

THE EFFECT OF REGULAR QUIZZES TOWARDS STUDENTS' ACHIEVEMENT IN A CONTENT-BASED SUBJECT

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Abstract

This paper is derived from the result of an experimental research on the effect of giving weekly quizzes as a formative assessment towards students' achievement. The research was done during the odd semester of 2016/2017 academic year at the English Department of Bung Hatta University. The sample that comprised 52 students was chosen by using total sampling technique. The one-shot case study design was considered suitable for both the type of sample and the research problem and thus applied in the study. After the treatment in the form of giving a ten-item-matching quiz at the end of every instructional meeting, the data were collected by using a posttest and then analyzed by using a *t* test for non-independent sample. The result of data analysis showed that the value of *t*-calculated was bigger than that of *t*-table; therefore, it can be concluded that giving regular quizzes was an effective way to improve students' achievement.

Key words: effect, quiz, achievement, content-based subject

A. INTRODUCTION

Instruction and assessment are two interdependent and interlocking components of any educational program. Therefore, assessment procedures should not be external to the instructional process; they are an integral part of it. Accurate and effective assessment is essential to ensure that the students gain access to instructional programs that meet their needs. The failure of assessment and instruction to interact effectively is most evident when inappropriate assessment approaches lead to inaccurate identification, improper program placements, inadequate monitoring of students' progress and the long-term failure of instruction. Conversely, the appropriate assessment has the potential to ensure that the students are on a course to becoming literate and able participants in classroom settings and teachers have information whether their students are making progress, whether they respond to instructional approaches and materials, and whether they accomplish the kinds of learning expected in curriculum.

In terms of its formality, the assessments can be classified into informal and formal ones. Informal assessments can take a number of forms, such as:

incidental, unplanned oral comments and responses; marginal comments on papers; responding to a draft of an essay; advice about how to better pronounce a word; suggestion for a strategy for compensating for a reading difficulty; and showing how to modify student's note-taking to better remember the content of a lecture. Formal assessments, on the other hand, are exercises or procedures specifically designed to tap into a storehouse of skills and knowledge. They are systematic, planned sampling techniques constructed to give teacher and student an appraisal of student achievement (Brown, 2004:5-6).

In relation to its function, assessment can also be classified into two kinds: formative and summative assessment. Formative assessment evaluates students in the process of "forming" their competencies and skills with the goal of helping them to continue that growth process. The key to such formation is the teacher's delivery and students' internalization of appropriate feedback on performance, with an eye towards the future continuation (formation) of learning. For all practical purposes, virtually all kinds of informal assessment are formative. They have the ongoing development of the learner's competencies as their primary focus. Summative assessment aims to measure, or summarize, what a student has grasped, and typically occurs at the end of a course or unit of instruction. A summation of what a student has learned implies looking back and taking stock of how well that student has accomplished objectives, but does not necessarily point the way to future progress (Brown, 2004:6)

Overdependence on a single assessment (in this case summative assessment) is questionable because the scores gained by the students in a summative assessment sometimes disagree with their classroom actual performance. The summative form of testing that permeated the traditional curricula would not be fair anymore to students. Regular and periodical formative assessments, on the other hand, would give more accurate pictures about students' process of learning as well as the outcomes of learning. They also help teachers evaluate the effectiveness of their teaching. In other words, formative assessments are helpful for improving teaching.

According to Brown (2004:6), most of classroom assessments are formative assessments: evaluating students in the process of "forming" their competencies and skills with goal of helping them to continue that growth process. The key to

such formation is the delivery (by the teacher) and internalization (by the students) of appropriate feedback on performance, with an eye toward the future continuation (or formation) of learning. Formative assessments can be done in many ways, such as: oral presentations, observations, interviews, portfolios, quizzes, etc. Among them, quizzes are more manageable in terms of time, energy, and materials needed. Although quizzes might be less authentic compared with performance-based assessment, when administered correctly, they are valid, reliable, and practical. They also provide beneficial wash back for teaching and learning.

