

A Pilot Study on the Effectiveness of Co-Teaching: A Cross-Discipline Approach to Enhancing Teaching and Learning in the Trade Specific Context

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Abstract

Most of the students admitted to the post-secondary institutions in Hong Kong often tend to appear lowly motivated and reluctant to learn English. What are the possible reasons? Lacking confidence? Lacking successful learning experience? Failing to see the value of English in relation to their future professions? Lacking the need to speak in English in their current study? Aiming at rekindling students' interest in learning English, this preliminary study was to find out students' perceptions on co-teaching and its impact on the learning and teaching in a vocational context.

In this study, 113 vocational students were arranged to take trial co-teaching lessons conducted in trade-specific workshops, in which they learnt vocational subject knowledge in English. Teaching materials were tailor-made to better fit the language needs of the industries after 3 industrial visits and 8 consultation sessions with vocational subject teachers. Data were collected from questionnaires, focus group interviews and discussion sessions so as to understand both students and teachers' perspectives on the learning and teaching of vocational subject knowledge and English through co-teaching. It was found that students were more motivated and active in learning as they experienced how English was meaningfully and practically applied in the trade-specific context.

Based on the preliminary observations from the trial lessons and analysis of the data, co-teaching seems to be an effective teaching method to increase students' learning motivation. Perspectives including benefits and concerns regarding co-teaching from both students and teachers will be highlighted in this paper.

Keywords: Collaboration, cross discipline, motivation, vocational education, language learning

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Introduction

Motivating students for learning has always been a key question for teachers in the vocational school. Cheng & Zoltan (2007) recognized that motivation is a critical factor for “determining success in second language (L2) learning” (p. 153). It is thus necessary for teachers to adopt strategies that could effectively motivate students to learn. The current study took place in a post-secondary institution in Hong Kong which specializes in offering vocational and professional education and training at Diploma level to Secondary three to six school leavers. Trade (Content subject) programmes covering the areas of business and services, engineering, design and technology are offered while students can choose to enroll on a programme that suits their needs and interests. All study modules except English are delivered in their first language (L1, Chinese). Upon successful completion of all modules, students can choose either to join the workforce of the relevant industry or to articulate to a higher level of study (e.g. higher diploma programmes).

As L1 Chinese is used as a medium of instruction for most of the modules, students have limited exposure to the target language L2 and may not understand the value and the relevance of learning English to their studies and future career. However, there has always been a strong demand for English proficiency to serve different needs regardless of their future progression pathway for work or study in Hong Kong. To raise students’ awareness of how English is practically and meaningfully applied in trade-specific contexts so as to further motivate them to learn English, cross-discipline collaboration between language and content subject teachers is considered to be one of the possible options.

Literature Review

Co-teaching: an example of cross-discipline collaboration

“Co-teaching” or “collaborative teaching” is generally defined as “two or more people sharing responsibility for teaching some or all of the students assigned to a classroom” (Villa, Thousand & Nevin, 2013, p. 3). This approach had already been used in the 1960s in US schools when it was popularized as an example of progressive education (Villa, Thousand & Nevin, 2013). Since then, there have been a number of sociocultural changes related to educational concepts and legal acts or laws which acted as the push factors of the development of co-teaching, such as the “Education for All Handicapped Children Act” (Public Law 94 – 142) in 1975, the “No Child Left Behind Legislation” in 2001, and the “Individuals with Disabilities Education Improvement Act (IDEIA)” in 2004 (Thousand, Villa & Nevin, 2007). Co-teaching has consequently been closely related to differentiated education and inclusive education and became “the most popular inclusive educational model” (Mageria & Zigmund, 2005, p.79). As this method is more widely adopted, more recent research studies have also been done in different countries or regions without specifying inclusive education but merely a cooperation of teachers, such as the US (Weiss & Lloyd, 2003), Australia (Lee, 2013), Taiwan (Luo, 2014), and Hong Kong (Lo, 2015).

Among the six approaches to co-teaching, namely one teaching, one assisting (supportive teaching), station teaching, parallel teaching, alternative teaching, team teaching, and complementary teaching (Cook & Friend, 1995; Thousand, Villa & Nevin, 2007), one teaching, one assisting (supportive teaching) and team teaching were seen as more appropriate for the context of the present pilot study. One teaching, one assisting, or supportive teaching, is the type of co-teaching where one teacher

takes up the leading role to teach and the other teacher assists the students who need help while for team teaching, a team of co-teachers share the responsibility for teaching a class, including preparation, instructing, and assessing (Cook & Friend, 1995). In brief, these two models would allow more opportunities for teacher collaboration while serving the practical needs of students and teachers in the context.

