

The Feasibility and Effectiveness of Integrating Content Knowledge and English Competences for Assessing English Proficiency in CLIL

Ima Isnaini Taufiqur Rohmah,
IKIP PGRI Bojonegoro, Indonesia

isnainiima@ikipgribojonegoro.ac.id

Abstract. Researching Content and Language Integrated learning (CLIL) is unique since the focus is not only in English as instructional language but we have to consider the content as another side of the coin. Both aspects must be balance. This study aimed exploring the integration of content knowledge and English competence in English proficiency assessment and also the effectiveness of the integration to measure students' English proficiency. This study used Combined study (Creswell, 2012). The participants of this study were 3 primary schools under the name of International Class Program in East java Indonesia. The data were gathered through semi-structured interview, questionnaire and test, i.e. pre-and-post-test. The qualitative data were analyzed descriptively; and the quantitative data were analyzed by using paired sample t-test formula. The results revealed that integrating content knowledge and English competences in assessing English proficiency is feasible and applicable. Furthermore, it has been statistically proven that it is effective integrating content knowledge and English competences in assessing CLIL by indicated the raise of students' English proficiency. This study implies that integrating both aspects in CLIL has great influence in students' English assessment and this should be taken into account by the related parties.

Keywords: *Content knowledge, CLIL, English competences, English proficiency assessment in a Content and Language Integrated Learning*

1. Introduction

Content and Language Integrated Learning (CLIL) is considered as a major innovation in education. It is an educational approach that can be mutually beneficial for both content and language subjects. Moreover, it aims to increase learner motivation, develop learners' second or foreign language, cognitive skills and intercultural understanding (Eurydice, 2006). Because of this potential, CLIL is gaining momentum and extending as an educational approach across continents.

Nowdays, in primary education sector in Indonesia, English served as a local content subject, but in some primary schools, English is given as a "language across curriculum" or as it is now termed

(CLIL) mode (Puspita et al., 2016). Subjects such as Mathematics and Science

are taught using English as a Medium Instruction (EMI). This policy also applies to schools which adopt international curriculum, and thus develop a synergy between the National Curriculum of Indonesia and an International Curriculum. These schools have a separate type of class which is called International Class Program (ICP) where the bilingual education program is adopted (Rachmajanti et al., 2015). In its common application in Indonesia, CLIL teachers interweave the language into the lessons (Fitriani, 2016). Furthermore, many schools in Indonesia tried to adopt CLIL

with some expectations, CLIL considered offers a number of benefits for learners, such as: (1) learners are motivated; (2) learners developed their cognitive and communication skills; (3) learners' communication skills progress more due to meaningful communication; (4) learners receive a lot of language input and output; (5) learners develop intercultural awareness (Dale & Tanner, 2012).

Assessment in CLIL is crucial because of its “wash-back” effect on learning; it must cover both content and language and take into consideration all aspects of CLIL communication in their specific context (Barbero, 2012). A positive effect of assessment on CLIL consists in making the learner aware of the wide range of capabilities that can be developed through this approach, instead of focusing on a specific set of data.

Language assessment (English proficiency assessment) in CLIL, as in all other education fields, must fulfil general quality criteria, two of which are essential: *validity* and *reliability* (Barbero, 2009, p. 108). Assessment must be supported by “valid” assessment tools measuring exactly what these tools intend to assess and being perfectly consistent with the teaching objectives. Assessment must also provide “reliable” feedback for the learner consisting of criteria, scores and descriptors that may quantify, evaluate and interpret the outcomes. Reliable assessment indicated the accuracy, precisely and consistently (Hönig, 2010). Many studies examined English proficiency assessment of CLIL in European countries. For example, Wewer (2013) investigated English proficiency assessment in bilingual content instruction CLIL in Finland. There also some existing studies (Hönig 2010, Serragiotto 2007), as well as research in assessment concerning both language and content knowledge

(Huttner, Dalton, and Smit 2013; Lasagabaster and Sierra 2010; Sierra 2007) have mainly focused on secondary or tertiary students in United States. Although, some schools in Asia's context also adopt CLIL in the teaching and learning, but the study in the CLIL area were rare and only between (Fitriani, 2016) and (Rachmajanti et al., 2015). Furthermore, English proficiency assessment of CLIL in the Indonesian context has not so far been investigated at all. Based on the background above, this study was focused to answer the following research objectives:

1. To analyze feasibility of the integration of content knowledge and English competences in assessing English proficiency in CLIL classroom context,
2. To investigate the effectiveness of the integration of Content knowledge and English competences in assessing English proficiency in CLIL classroom context

2. Method

This study employed a combined approach (Creswell, 2012) of qualitative and quantitative. This combined approach was considered the most relevant for this study since the objectives of this study were (1) analyzing the feasibility of the integration of content knowledge and English competences in assessing English proficiency, and (2) investigating the effectiveness of the integration of content knowledge and English competences in assessing English proficiency in CLIL classroom context. To answer the first objective, a qualitative approach in the form of a case study design was employed. Meanwhile, to answer the second objective, a quantitative approach in the form of experimental with pre-and-post test design was employed.

Participants

All of the students were placed in one class. During the data collection using interview, not all students were involved. The interviewees were chosen purposively based on those having high and moderate score of civics. Besides, those who were interviewed must be the students who have strong willingness to be involved in this study. After the participants were chosen purposively, 10 out of 42 students were chosen for interview. Meanwhile, for questionnaire distribution and experimental design, the 42 students were involved altogether.

Data Collection Technique *Semi-structured Interview*

As it was mentioned previously, this study used a combined approach. As a consequence, there was also different data collection techniques used in this study. To collect the qualitative data, a semi-structured interview was used. This technique was done in order to get the comprehensive data dealing with the students' perceptions and opinions of the integration of content knowledge and English competences in assessing students' English proficiency in CLIL classroom. This interview was conducted to 10 out of 42 students who had been chosen purposively. This interview was conducted after the students were do the test.

Questionnaire

The second instrument used to collect data was questionnaire. This questionnaire was in the form of close-ended questions with five options following the Likert Scale. This questionnaire was used to check whether or not the students' interview answers were valid. This questionnaire was distributed to all of 42 students who had been treated by using content knowledge and English competences integrated test.

Test (Pre-and-Post Test)

To collect the quantitative data, pre-and-post-test were employed to 42 students. The pre-test was given before the students were treated by using content knowledge and English competences integrated test. On the contrary, the post-test was given after the students were treated by using content knowledge and English competences integrated test. The results of pre-and-post-test, then, were compared for analysis.

Qualitative Data

To guarantee that the data yielded from this study was valid, the researchers used a triangulation technique. The process of triangulation was conducted by comparing and analyzing the results of interview and questionnaire simultaneously. According to Patton (2002), methods of triangulation often involves comparing and integrating data collected through some kind of qualitative methods with data collected through some kind of quantitative methods. Therefore, in order to test the consistency of the data obtained qualitatively from interview and questionnaire were selected according to their relevance to the research questions (see Creswell & Miller, 2000; Creswell, 2012).

Quantitative Data

To guarantee that the quantitative data yielded from the test, the researchers first tried the test instrument out to other samples. Since the test was in the form of multiple choice, the results of try out, then, were analyzed its items for validity and reliability. The validity of test item was done using *point-biserial correlation coefficient* formula and the reliability of the test instrument was done using *KR 21*. By doing so, the quantitative data yielded

from the test instrument were also valid and reliable.

Data Analysis Technique

As there were two kinds of data in this study, the data analysis techniques were also different between the qualitative data and quantitative data. The qualitative data yielded from interview was analyzed descriptively following the steps of qualitative data analysis proposed by Creswell (2008). It was analyzed by examining the "bottom-up" approach to analysis. The researchers first collect data and then prepare it for data analysis. This analysis initially consists of developing a general sense of the data, and then coding description and themes about the central phenomenon. In this study, coding schemes were used to gain a more detailed perspective about what was occurring based on the purpose of the study. These coding schemes helped to analyze the transcripts of the participants. Besides, descriptive statistics were also used to analyze quantitative data gained from the questionnaires (Ghufron & Ermawati, 2018).

Further, the quantitative data yielded from pre-and-post test were analyzed by using paired sample t-test. The means scores were compared and analyzed. However, before the data of pre-and-post test were analyzed, its normality and homogeneity were tested. The normality test was done by using Lielifors formula and the homogeneity test was done by using Bartlett formula. After the data were concluded that they were in normal distribution and homogeneous, then, the t-test was implemented.