There have been many researches dealing with quizzes and quizzings. Among the others, Marcell (2008), for example, studied the effectiveness of regular online quizzing in increasing class participation and preparation. The study conducted by Marcell informs that the use of regular online quizzing significantly increased class participation and preparation. Then, Azorlosa (2011) studied the effectiveness of announced multiple-choice quizzes in a Psychology of Learning class. The announced multiple-choice quizzes as one type of formative assessment had positive effect in a Psychology of Learning class. Next, Zarei (2015) conducted a research on the effectiveness of quizzing on L2 idioms learning. The study conducted by Zarei tells that the use of quizzes (or quizzing) gave better effect to students' understanding on L2 idioms. Another research dealing with the effect of using quizzes was that of Kayser's (2015). Kayser carried out a research on the effect of daily quizzes on student learning in the Advanced Placement of Chemistry classroom. The Kayser's research tells that the use of daily quizzes gave better effect to student learning.

Inspired by those studies, the researcher was interested in doing a research on the effect of weekly matching quizzes towards students' achievement on a content-based subject, in this case *Educational Research Design*.

The term instruction has been used by language teaching methodologists and teachers in the same sense with learning. In many current references, the term instruction is frequently used instead of learning. Although they are similar in general view point, the term learning is more on the students' side, meanwhile instruction can be generally seen as the matters of instructors' side. In relation to this research, let's see the theoretical foundation and ideas given by experts

dealing with content-based instruction or content-based subjects. Snow (2001:303 in Celce-Murcia (ed.)) says that the word content has had many different interpretations throughout the history of second/foreign language teaching, but she herself defines the content as the use of subject matter for second/foreign language teaching purposes. Subject matter may consist of topics or theories based on student interest or need in an adult EFL setting or the subjects that students are studying in their elementary school classes. In relation to content-based instruction, Nunan (2001:61 in Celce-Murcia (ed.)) says that content-based instruction comes in many different guises. However, all variations share one characteristic – language is not presented directly, but is introduced via the content of other subjects. Then, models for content-based instructions are also various due to such factors as educational setting, program objectives, and target population. All share, however, a common point of departure – the integration of language teaching aims with subject matter instruction.

This research adopts the meaning of *content* stated by Snow because the main instructional goal of *Educational Research Design* subject – the subject learnt by the research sample – is to prepare the students for the types of academic tasks they encounter in their university. In the teaching-learning processes of *Educational Research Design* subject, there is an integration of language teaching aims with subject matter instruction.

Assessment is needed for all types of subjects offered to learners, including language learners. In many references, assessment is a popular and sometimes misunderstood term in educational practice. One might be tempted to think of test and assessment as synonymous terms, but they are not. Tests in fact are prepared administrative procedures that occur at identifiable times in a curriculum when learners muster all their faculties to offer peak performance, knowing that their responses are being measured and evaluated. On the other hand, assessment is an ongoing process that encompasses a much wider domain. It is all attempts to gain information concerning learner's performance and ability (see Brown & Abeywickrama, 2010; Todd, 2002).

In addition to the ideas above, Shaaban (2005:35) states that in all academic settings, assessment is viewed as closely related to instruction. Assessment is needed to help teachers and administrators make decisions about students'

linguistic abilities, their placement in appropriate levels, and their achievement. The success of any assessment depends on the effective selection and use of appropriate tools and as well as on the proper interpretation of students' performance. Assessment tools and procedures, in addition to being essential for evaluating students' progress and achievement, also help in evaluating the suitability and effectiveness of the curriculum, the teaching methodology, and the instructional materials.

In relation to formative assessment, Shaaban (2005:35 – 36) adds that assessment, therefore, becomes a diagnostic tool that provides feedback to the learner and the teacher about the suitability of the curriculum and instructional materials, the effectiveness of the teaching methods, and the strengths and weaknesses of the students. Furthermore, it helps learners to demonstrate the progress they are making up: the progress and development in linguistic matters and motivation. This encourages students to do more and the teacher to work on refining the process of learning rather than its product. Then, it has been claimed as well that using formative assessment can help decrease the level of anxiety generated by concentration on linguistic accuracy and increase students' comfort zone and feeling of success by stressing communicative fluency.