The need for cross-discipline collaboration in the vocational context

An approach based on Content and Language Integrated Learning (CLIL) is adopted to drive the co-teaching initiative. CLIL is “an umbrella term” that “encompasses any activity in which a foreign language is used as a tool in the learning of a non-language subject in which both language and subject have a joint role” (Marsh, 2002, p. 58).

Content-based programmes are practiced in various forms in different educational contexts such as Language Immersion, English for Specific or Academic Purposes (ESP / EAP) and Content-based Language Teaching (CBLT) (Lin & Cheung, 2016). Lying in the middle of the continuum is CLIL. With the concept of “integration”, CLIL differentiates itself from other similar language teaching methodologies and it emphasizes the equal status of content subjects and language subjects since “in essence it operates along a continuum of the foreign language and the non-language content without specifying the importance of one over another” (Coyle, 2006, p. 2). It also aims to safeguard the subject being taught whilst promoting language as a medium for learning as well as an objective of the learning process itself (Marsh, 2003, p. 37).

Previous research efforts have proven that CLIL brings about promising benefits to students’ L2 learning. For instance, Nold et al. (2008, p. 13, as cited in Kupetz & Woltin, 2014) found that “CLIL students are about two years ahead of language learners taught in conventional foreign language classes” as they demonstrated higher abilities in fields such as text reconstruction, listening and reading comprehension, and grammar. This encouraging finding could be explained by students getting “frequent L2 exposure” and “learning time within an authentic and communicative CLIL environment” (Nold et al., 2008, p. 13, as cited in Kupetz & Woltin, 2014). The successful implementation of CLIL requires efforts from both language teachers and content teachers. One of the suitable approaches to implement CLIL is co-teaching. Lo (2015) has further discussed the success factors of co-teaching namely the enhancement of teachers’ awareness of students’ needs, appropriate curriculum mapping and development and the changes in teachers’ pedagogical focuses.

According to Lin & Cheung (2016), their Genre Egg Framework can be adopted to enhance both the language and content teachers’ academic language-awareness and content-awareness. In this framework, academic language is divided into five levels, namely academic vocabulary, sentence patterns, academic functions, academic text-types (genres), and curriculum context. One of the main advantages of this framework is that co-teaching lessons can happen at any level. Co-teachers can examine the language use in the contexts of their content subjects using either a top-down or a bottom-up approach and develop suitable models for their needs (Lin & Cheung, 2016). For example, students from the Automotive Technology programme are expected to understand the manual of car maintenance. Co-teaching can thus be adopted at the academic text-types level, where students are taught to read the manuals in their second or foreign language.

Effectiveness of co-teaching

It is generally agreed that co-teaching brings a lot of benefits to students, teachers, as well as schools. When learning content subjects in L2, students are intensively exposed to L2 input and output opportunities within the authentic and meaningful contexts, they can then incidentally absorb L2 (Coyle, Hood & Marsh, 2010). Teachers could also gain more support as they work together to share the responsibility of teaching a class. It is worth noting that team spirit can also be enhanced (Cook & Friend, 1995; Thousand, Villa & Nevin, 2007; Wilson & Blednick, 2011). With carefully designed learning tasks, co-teaching could also raise students' linguistic competence and confidence, help them develop a wide range of skills and increase the motivation in both students and teachers (Coyle, 2006).

In the Hong Kong context, teachers are normally divided into different subject departments and hence, they may not be well aware of other departments' teaching plan. Through co-teaching, English teachers would be more aware of the students' needs in order to learn content subjects through English whereas the content subject teachers would understand more about students' difficulties regarding language and how to incorporate language teaching in their lessons (Lo, 2015). Despite the benefits of co-teaching presented, there are also difficulties on implementation, for example, insufficient time for planning (Wilson & Blednick, 2011) and the lack of firm beliefs from teachers in the effectiveness of L2-content collaboration (Davison, 2006). When putting co-teaching into practice, these aspects have to be carefully considered.

