assessment for learning culture on English students taking Introduction to Australian culture. The study also attempts to identify the learners' perceptions and attitudes towards this type of assessment.

## 1.2 Need for the study

In this experiment, there is a need to decide whether or not implementing assessment for learning with its timely feedback in an Indonesian setting will enhance the learning process and make the learning experience on Australian culture more interesting and more fruitful.

## 1.3 Questions of the Study

The study aims to answer the following research questions:

- 1) To what extent does formative assessment affect English learners' achievement in studying Australian culture?
- 2) What are the learners' attitudes towards formative assessment?

## 1.4 Hypothesis of the Study

- 1) Formative Assessment has a significant effect on learners' achievement in Australian culture studies.
- 2) Culture learners have negative attitudes towards assessment for learning and its procedures.

## 2. LITERATURE REVIEW

### 2.1 Assessment for Learning

Teachers and students use assessment for learning during instruction that provides feedback to adjust ongoing teaching and learn to improve class goals (Sadler, 1989). Pophan (2008) suggests that assessment for learning is a planned process through which teachers take advantage of students' process to modify their ongoing instructional procedures or used by students to adjust their current learning strategies. The students do not have to wait until the process ends to know that there is something wrong with their learning process. Instead, it allows them to know that they need to do something along the way to achieve their intended learning goals. In practice, assessment for learning usually ends with a summative assessment. An assessment for learning differs from a summative assessment in which summative one is generally concerned with summarizing students' achievement status and is widely used to report students' last status of a certification (Sadler, 1989).

Furthermore, Sadler says that the summative assessment does not usually influence learning, although it often influences decisions. It may cause significant educational consequences for the students. The summative assessment function is to determine whether or not a student has reached a certain level of competence after a period of learning.

Today, more educators show their increasing awareness of the weak points of summative assessment and further recognize the formative assessment's effectiveness. Herman (2013) claims that

students achieved high academic standards after the teachers apply assessment for learning. Assessment for learning is practical when teachers observe and note the process results and use them to measure the students' progress and decide appropriate steps to help them arrive at the lesson's objective. Teachers use the data gathered through the process to decide appropriate steps to solve the students' problems.

Practically, assessment for learning is not a sole tool in the process of learning. However, it should incorporate other assessments as an integrated part of the teaching and learning process. Formative assessment includes classroom interaction, questioning, structured classroom activities, and feedback. Sadler (1989) believes that it helps students bridge the learning gaps while actively engaging in the assessment process through self-and peer- assessment. Black & William (1999) argue that teachers can gather data from other types of tests and school administration to identify learning needs and reformulate teaching approaches in its implementation. William and Leahy (2007) claim that an assessment for learning can only work when applied in line with enough information to benefit the students in the process. Shepard (2000) suggests that this assessment's effectiveness lies in its immediate responses to the students' problems and their ability to adjust and form new learning.

### 2.2 Collecting Data Assessment for Learning

Griffin (2007) suggests that teachers can obtain learning data through learners' spoken words, writings, and actions. Griffin reveals that data can come from various methods during the learning process, whether they are planned or obtained spontaneously during observations of students' behavior, written assignments, book presentations, teacher-student interactions, and interactions among peers. In some cases, teachers gather data through formal methods, e.g., through specifically designed tests for improving learning purposes.

### 2.3 Feedback in Assessment for Learning

Sadler (1989) believes that assessment for learning should implement appropriate feedback. For him, feedback provides students with information about their learning process at a particular stage and things they need to do before they continue their learning. According to Heritage (2013), teachers prepare feedback for students' learning status based on assessment evidence while learning. The feedback adjusts teaching and provides instruction to the students about how they can learn. It works if the teachers' methodological responses and direct feedback provision from the evidence generated during learning. When providing feedback (Butler, 1988; Heritage, 2013; Griffin 2007) have reminded teachers not to rely only on markings. They believe that marking is not entirely effective in improving students' performance because they believe in the marks rather than their performance

quality. Comments and discussions can be more effective in making their performance better.

### **2.4 Assessment for Learning Strategies**

Different scholars proposed different strategies for the assessment of learning. However, this experiment applied the strategies proposed by Sadler (1989). He calls it "Assessment for Constructive or Formative purposes," designed to fulfill students' needs to increase their motivation and achievement.

### **2.5 Cycles of Assessment for Learning**

William and Thompson (2007) propose three cycles in assessment for learning based on instruction duration.

- 1) Short cycle is performed minute-by-minute or day-by-day assessment concentrating on student learning within and between lessons.
- 2) Medium cycle is performed within and between instructional units covering a one- to four-week instruction period.
- 3) Long cycle usually is performed between four weeks and one year.