An important distinction to bear in mind is between assessment of learning and assessment for learning. Assessment of learning provides information for external parties, such as parents, the teachers, the institution, external funding authorities, and so on. Assessment for learning provides information for learners and teachers who can use the information to improve student performance. In other words, the assessment becomes a learning tool rather than a tool for judging the student (Nunan, 2015:168).

With EFL students, assessment is far more complex and challenging than with native speakers of English. With EFL students, assessment is used for at least six purposes:

1. Screening and identification: to identify students eligible for special language and/or content area support programs;
2. Placement: to determine the language proficiency and content area competencies of students in order to recommend an appropriate educational program;

3. Reclassification or exit: to determine if a student has gained the language skills and content area competencies needed to benefit from instruction in grade-level classrooms;
4. Monitoring student progress: to review student language and content area learning in classrooms;
5. Program evaluation: to determine the effects of federal, state, or local instructional programs;
6. Accountability: to guarantee that students attain expected educational goals or standards (O'Malley and Pierce, 1995: 3)

Similar with ideas presented by O'Malley and Pierce above, Nunan (2015: 172) identifies seven purposes of assessment. They are: (1) to place students in learning groups, (2) to provide feedback on learner's strengths and weaknesses for course planning purposes, (3) to provide feedback on progress, (4) to provide evidence of the achievement of course goals, (5) to encourage learners to take responsibility for their own learning, (6) to provide records of achievement, and (7) to provide information for accountability purposes.

No matter what purpose is going to be fulfilled by an assessment, a teacher or an assessment designer should have in mind the following key principles: (i) always begin with the objectives of the course, (ii) involve learners in the learning and assessment process, (iii) ensure that the assessment tool is appropriate to the purpose of the assessment, (iv) do not use assessments that have been carried out for one purpose for other purposes, and (v) the ultimate judge of success is the interlocutor beyond the classroom (see Nunan, 2015:174 – 175).

In accordance with the idea, Johnson and Johnson (2002:2) state that doing careful assessment is an inherent responsibility of being an educator. Instruction, learning, assessment, and evaluation are all interrelated. Teachers are responsible for instructing students to create learning, which is assessed to (a) verify learning is taking place, and (b) improve the effectiveness of instruction. Periodically, assessment is used to judge the quality and quantity of learning and to award grades. Instruction, learning, assessment, and evaluation are so intertwined that it is hard to separate them.

Quizzes happen at various points during the course, and because they are formative rather than summative, they should be 'low stakes' (informal). The

purpose of quizzes is to promote engagement with course content knowledge, rather than to assess students in ‘Yes/No’ or ‘pass/fail’ manner. For example, when you want your students to read before they come to class in order to prepare for a new lecture theme or topic, you can set a reading and a formative quiz that will guide their reading and help them to test their understanding of the reading though on a fairly basic level. Or, if you have finished teaching a section of your course and would like to see what students have understood and what they can remember about what they have learnt, you could set a formative quiz that could help them (and you) to note understanding and misunderstanding, so that you can continue to teach the course with a better sense of how your students are coping. This makes your teaching more responsive and more informed.

Formative quizzes are an effective way of providing students with formative and ongoing feedback on their learning progress. They can show the teacher and the students whether they understand the course content knowledge and whether there are gaps in their knowledge or misunderstanding that require further attention. Ideally, these quizzes can be used to test memory and recall, and also basic reasoning. You can set up the quiz to allow students multiple and unlimited attempts so they can self-test and revise content. Quick quizzes throughout the day can help teachers assess the effectiveness of their instruction, as well as students understanding of the concepts taught.

Roediger et.al. (2011) explain that if students are quizzed frequently, they tend to study more regularly. Quizzes also permit students to discover gaps in their knowledge and focus study efforts on difficult material; furthermore, when students study after taking a quiz, they learn more from the study episode than if they had not taken the quiz. Quizzing also enables better metacognitive monitoring for both students and teachers because it provides feedback as to how well learning is progressing. Greater learning would occur in educational settings if students used self-testing as a study strategy and were quizzed more frequently in class. More specifically, they identify ten benefits of testing in educational practice as follow:

1. Retrieval aids later retention. There is clear evidence from psychological experiments that practicing retrieval of something after learning it, for

instance by taking a quiz or a test, makes you more likely to retain it for the long term.