3. Findings and Discussion

It was mentioned earlier that the objective of this study was to investigate the

feasibility and the effectiveness of the integration of content knowledge and English competences in assessing students' English proficiency. To get the data and information dealing with the objective of the study, some techniques had been implemented, i.e. interview, questionnaire, pre and post-test. The findings are elaborated below.

The Feasibility the integration of content knowledge and English competences in assessing English proficiency.

The first objective of this study was to analyze the feasibility of the integration of content knowledge and English competences in assessing English proficiency in CLIL classroom. To get the data dealing with this objective, semi-structured interview and questionnaire were used. From the results of semi-structured interview, it can be inferred that integrating content knowledge and English competences in assessing English proficiency is feasible to be implemented in CLIL classroom. Besides, it also motivates the students to learn English. Commonly, the students are reluctant to learn English. They perceived that English is difficult lesson. But, their perceptions are changed after the teacher integrating content knowledge and English competences in English proficiency assessment. The following is the excerpt of the interview with the S1 (student 1):

Researcher : Hello, can I get some information from you, what is your opinion when in assessing English proficiency, the teacher integrating the content and the English in a test?

Student 1 : Well, at first, I think that it is will more difficult to do the test, but actually it was

Ima Isnaini Taufiqur Rohmah: The Feasibility and Effectiveness of Integrating Content Knowledge and English Competences for Assessing English Proficiency in CLIL

interesting. It makes me easy to learn English.

Researcher : Did you like learning English lesson before?

Student 1 : at first, no, I do not like, but after integrated test it was challenging.

Researcher : and now, Have you changed your perceptions of learning?

Student 1 : I think so, I really enjoy the lesson now. We could learn English through other subject.

Another. She argued that it is easy to do the test. The following is the excerpt of the interview.

Researcher : Dear, do you think that integrating content knowledge and English competences is applicable for English proficiency test?

Student 2 : Sure, it is applicale.

Researcher : Why? Could you give your reasons?

Student 2 : Well, by integrating content and English we can learn English by using it

Researcher : Have you ever found a problem with it?

Student 2 : Yes, of course. But it's nothing. The problem is when we found a new words in English.

The similar response was given by student 5. He told that after the integration of content and English in English proficiency assessment, he becomes more motivated in learning English. It is because actually, they learn content subject but they also learn English directly by using it. Moreover, the The following is the excerpt of the interview.

Researcher : What is your comment dealing with the integration of content knowledge and

English competences in assessing English proficiency?

Student 5 : Hmm, I think it really motivates me, not only me, I think all students are also motivated.

Researcher : Why is it motivating?

Student 5 : It's because when we learn English actually we also learn other subject.

Researcher : Do you think that this assessment model is feasible and applicable?

Student 2 : Yes, of course. It feasible and applicable.

Another data collection technique used to answer the first objective was questionnaire. This questionnaire was in the form of close-ended questions with five options following the Likert Scale. This questionnaire was used to check whether or not the students' interview answers were valid. This questionnaire was distributed to all of 42 students who had been treated by using content and English integrated test. The questionnaire has 10 statements. The statements consist of 7 positive statements and 3 negative statements. The following are the statements:

Table 1. The Questionnaire of Feasibility of the content and English integrated test

No.	Statements	Answers				
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Content and English integrated test is motivating					
2	Doing subject test using English is motivating					
3	Doing subject test by using English language is easy					
4	The content and English integrated test is accessible for the students					
5	If there is a problem dealing with the test, it can be easily solved					
6	The content and English integrated test can be implemented in the fifth grades students					
7	The content and English integrated test is soluble to learn English					
8	The traditional test does not provide comprehensive subject and English learning					
9	The content and English integrated test is difficult to be implemented					
10	The content and English integrated test is an interesting testing model instead of traditional test					

From the questionnaire above, the results can be seen in the following figure.

Figure 1. The Results of Questionnaire Distribution

From figure 2 above, it can be explained as follows.