## **3. METHODOLOGY**

### **3.1 Participants**

This study's subjects are English students who take Introduction to the Australian Culture course at Andalas University. The class is composed of 79 students. They are all Indonesians and 2 Madagascan between 17 to 19 years at the time of the experiment. They have studied English for a minimum of six years at schools and three terms at the university. There are two parallel classes this year.

### **3.2 The Setting**

The study was conducted in the second semester of the academic year 2019-20. There are two parallel classes of Introduction to Australian Culture (Class A and B). Class A happens to be involved in this research. The study begins in the fifth week of the second semester of 2019-20. The class that accommodates 80+ students has educational aids, laptops, whiteboards, a control desk for the lecturer, and regular seats and desks.

### **3.3 Teaching Materials**

The teaching material involves some textbooks, educational videos, articles, and books of guidance. The materials aim to give the students the language, the information, and the skills they need to start their culture course through an English major. They usually involve essential vocabulary in culture, reading authentic material related to Australian culture, speaking, and writing skills.

### **3.4 Procedure**

The learning assessment uses portfolios, classroom observations, class exercises, quizzes, learning notebooks, and online communication (email and WA group). The teacher distributed learning notebooks once a week, and their content involves a summary of a week's study of vocabulary, a plan for the next week, and suggestions to the teacher typically. After marking in the forms of comments and notes, the teacher returns the notebooks to the students. The teacher recorded the students' progress after performing regular classroom observation. It was to make sure that the students' progress towards achieving the set objectives, participating in-class activities, and knowing how to solve their problems and difficulties during learning. Then he communicated with the students in time for solving the problems observed in class. The teacher applied for group work throughout the class, and tests were conducted right after each unit to assess the students' mastery of the materials.

### **3.5 Final Stage of the Experiment**

After the assessment for learning, principles are implemented and used with the experimental group. The students sit respectively for a written cognitive test on class-related materials and produce a group video on an aspect of Australian culture. The test measures the students' performance in mastering class materials. Besides, they also fill in a questionnaire that aims to collect information about their attitudes and opinions regarding learning assessment. The data are processed and the results obtained are summarized in the tables below.

## 4. RESULTS

The following tables show the students' scores in the experiment.

**Table 1** Students' Material Mastery Test Score

Subject	Cycle 1	Cycle 2	Subject	Cycle 1	Cycle 2
1	45	80	41	68	84
2	60	84	42	68	80
3	72	80	43	72	76
4	64	88	44	64	84
5	56	92	45	52	80
6	68	84	46	72	84
7	60	88	47	68	68
8	-	92	48	-	80
9	-	-	49	64	72
10	60	76	50	64	84
11	-	68	51	64	84
12	-	76	52	-	84
13	68	92	53	72	84
14	60	80	54	68	88
15	65	72	55	60	88
16	-	68	56	68	72
17	60	80	57	-	80
18	64	84	58	68	76
19	-	84	59	60	88
20	52	80	60	64	92
21	68	72	61	64	80
22	68	88	62	48	80
23	56	88	63	72	76
24	80	76	64	68	80
25	68	68	65	78	88
26	68	72	66	-	-
27	60	76	67	-	-
28	56	76	68	-	72
29	72	84	69	48	80
30	48	72	70	60	72
31	68	84	71	-	80
32	-	80	72	56	84
33	72	80	73	-	68
34	72	80	74	56	84
35	48	80	75	64	84
36	60	84	76	-	76
37	64	-	77	68	84
38	56	80	78	64	76
39	64	80	79	-	84
40	64	80			
Total	3,915 (62 out of 79)		6,028 (75 active of 79 students)		
Mean	63,2		80,4		
Highest Score	80		92		
Lowest Score	45		68		

The data show that the total students' score of cycle 1 is 3,915, and cycle two is 6,028. The average grade score increases from 63.2 to 80.4 (17%). The highest score increases from 80 to 92 (12%), while the lowest score increases from 45 to 68. The test results on materials for making an Australian cultural education video suggest that there has been an increase in several items, including the students' ability to observe the material widely.