2. Testing identifies gaps in knowledge.
3. Testing causes students to learn more from the next study episode. Essentially, it reduces forgetting which makes the next related study area more productive.
4. Testing produces better organization of knowledge by helping the brain organize materials in clusters to allow better retrieval.
5. Testing improves transfer of knowledge to new contexts. There are several experiments where tests and quizzes help transfer and application of knowledge.
6. Testing can facilitate retrieval of material that was not tested. Surprisingly, there are circumstances where quizzes or tests, particularly if delayed, can help people retrieve/retain information that was related to that asked but not actually asked in the questions.
7. Testing improves meta-cognitive monitoring—by giving students scores or self-assessments, they can better predict their knowledge and be more confident about what they know and what they need to know.
8. Testing prevents interference from prior material when learning new material. If you have a test after learning one set of material before learning another set of material, it can make it less likely that the second session will.
9. Testing provides feedback to instructors and lets them know what is learned or what is not.
10. Frequent testing encourages students to study. Having frequent quizzes or tests motivates study and reduces procrastination.

Although the above benefits deal with testing, they may also be found in quizzing because a quiz is similar with a small or a short test. In other words, the benefits of a test can also be found in a quiz because theoretically a quiz is a part of a test (Brown (2004:6).In line with that assumption, this paper aims at discussing the effect of regular quizzes towards students' achievement in a content-based subject which is derived from the result of an experimental research

conducted in 2016/2017 academic year at the English Department of FKIP Bung Hatta University, Padang.

B. RESEARCH METHODS

This research belongs to an experimental method because it tried to see the effectiveness of using one treatment toward the teaching-learning processes on a content-based subject, *Educational Research Design*. The independent variable of the research was quizzes in the form of matching that were given to the students at the end of every weekly lesson in *Educational Research Design* class. On the other hand, the dependent variable was the students' achievement on *Educational Research Design* class that was measured at the end of the treatment.

Among several research designs that belong to experimental method, the researcher chose a one-shot case study design. It means that all members of the sample were given a treatment in the form of giving quizzes for about two months and they were post-tested at the end of the treatment.

This research was conducted at the English Department of TTF of Bung Hatta University, Padang in 2016/2017 academic year. The population of this research was all English Department students of FKIP Bung Hatta University administered as the fourth year students in 2016/2017 academic year who were firstly taking *Educational Research Design* subject. The sample was all of them because the researcher applied total sampling technique as the way to select the sample. (See Gay and Airasian, 2000; Gay., Mills., and Airasian., 2009; and see also Mitchell and Jolley, 2010). The sample comprised 52 students who were spread in two parallel groups.

Practically, the classroom procedures during the execution of the treatment were as follow:

- a. At the beginning of the semester the students were told about the materials they would learn every week as well as classroom procedure and the formative assessment they would follow;
- b. Every week, the students learnt the learning materials in the classroom through lecturing and (group and classical) discussion; it happened during seven meetings;
- c. During the last ten minutes, the students did a formative assessment by answering a quiz of ten items; the quiz was in the form of matching

- items; the researcher constructed and developed the quiz based on relevant learning materials and the goals of each meeting;
- d. The quiz was practically displayed through LCD projector and the students wrote their answers on pieces of paper;
 - e. The students' answers were directly checked together before they left the classroom, and their scores were recorded;
 - f. The students' scores and how they answered the quizzes had become part of instructional information dealing with their understanding on the materials of the content-based subject they learned.

The data were collected by administering a posttest on *Educational Research Design*. It contains 50 matching items. It has content validity because it was designed to measure how well the students mastered the intended content that they should have learnt. The students finished the test in 75 minutes. Each correct answer was assigned score 2 and each incorrect answer was assigned score 0. Therefore, the maximum possible score was 100 and the minimum one was 0. The researcher summed up each student's score and they became the data to be analyzed.