Previous research studies on co-teaching: a literature gap

Although a considerable amount of research has been devoted to exploring issues regarding co-teaching in different regions and at various school levels (see, for example, Walther-Thomas, 1997, Weiss & Lloyd 2003, Luo, 2014; Lo, 2015), very limited research has investigated co-teaching lessons conducted in Hong Kong. Moreover, there has not been any similar research carried out in a vocational school context where the content subjects are delivered in L1 but not in L2. The present study aimed to address this research gap by exploring how co-teaching could be carried out in a vocational school context in Hong Kong and finding out the perceptions of students under the study. The research question of the present study was:

How do students perceive co-teaching lessons conducted in a trade-specific context?

Methodology

The collaborative project: pilot co-teaching lessons

As the content subjects are mainly delivered in L1 in the vocational school of the current study, the language team was tasked to explore how co-teaching could be practiced so as to increase students' exposure to L2 and enhance their learning of content subject modules. The collaborative project, conducted in two rounds of trial lessons, lasted for 12 months between January 2015 and December 2015. It was carried out by the language team in collaboration with 6 trade (content subject) programmes, namely Print Media, Mechanical Engineering, Building Services, Automotive Technology, Hairdressing and Beauty Care. The project leader was also the principal researcher of this study and hence the researcher was playing an "insider" role in this project. It was under such circumstances that this pilot study was conducted.

The collaborative project involved the design and implementation of 8 co-teaching lessons of cross-discipline collaboration in the form of co-planning and designing the lessons, making reference to the practice done by Lo (2015) and Mohan (1986)'s concept of content and language integrated learning. To facilitate success, several meetings were organized for each of the co-teaching lessons. Teachers involved in each lesson and a member of the research team attended all the collaborative meetings to ensure support. First, consultation meetings were arranged for the language teachers and trade (content subject) teachers together with the relevant trade programme leaders to confirm understanding of the purpose of the project and address concerns, if any. The two teams (language and trade teachers) then moved on to identify students' learning needs in relation to their trade specific context. After that, they discussed the trade module contents and mapped on a suitable topic for co-teaching. Teaching and learning materials were then prepared by the language teachers in consultation with the content subject teachers. Some content materials were translated from L1 (Chinese) to L2 (English). The learning materials were carefully rewritten with a scaffolding to facilitate learning by creating an authentic and meaningful context. With this principle in mind, the co-teaching lessons were conducted in simulated workplace situations in the trade-specific workshops.

Participants

The teachers involved were initially invited by the project leader to take part in this collaborative project and the students involved were randomly identified by the corresponding content subject teachers. A total of 10 language and 7 trade teachers with 113 students agreed to experiment the co-teaching lessons. The student participants (aged 16-18) were of different years of study (1 to 3 years) in the vocational school.

Research instruments

In order to answer the research question, that is to explore how students perceive the co-teaching lessons conducted in a trade-specific context, data were collected from 2 sources, including a student questionnaire as well as focus group interviews with students and teachers.

Student questionnaire

The purpose of the student questionnaire was to collect quantitative data concerning students' perceptions of the co-teaching lessons they experienced. Open-ended questions were also used to supplement the quantitative data with qualitative one.

A total of 3 classes were randomly selected out of the 8 classes to participate in this research. In other words, convenience sampling was adopted. The questionnaire survey was administered by the researchers immediately after the co-teaching lesson while students' memory of the lesson experience still remained fresh. Although the questionnaire was written in English, Chinese (L1) explanations were given by the researchers in administering the survey so as to avoid misunderstanding. Students were also allowed to give their responses in Chinese. All the 44 questionnaires distributed were returned and valid for analysis, achieving a response rate of 100%.

Focus group interviews with students

To get a better insight into students' perceptions of the co-teaching lessons, students were asked to participate in a focus group interview with the researchers on a voluntary basis. A student interview guide was prepared for the research team to conduct semi-structured interviews with the volunteer students.

In collecting opinions from students, 6 focus group interviews were conducted with 24 student volunteers. The interviews were done in L1 (Chinese) to facilitate communication and encourage discussion among the participants. The interviews lasted for around 30 minutes each and were hosted by the researchers.

Focus group interviews with teachers

With a view to understanding the teachers' perceptions of the co-teaching lessons, both trade and language teachers were invited, on a voluntary basis, to take part in a focus group interview with the researchers. A teacher interview guide was prepared for the researchers to conduct semi-structured interviews with the volunteer teachers.