**Table 2** Students' Understanding Test Scores

Subject	Cycle 1	Cycle 2	Status	Subject	Cycle 1	Cycle 2	Status
1	79	79	Pass	41	84	86	Pass
2	89	85	Pass	42	78	77	Pass
3	82	81	Pass	43	79	83	Pass
4	83	84	Pass	44	80	85	Pass
5	83	84	Pass	45	77	86	Pass
6	90	84	Pass	46	74	85	Pass
7	69	69	Pass	47	68	82	Pass
8	77	79	Pass	48	72	80	Pass
9	78	78	Pass	49	77	81	Pass
10	71	71	Pass	50	80	79	Pass
11	80	73	Pass	51	76	76	Pass
12	78	79	Pass	52	76	75	Pass
13	88	84	Pass	53	81	75	Pass
14	85	86	Pass	54	76	76	Pass
15	77	77	Pass	55	79	74	Pass
16	77	72	Pass	56	71	72	Pass
17	78	80	Pass	57	74	83	Pass
18	88	88	Pass	58	69	79	Pass
19	87	81	Pass	59	77	72	Pass
20	80	84	Pass	60	69	79	Pass
21	90	77	Pass	61	79	79	Pass
22	74	74	Pass	62	80	79	Pass
23	82	81	Pass	63	80	81	Pass
24	71	69	Pass	64	72	77	Pass
25	74	72	Pass	65	77	76	Pass
26	84	77	Pass	66	77	80	Pass
27	84	84	Pass	67	80	81	Pass
28	81	86	Pass	68	69	72	Pass
29	88	82	Pass	69	77	77	Pass
30	75	70	Pass	70	69	77	Pass
31	76	77	Pass	71	76	85	Pass
32	78	81	Pass	72	71	77	Pass
33	71	75	Pass	73	74	80	Pass
34	76	74	Pass	74	72	77	Pass
35	76	76	Pass	75	73	74	Pass
36	69	79	Pass	76	69	79	Pass
37	76	-	Not Pass	77	72	79	Pass
38	90	70	Pass	78	88	88	Pass
39	70	77	Pass	79	73	73	Pass
40	90	70	Pass				
Total	6.143			6.121 (78 active of 79 students)			
Mean	77,76			78,47			
Highest Score	90			88			
Lowest Score	68			69			
Pass Status	79 Subjects			78 Subjects			

The data show that the total scores of cycle 1 are 6.143, and cycle 2 is 6.12. There is an increase (1%) in the mean score from 77.7 in cycle 1 to 78.5 in cycle 2. However, the highest score decreases from 90 in cycle 1 to 88 in cycle 2. The lowest score increases (1%) from 68 in cycle 1 and 69 in cycle 2. All students were declared complete, and only one student did not take the final evaluation. The second cycle test results show that 78 students who took the evaluation test, 78 students completed the study. Thus an increase in the average score by 1%, from 77.76 to 78.47. All students are declared complete in learning. It shows an increase in students' understanding and skills in learning material.

**Table 3** Groups' Scores on Responses on Educational Video Making Rubrics

Group	Cycle 1	Status	Cycle 2	Status
1	91	Pass	94	Pass
2	91	Pass	95	Pass
3	92	Pass	84	Pass
4	97	Pass	89	Pass
5	80	Pass	88	Pass
6	91	Pass	91	Pass
7	92	Pass	92	Pass

8	80	Pass	83	Pass
9	80	Pass	88	Pass
10	82	Pass	87	Pass
11	93	Pass	93	Pass
12	84	Pass	98	Pass
13	87	Pass	86	Pass
14	78	Pass	98	Pass
15	86	Pass	99	Pass
16	84	Pass	84	Pass
Total	1388		1449	
Mean	86,75		90,56	
Highest Score	97		99	
Lowest Score	80		84	
Range	17		15	

The data show an increase in group understanding of the learning process where all groups passed. The average score increased (4%) from 86.8 to 90.6, Highest Score from 97 to 99 (2%), and Lowest Score from 80 to 84 (4%).

**Table 4** The results of the group video making

Group	Cycle 1	Status	Cycle 2	Status
1	45	Not Pass	90	Pass
2	72	Pass	90	Pass
3	45	Not Pass	88	Pass
4	65	Not Pass	72	Pass
5	68	Pass	82	Pass
6	65	Not Pass	90	Pass
7	62	Not Pass	82	Pass
8	45	Not Pass	80	Pass
9	90	Pass	92	Pass
10	72	Pass	82	Pass
11	50	Not Pass	88	Pass
12	56	Not Pass	84	Pass
13	56	Not Pass	84	Pass
14	45	Not Pass	86	Pass
15	82	Pass	92	Pass
16	50	Not Pass	82	Pass
Total	968		1364	
Mean	60,5		85,25	
Highest Score	90		92	
Lowest Score	45		72	
Range	45		20	

The assessment results of the making of educational video cycle 2 show that of the 16 groups of students who submitted assignments, all were declared Pass. Thus an increase of 69%, from 5 to 16. The grade average also experienced a good increase from 60.5 to 85,25 (25%). It shows an increase in students' understanding and skills in learning material. Based on observations and evaluation results on Australian culture lessons on making educational videos about one aspect of Australian culture.

#### **4.1 Students' Attitudes towards Assessment for Learning**

The students fill in a questionnaire to elicit their views and attitudes about this type of assessment. Table 5 shows the students' opinions about this practice.

