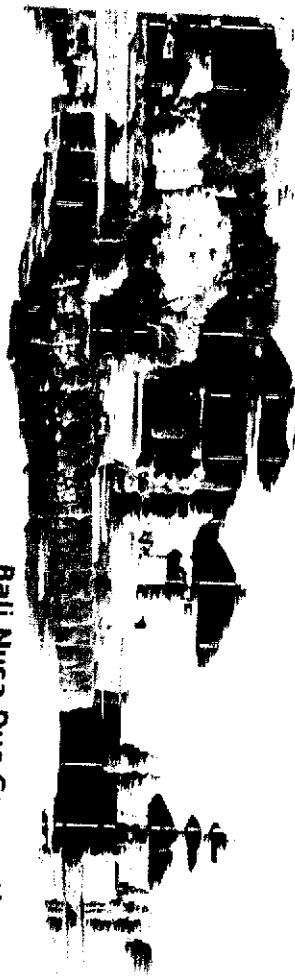# International Conference on Applied Science and Technology

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**Effectiveness of Content-Language integrated Le**
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Abstract - This research was aimed at investigating effectiveness
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mechanical engineering students who learn English as a supporting su
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(according to their English lecturer) were involved as research par
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given a six-session English learning each. The experiment group was
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# Effectiveness of Content-Language Integrated Learning (CLIL) Toward Students' English Competence

**Authors**

Made Sumartana, Wayan Sadiyani, Rai Jaya Widanta, Dana Ardika, Raka Sitawati, Ketut Suciani

**Corresponding Author**

Made Sumartana

**Abstract**

This research was aimed at investigating effectiveness of CLIL to improve students' English for Mechanical Engineering (EME) competence. EME is

designed for mechanical engineering students who learn English as a supporting subject. Two groups of semester two Mechanical Engineering student who had same level of English ability (according to their English lecturer) were involved as research participants. They were divided into two groups, one experiment group and one control group. Both groups were given a six-session English learning each. The experiment group was given CLIL approach and the control group was given English learning with conventional method and materials. The topic of lesson was 'welding'. Evaluation of learning activity was performance test of presentation. Research data obtained were students' performance of presentation and perception. Result of analysis revealed that students were more competent in presenting their work. Their perception on CLIL was positive.

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# Effectiveness of Content-Language Integrated Learning (CLIL) toward Students' English Competence

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*Abstract*—**This research was aimed at investigating effectiveness of CLIL to improve students' English for Mechanical Engineering (EME) competence. EME is designed for mechanical engineering students who learn English as a supporting subject. Two groups of semester two Mechanical Engineering student who had same level of English ability (according to their English lecturer) were involved as research participants. They were divided into two groups, one experiment group and one control group. Both groups were given a six-session English learning each. The experiment group was given CLIL approach and the control group was given English learning with conventional method and materials. The topic of lesson was 'welding'. Evaluation of learning activity was performance test of presentation. Research data obtained were students' performance of presentation and perception. Result of analysis revealed that students were more competent in presenting their work. Their perception on CLIL was positive.**

*Keywords—CLIL, english competence, mechanical engineering, performance-based test*

## I. INTRODUCTION

CLIL, a model of learning language, integrates competence and language. It is a dual-focused learning [1]. It functions to, not only achieve students' competence mastery but also language being taught. According to [2] and [3], CLIL enables students to achieve learning goal by focusing on some aspects, such as content, cognition, communication, as well as cultural aspects. On the basis of those aspects, students are triggered to think holistically (not only language which is taught implicitly but the four aspects). In order to pursue the goal, students are exposed with some activities, such as doing projects, discussing, giving information, making report, presentation and some others. It is suggested that prior instruction, preparation shall be undertaken completely, such as making 'mind mapping', making lesson plan, preparing scaffolding, and other supplement needed.

Some research on CLIL implementation effectiveness have been undertaken by theorists and scholars both in field of English and other areas. Alimin [4] investigated if character education could be integrated in CLIL. Specifically, the investigation in field of religion sociology was intended to recognize how character education was implemented in higher education institution. It was clearly obtained that integrating in CLIL was able to enrich CLIL itself and finally gave response to character education in Indonesia which has been integrated in curriculum. The research also responded to immersion of character education in curriculum which was not affixed with revision and development of learning model. It was suggested that text book weakness could be overcome by introducing them with specific 'reading' and 'writing'.

Research on CLIL implementation in English learning was carried out by [5]. CLIL is designed in purpose to improve learning, exercises, English competence, and to see cultural aspect of one language. Generally, CLIL is designed to improve inter-cultural communication skill, to prepare oneself for internationalization, to provide with learning an object from some different perspective, to improve holistic language competence, to improve verbal communication skill. It is also designed to be a learning model which is able to develop other learning model and practices in class as well as improve student learning motivation. There are two goal shot by CLIL implementation, 'content' and 'language'. In term of 'content', learning a subject using other foreign language is hoped to help students improve their knowledge about what is being learned. However, [5] Dalton-Puffer (2007) found that CLIL students obtained knowledge about content of the subject in the same amount as those who learn the same subject using students' mother language (first language). However, CLIL students could improve their foreign language competence being compared to those learning the same subject with conventional model. Dalton-Puffer [5] only found that students only could partially benefit from CLIL model, i.e. improving their language skill not their knowledge of the content.