The first statement states that *content and English integrated test is motivating*. 75% of the respondents **strongly agree** with the statement and 25% of them **agree** with it. The second statement states that *doing subject test using English is motivating*. The answer of the respondents show that 75% of the them **strongly agree** with the statement and 25% of them **agree** with it. The third statement states that *doing subject test by using English language is easy*. The repondents' answer is 100% **strongly agree** with the statement. The fourth statement states that *the content and English integrated test is accessible for the students*. 100% of respondents **strongly agree** with the fourth statement. The fifth statement states that *if there is a problem dealing with the test, it can be easily solved*. The respondents' answer is up. 37.5% of the respondents **strongly agree** with the fifth-statement, and 62.5% of them **agree** with it. The sixth statement states that *the content and English integrated test can be implemented in the fifth grades students*. 100% of the respondents **strongly agree** with the statement. The seventh statement states that *the content and English integrated test is soluble to learn English*. 100% of the respondents **disagree** with this statement. The eighth statement states that *the traditional test does not provide comprehensive subject and English learning*. 100% of the respondents **disagree** with this statement. The ninth statement states that *the content and English integrated test is difficult to be implemented*. 100% of the respondents **disagree** with this statement. The tenth statement states that *the content and*

English integrated test is an interesting testing model instead of traditional test. The repondents' answer is 100% **strongly agree** with the statement.

After comparing the results of the interview and the questionnaire above, it can be inferred that it is feasible to integrated content knowledge and English competences in assessing English proficiency. Although this effort is a new learning model, the students could easily adapt it easily, since in their teaching and lerning process they also treated using English in the classroom. This is in line with the study of Fitriani (2016) who mentioned that "CLIL teachers interweave the language into the lessons". In CLIL assessment, an appropriate balance between subject and language is a key requirement for satisfactory CLIL implementation (Serra, 2007). This needs to be assured as part of the curriculum in schooling structures, and especially in the management of transitions within and across schools, and in classroom practice. This latter refers to the work of teachers: how they conceptualize good CLIL practice, plan their lessons, activities and worksheets, and in interaction, how their feedback supports sustainable learning in both language and subject.

The Effectiveness of integrating content knowledge and English Competences in assessing English proficiency

The second objective of this study was to investigate the effectiveness of integrating content and English in assessing English proficiency in CLIL classroom. To answer this objective, an experimental with pre-and-post test design was used. The pre-test was done initially before the students were treated by using content and language integrated English proficiency assessment.

Pre-Test Results

Ima Isnaini Tauffiqur Rohmah: The Feasibility and Effectiveness of Integrating Content Knowledge and English Competences for Assessing English Proficiency in CLIL

The data yielded from pre-test was first tested its normality by using Lielifors formula. The following is summary of Lielifors test.

Table 2. The Summary of Normality Test of

Table 2. The Summary of Normality Test of Pre-Test Data

Group	Number of Group	Mean	St.Dev.	L_s	$L_{s(1-\alpha)}$	Test Result	Conclusion
Pre-Test	42	72.45	6.23	0.0719	0.1367	$L_s < L_{s(1-\alpha)}$	Normal

Pre-Test Data

Post-Test Results

The data yielded from post-test was first tested its normality by using Lielifors formula. The following is summary of Lielifors test.

Table 3. The Summary of Normality Test of Post-Test Data

Group	Number of Group	Mean	St.Dev.	L_s	$L_{s(1-\alpha)}$	Test Result	Conclusion
Post-Test	42	77.88	8.23	0.0725	0.1367	$L_s < L_{s(1-\alpha)}$	Normal

After the data was identified in normal distribution, the homogeneity test was done by using Bartlett test. The results of Bartlett test concluded that the post-test data was **homogenous**

Paired-Sample T-Test

To come to the conclusion whether or not there is a significant difference of students' achievement before and after the treatment, the means score of pre-test and post-test were compared and analyzed by using paired-sample t-test. The results of the analysis is shown in table 4.

Table 4. The Summary of Paired-Sample T-Test

Group	Number of Group	Mean	St.Dev.	$ t_0 $ (Absolute Score)	$t_{0.05}$ $t_{0.01}$	Test Result	Conclusion
Pre-Test		72.45	6.23		2.019		
Post-Test	42	77.88	8.23	-5.368788	1.954	$t_0 > t_1$	Significant

From the table 4 above, it is clearly seen that the absolute score of t_0 is higher than t_1 ($t_0 > t_1$). It means that there is a significant difference of the students' achievement in before and after the treatment. The students' score significantly increase after the the content and English Integrated test was implemented in CLIL classroom. Therefore, it is concluded that integrating content knowledge and English competences in CLIL classroom is effective. For the classroom- or curriculum-embedded assessments, tasks tend to emphasize extended, complex, skills-integrated, and multistage performances with the language, such that learners have ample opportunity to demonstrate what they have learned and in order to provide repeated and rich occasions for learning- and instruction-related feedback. Along these lines, recent interest in project-based, scenario-based, and learning-oriented assessment has spurred considerable additional test development on the basis of extended language task performances, the objectives of which seem to be (a) to create a more seamless instruction assessment- feedback relationship within language teaching and (b) to wash back onto language teaching and learning practice by providing meaningful and rich assessment information related to the functional uses of language for communication purposes (Purpura & Turner, 2014).