After the data were collected (in the form of scores), they were firstly tabulated into table-format in order that they were easily transferred into statistical analysis. Then, they were quantitatively analyzed by means of appropriate statistics, either descriptive statistics or inferential statistics. In relation to the descriptive statistics, the value of mean and standard deviation was calculated and then the results of analysis were descriptively narrated. To apply inferential statistics, other data from similar sample had to be found by comparing sample scores on *Language Assessment* subject with their scores on *Educational Research Design* subject. The difference in scores was the data to be analyzed by using the t-test for non-independent sample.

C. RESULT AND DISCUSSION

The result of calculation using descriptive statistics revealed that the mean gained by the sample was 63.04 and the standard deviation was 21.69. The mean gained by the same sample on another subject (*Language Assessment*) which was not provided with regular quizzes was 51.04 and the standard deviation was 19.55. It means that the achievement of the students who were given regular

quizzes was much better (63.04>51.04). If it was compared with the achievement of other students who studied *Educational Research Design* in the previous year and who were not given regular quizzes, it can be stated that the achievement of the students who were given regular quizzes was still better. It is due to the fact that the mean of the previous year's students on the same *Educational Research Design* was 62.40 and the standard deviation was 23.63.

The result of applying the t-test for non-independent sample as one of inferential statistics showed that the value of calculated-t was 5.822. As to the value of table-t at the level of significance 95% ($\alpha .05$) and the degree of freedom 51 (n-1) was 2.009, it can be concluded that the value of calculated-t was much bigger than the value of table-t. It can be inferred that the difference in mean scores is not a chance but a true difference. Since the value of the calculated-t was bigger than that of table-t, the null hypothesis was rejected and consequently the alternative hypothesis was accepted. It means that giving regular quizzes has a significant effect towards students' achievement on a content-based subject, in this case is *Educational Research Design* subject. It may be claimed that giving regular quizzes in a content-based subject gives better effect to students' achievement.

How and why the regular quizzes bring positive effect to students' achievement in learning content-based subject can be seen from educational and cultural dimensions. In terms of educational point of view, the quizzes make the learners have better achievement since they facilitate or form learning. They provide students with feedback concerning the progress they are making toward achieving their learning goals and they provide teachers with feedback concerning their progress in providing effective instruction (see also Brown, 2004).

Similar to a test, a quiz is a method and a measurement; it highly "motivates" students to learn and to review their learning materials. As the students know that there would be quizzes in their class, they mostly prepared themselves for the quizzing. As the result, the students read and learnt the learning materials more seriously. This is important and helpful in building and increasing students' understanding and comprehension on the materials they are learning. Quizzes as formative assessments may also "form" students' competencies and skills with the goal of helping them to continue their growth process. Quizzes also help decrease

the level of anxiety (see Shaaban, 2005:35 – 36) because they are not ‘as formal and frightening’ as tests.

In addition to educational dimensions of regular quiz as discussed above, giving regular quiz as formative assessments may have cultural dimensions. Giving regular quizzes in each meeting of content-based subjects stimulates students to prepare themselves as well as possible because they know that there will be a short test then. Preparing for a test is one of many (Indonesian) students’ behaviors; they seriously learn for a test. This behavior, in fact, is also part of socio-cultural reflection of students’ society. Ideally, the socio-cultural dimensions of learners may significantly influence learning behavior and motivation, including EFL learners in Indonesia.

Having quizzing as a formative assessment in the teaching-learning processes of content-based subjects relatively “forces” students to read, to review, or to have small discussion dealing with learning materials they are learning. This is, of course, a good way to increase students’ attention to instructional activities in classroom and additional discussion. In addition, the regular quizzing in each formal classroom activity lead students to have opportunity to see how far they understand and comprehend the main points of recent learning materials. This opportunity becomes specific-personal factor of having motivation to have better scores on the subject. Obtaining higher scores are parts of cultural properties of most students in order to have good grades at the end of semester. As quick test, quizzes attract students’ attention to lecturer’s explanation and examples dealing with the concepts and main theories learnt. Such attention and motivation are needed in learning content-based subjects because there are a lot of definitions, concepts, and examples that should be memorized and recalled by the students. It is supposed that regular quizzes as the formative assessments play important roles in this aims of learning content-based subjects.