Integration between content learning and language learning was de signed by [3] in field of technology. The course in technology was intended to guide students to make a project in technological subject and at the same time to reflect how and why such a model relevant. In addition it was in purpose to involve students in communicative activities. All students were invited in problem solving activity on electricity supply for a certain place. Students were assigned to investigate problems electricity supplying to the area, to make report and to present it individually to other groups. The students involved in the project were able to write report, to comment, and to lead tutorial. They were able to explain their activity during the project, to give feed back, references, illustration, and sequences of actions. Effectivines of CLIL in supporting communication skill in technological area was also observed by [6-9] and found that students involved were able to build communication competence through project which particularly involved multiple aspects and skills.

CLIL was often correlated with 'content-based instruction' (CBI). Banegas [10] investigated fearures of CBI and CLIL through three aspects of sociocultural, definition of 'language'in CBI and CLIL, as well as definition of 'content' in CBI and CLIL. In relation to aspect of sociocultural, [11], [12], dan [13]. viewed that human thought is mediated through physical devices and symbol like language. One of mediation in language learning is 'scaffold', which can be done through some ways, such as questioning, activating prior knowledge, making context of motivation, triggering students, giving hints, and giving feed back. It is supported by [14], [15] that language learners can quickly learn language when they acquire information through the language they learn. CBI has two goals, they are autonomous learning and adoption of learners' different roles, such as interpreter, explorer, ans well as content source supplier. Thus, learning and teaching content and language is a collaborative work between learners and instructors.

Language in CLIL and CBI functions as a media in laerning content. It is used as a means of communication and learning [2]. Language is also used as the main item in achieving communicative competence [17]. Coyle, Hood & Marsh [16] claimed that there are three functions of language in CBI and CLIL called Triptych, they are language of learning, language for learning and language through learning. Content is a non language or a scientific discipline. Term of content can be changed by subject area [18] since content refers to a product of teacher – students interaction.

This research was intended for different purpose from those that had been discussed. Alimin [19] investigated effectiveness if CLIL toward character education at university. It found that text book was a boring resource of material, thus it should be enriched by using reading texts ad materials supportive to students' writing activities. In addition, CLIL was enable students to obtain knowledge the same as students with first language. CLIL was able to improve their second language (L2) being compared to students with conventional model [5]. Bergman *et al.* [3]

enabled students to achieve learning goal by focusing on some aspects, such as content, cognition, communication, as well as cultural aspects. His reserach was inspiring people mind and the concept was then adopted and implemented in English learning in Mechanical Engineering class at Politeknik Negeri Bali. On the other hand, Banegas [10] observed three aspects , they were sociocultural, language, and content aspect and claimed that CLIL was effective when it was affixed with use of 'scaffolding' which enabled instructors to empower students to widen their insight to make concepts and use language in communicative practice.

This reserach intended to proven effectiveness of CLIL using involving four aspects of content, communication, cultural aspects and cognition proposed by Bergman at al [3]. Specifically, it was in purpose to proven whether or not CLIL was could improve students' English speaking skills.

## II. METHOD

The qualitative research involved two groups of student. Fifty semester-two-students majoring in Mechanical Engineering were invited to be research participants. Both groups of students had the same English level of ability after as recommended by their English lecturer. Group one was prepared to be experiment group which was given CLIL-based English lesson and group two was given conventional English lesson. Each group was given five-session English lesson. The topic of discussion was 'welding'. In the first session, CLIL group of students were grouped into some groups and each group was distributed with some tasks. The five-session English learning involved five stages, as follows: (1) grouping students and distributing and explaining what task and how to do it; (2) control students who had been working out their task in group; (3) each group by aspect present their work; (4) students worked in group to prepare their report and presentation in front of class; and (5) each group presented their work in front of class and teacher evaluated and give feedback upon learning, students were given test to measure their English competence. The test was in form of role play that they have to perform in form of speech. Their performance (control and experiment groups) was evaluated using scoring rubric which measured five aspects, such as fluency, pronunciation, comprehension, grammar, and complexity [20]. The data of test result of both groups were analysed using descriptive statistics to see difference between both groups' achievement. Apart from performance-based test, participants of experiment group were also given questionnaire to know what their perceptions like about CLIL model implemented in English lesson.

## III. RESULT AND DISCUSSION

### A. *Effectiveness of CLIL*

CLIL effectiveness was measured with a test in form of role-play. Topic of test was chosen in the curriculum of English applied in class. The test measured how competent students were at English, both language usage or forms and use or communication skill. It could clearly recognize that control group's achievement was 303. Their average score was 60.6. Research participant of this group was best at 'comprehension' aspect, with score 64. However, their scores of 'fluency' and 'accuracy' were almost similar, they