4. Conclusion

As it was previously mentioned that there are two objectives of this study, i.e. (1) to investigate the feasibility of the integration

of the content knowledge and English competences in assessing English proficiency, and (2) the effectiveness of the integration of content knowledge and English competences in assessing English proficiency. From the results of the study, it can be directly stated that content knowledge and English competences integrated assessment is feasible to be implemented in CLIL classroom; and further, it has also been statistically proven that content knowledge and English competences integrated assessment is effective to be implemented in CLIL classroom. The results of this study imply that innovation of technology-based assessment has great influence in students' achievement and this should be taken into account by the related parties. This study also has some limitations, i.e. this study was only done in a small setting and it is merely focused on the use of content knowledge and English competences integrated assessment in CLIL classroom. The future studies may investigate further about the effect of content knowledge and English competences integrated assessment in a wider research setting and with various accessible e-learning media.

References

- Barbero, T. (2009). Assessment in CLIL, in Järvinen H. (ed.), *Language in Content Instruction*, University of Turku. European Commission.
- Barbero, T. (2012) Innovative Assessment for an innovative Approach, *Perspective A Journal of TESOL Italy*, Special Issue on CLIL, 37 (2), 45-53.
- Briggs, M., Woodfield A., Martin C., Swatton P., (2008) *Assessment for Learning and Teaching*, Learning Matters, Exeter.
- Creswell, J. W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson Education Inc.
- Creswell, J. W., & Miller, D. M. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130.
- Dale, L., W. Van der Es & R. Tanner (2012). *CLIL Skills*. Leiden: Expertise centrum mvt.
- Eurydice. (2006). *Content and Language Integrated Learning (CLIL) at School in Europe*. Brussels: European Commission.
- Fitriani, Ika. (2016) *Grass root's Voices on the CLIL Implementation in Tertiary Education*. *Dinamika Ilmu* . 16 (2s): 211-220.
- Hüttner, Julia. Dalton-Puffer Christiane & Smit Ute (2013). The power of beliefs: lay theories and their influence on the implementation of CLIL programmes. *International Journal of Bilingual Education and Bilingualism* 16 (3): 267-284.
- Hönig, Ingrid (2010). *Assessment in CLIL: Theoretical and Empirical Research*. Saarbrücken: VDM Verlag.
- Lasagabaster D. and Sierra J. M. (2009). Language Attitudes in CLIL and Traditional EFL Classes. *Intenational CLIL Research Journal* 2009 Vol 1 (2): 4-17. Retrieved in March 2010 from <http://www.icrj.eu/12-73>
- Lauder N. (2011): *Cross-Curricular Resources for Primary and Secondary*. Retrieved in February 2010 from <http://www.clilcompendium>
- Purpura, J. E., & Turner, C. E. (2014). *Learning-oriented assessment in language classrooms: Using assessment to gauge and promote language learning*. New York, NY: Routledge.

Ima Isnaini Taufiqur Rohmah: The Feasibility and Effectiveness of Integrating Content Knowledge and English Competences for Assessing English Proficiency in CLIL

- Puspitasari, Arum., Anugerahwati, Miryam., & Rachmajanti, Sri., (2016). *Teacher's pedagogical and professional Competences in CLIL-Based Primary School in Indonesian context*, Paper presented at *International Conference on Education*, UM, Malang.
- Serra, C. (2007). Assessing CLIL in primary school: a longitudinal study,' *The International Journal of Bilingual Education and Bilingualism* 10/5: 582–602.
- Safari, M.U.K & Fitriati, S.W. (2016). Learning Strategies Used by Learners with Different Speaking performance for developing Speaking Ability. *English Education Journal*. 6 (2): 87-100.
- Sierra, Cecilia (2007). Assessing CLIL at primary school: a longitudinal study. *International Journal of Bilingual Education and Bilingualism* 10 (5): 582-602.