**Table 5.** Students' attitudes towards assessment for learning

Subject	Cycle 1	Cycle 2	Subject	Cycle 1	Cycle 2
1	56	53	41	59	58
2	75	64	42	55	48
3	57	63	43	42	41
4	62	62	44	49	45
5	62	58	45	55	59
6	70	64	46	69	45
7	56	56	47	47	49
8	55	61	48	40	59
9	60	60	49	44	49
10	57	53	50	58	56
11	47	56	51	53	58
12	60	52	52	60	51
13	78	58	53	51	48
14	59	60	54	48	51
15	49	49	55	48	51

16	56	50	56	52	58
17	55	48	57	58	62
18	72	72	58	48	53
19	72	72	59	55	49
20	77	64	60	48	59
21	69	49	61	51	51
22	51	59	62	59	51
23	60	55	63	57	49
24	58	58	64	44	48
25	51	50	65	54	53
26	76	49	66	52	43
27	75	63	67	58	64
28	59	64	68	50	49
29	58	68	69	47	47
30	56	49	70	48	49
31	69	56	71	51	53
32	54	51	72	44	47
33	49	56	73	67	61
34	53	55	74	49	48
35	60	59	75	46	55
36	49	53	76	44	53
37	77	-	77	44	52
38	88	59	78	67	69
39	58	48	79	54	48
40	90	-			
<hr/>					
Total Converted Score	4.509 (79 out of 79)		4.217 (77 active of 79 students)		
Mean	57,08		54,77		
Highest Score	90		74		
Lowest Score	45		43		
Range	50		31		

The data show that there is a contrast between test results and surveys conducted during the Covid-19 Pandemic. All test results indicate that the students achieve better after the application of formative assessment. However, survey results show a different direction. The mean scores decreased (3%) from 57 to 54. The highest score also decreases (16%) from 90 to 74. The lowest score, similarly, also decreases (2%) from 45 to 43. Although the scores decrease from cycle 1 to cycle 2, the students' answers were relatively positive. In general, the students' answers are as follows.

- a. The students are more enthusiastic about learning.
- b. The students are more creative because adequate teaching aids support them.
- c. All of the students are active in the learning process.
- d. The learning process can be done on time.

Although a few of the students have expressed negative views about learning practice assessment, most of the sample subjects have favored this practice. Their responses highlight their positive attitudes towards this form of assessment and answer the study's second question. We can say that the students' attitudes are predominantly positive towards this type of assessment. Furthermore, the same data suggest that they reject the second hypothesis, which assumed that students negatively feel towards learning assessment. In fact, except for a few subjects who express concerns about not having grades for their work or getting too many assignments during the assessment, most participants seem to have positive formative assessment attitudes. They feel that it is exciting, motivating, and beneficial to them.

## 5. DISCUSSION

Assessment for learning consists of various practical techniques: planning; sharing learning goals

with students; marking, feedback, evaluations, and target setting. These techniques need to be well planned and executed to ensure that learning outcomes are clear both to the teachers and the students. All the assessment techniques for learning strategies allow the teacher to track and diagnose students' progress and provide other targets and records of students' learning needs. It ensures that teachers know where students are in their learning and what they need to do next to arrive at the intended goals. After observing and performing the ongoing assessment, the teacher can evaluate whether the Students understand the materials and encourage them to achieve the most in their learning. Through the teacher's feedback, the students can understand what they are supposed to do to achieve a learning goal.

Assessment for learning, which aims to promote learning, encourages learners to evaluate performance, feeds performance results back to students with strategies, close the gap between their actual learning status and the projected outcome, and gives them notes

and guides to handle their obstacles the class. This assessment practice in the ideal classroom provides support for the students to deal with their learning hindrances and feel confident in completing their tasks due to their feedback. They can reveal what they do not understand, and the teacher will readily help them improve their performance effectively.

Assessment for learning is heavily dependent on feedback. Although it is the crucial element of this type of assessment, it will be effective when applied timely, and it applies when fulfilling the learners' expectations and fundamental problems. Asking questions both by students and teachers is also crucial, especially to elicit students' obstacles in mastering materials and understanding lesson objectives. However, feedback and asking questions might not work if the students are not motivated to study. It is the significant role of the teacher to motivate their learners to achieve the best in learning.

## 6. CONCLUSION

This research concludes that assessment for learning (formative assessment) enables teachers to monitor and interfere with the students' learning process to achieve the class learning objectives. This method conditions teachers to appropriately run the

learning process, identify learning problems and adjust teaching to students' needs. This empirical study checks how far the assessment for learning improves Andalas University English students' performance on Australian culture. The study's results indicate that the mean scores of the students are much higher. This result indicates that this type of assessment is quite applicable to improving the subjects' academic achievement.

Additionally, the questionnaires' results also show that the students' attitudes towards this form of assessment are quite positive. Quantitative analyses of the subjects' responses to this questionnaire reveal that the students' attitudes towards this assessment are positive. These students' answers to the questions suggest that the application of assessment for learning has made them learn as the class expects, conditioned them to improve their performance, and offered them more opportunities to learn better.

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