Moreover, it is highly supposed that the regular quizzes can be used by the students to later complete their own notes and to increase their ability to memorize a lot of concepts they have understand. One more habit that becomes students’ culture of learning is taking notes. Taking notes and having written summaries of learning materials of content-based subjects are highly needed by the students instead of arguing ideas orally. Based on lecturer’s experience and

intentional observation during the teaching-learning processes of content-based subjects at the English Department of TTF of Bung Hatta University, some students were diligent to take written notes. This is one of Malay and Indonesian culture which is frequently brought to classroom activities by the students. In relation to the fact, it seems that students' cultural background and characteristics of the content-based subjects can be accommodated by the regular quizzes as the formative assessment given. Consequently, it is logical to state that regular quizzes as the formative assessment give significant-positive effect towards students' achievement on content-based subjects.

D. CONCLUSION

Based on the research results, the first conclusion that can be drawn is that regular quizzes used as formative assessment gives a significant-positive effect towards the students' achievement on other content-based subjects offered to the English Department students of TTF of Bung Hatta University because the quizzes are constructed based on the students' needs and goal of learning and used in meaningful ways. Another conclusion is that the regular quizzes used as the formative assessments have particular educational and cultural dimensions. For the content-based subjects offered to the university students, the use of appropriate and meaningful assessments with relevant educational and cultural dimensions is academically helpful, as well. Lastly, it can be argued that the result of this research is relatively close to results of previous studies dealing with the effectiveness of using quizzes. It is also relevant to the theories telling that using quizzes may be helpful if they are used appropriately.

REFERENCES

- Azorlosa, Julian L. (2011). The effect of announced quizzes on exam performance. In *Journal of Instructional Psychology*. Vol. 38 Issue 1.
- Brown, H. Douglas. (2004). *Language assessment: principles and classroom practices*. New York: Pearson Education.
- Brown, H. Douglas & Abeywickrama, Priyanvada. (2010). *Language assessment: principles and classroom practices*. (Second Ed.). New York: Pearson Education.
- Gay, L.R. & Airasian, Peter. (2000). *Educational research: competencies for analysis and application*. (Sixth Ed.). Upper Saddle River, New Jersey: Prentice-Hall, Inc.

- Gay, L.R., Mills, Geoffrey E., & Airasian, Peter. (2009). *Educational research: competencies for analysis and application*. (Ninth Ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.
- Johnson, David W. & Johnson, Roger T. (2002). *Meaningful assessment: a manageable and cooperative process*. Boston: Allyn and Bacon.
- Kayser, Jolene A. (2015). The effect of daily quizzes on student learning in the advanced placement chemistry classroom. (An Online Professional Paper for the Degree of Master of Science in Science Education). Montana: Montana State University.
- Marcell, Michael. (2008). Effectiveness of regular online quizzing in increasing class participation and preparation. In *International Journal for the Scholarship of Teaching and Learning*. Vol. 2 No. 1
- Mitchell, Mark L. & Jolley, Janina M. (2010). *Research design: explained*. (7th ed.). Belmont, CA: Wadsworth.
- Nunan, David. (2015). *Teaching English to speakers of other languages: an introduction*. New York: Routledge.
- Nunan, David. (2001). "Syllabus design" in Celce-Murcia, Marianne. (ed.). *Teaching English as a second or foreign language*. (Third Edition). Boston, MA: Heinle.
- O'Malley, J. Michael & Pierce, Lorraine Valdez. (1995). *Authentic assessment for English language learners: practical approaches for teachers*. Addison-Wesley Publishing Company.
- Roediger, H.L., Putnam, A.L., & Smith, M.A. (2011). Ten benefits of testing and their applications to educational practice. In *Psychology of learning and motivation: cognition in education*. Vol 55.
- Shaaban, Kassim. (2005). Assessment of young learners. In *English Teaching Forum*. Vol. 43 No. 1.
- Snow, Marguerite Ann. (2001). Content-based and immersion models for second and foreign language teaching in Celce-Murcia, Marianne. (ed.). *Teaching English as a second or foreign language*. (Third Ed.). Boston, MA: Heinle.
- Zarei, Abbas Ali. (2015). On the effectiveness of quizzes on L2 idioms learning. In *Iranian Journal of Language Teaching*. Vol. 5 No. 1