A total of 6 focus group interviews were conducted with 10 language teachers and 7 trade teachers volunteering to express their views. To facilitate communication and encourage discussion, the interviews were conducted in L1 (Chinese). The interviews were moderated by the researchers and they lasted for around 30 minutes each.

Results

Students' perceptions on co-teaching lessons conducted in a trade-specific context

This section examines whether or not co-teaching is a motivating strategy to students. The results of the questionnaire and focus group interviews with students and teachers are presented separately.

Questionnaire – students were positive about the pilot co-teaching lessons

As shown in Figure 1 below, an overwhelming percentage of students commented that the pilot co-teaching lessons were interesting, motivating and useful while only a few of them had negative feedback. It is thus safely concluded that most students were positive towards the pilot co-teaching lessons.

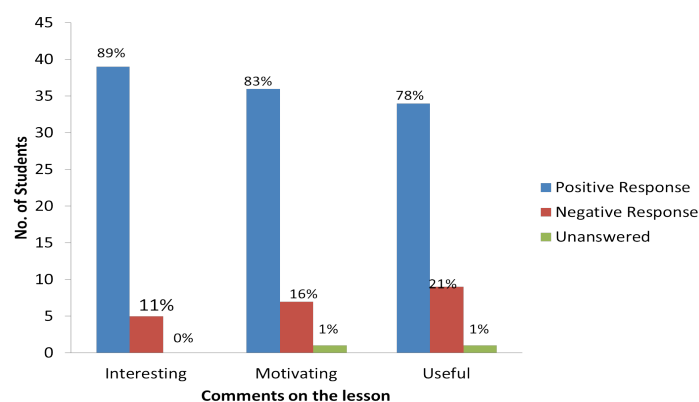


Figure 1: Student questionnaire results

According to the written comments of the students, they reflected that the co-teaching lessons were a freshly new experience to them and they were happy that they could learn more trade-related terminology in English. Most of them enjoyed the lessons because they could have more exposure to English in the trade-specific contexts. More qualitative feedback can be found under the part of focus group interviews.

Focus group interviews

Students' Feedback

Most students found the pilot co-teaching lessons unconventional and interesting since English elements were incorporated into the trade lesson. They enjoyed the workshop practice most while they found classroom instruction least enjoyable. Students explained that they preferred hands-on practice since the practical approach better suited their learning style. In addition, they expressed their interest in learning the terms related to their trade subject in English.

Students' own English proficiency, however, was highlighted as the biggest obstacle during the lesson. Although students enjoyed learning the trade terminology in English, they encountered some difficulties in understanding the trade topic in English, especially when it came to a topic that required a higher level of language proficiency for comprehension. They stated that they welcomed this kind of lessons on a supplementary basis, such as having one or two lessons per month, without incorporating it into their formal learning. Yet, they expressed their concerns over having this approach on a long term basis and being assessed in English. To students, as learning trade subjects in English has already presented challenges to them, they would probably be demotivated towards learning if trade knowledge were to be assessed in English as well. For this point, it is worth noting that students' language ability and attitude are critical factors to be observed.

Teachers' Feedback

In the focus group interviews, teachers reflected that students' participation in the pilot co-teaching lessons was very satisfactory. They were proactive in giving responses and participating in the activities because the lesson was something out of the ordinary to them and the variations of lessons could increase students' motivation level towards the target learning materials. The inclusion of the English language in a trade lesson could help students' acquisition not only of their English language learning but also their trade specific subject. This would also increase their motivation for learning and enhance their perceptions towards the English language with satisfactory learning outcome. It seems that conducting the lesson in the trade-specific context could be motivating to students as they recognize its meaning.

As reported, a great deal of manpower and time, however, had been spent on preparing for the lessons since all newly developed materials required extra amount of time and effort during the initial stage. Teachers also expressed that a co-teaching lesson enriched with English language elements would take more time to conduct than merely a trade lesson conducted in students' native language, L1. English teachers also revealed that not only was it difficult and time-consuming to digest the trade teaching and learning materials, it was also difficult to select topics for co-teaching as the theory-based subjects and complex instructions were not suitable for the co-teaching lessons. In addition, the trade learning materials were originally written in Chinese and it was time-consuming and strenuous to choose the right translation of

some jargons. Trade teachers also opined that if students were required to use English in a load of trade subjects, it would be too challenging for them and would probably hinder their learning effectiveness and efficiency and further demotivate their learning towards respective trade subjects.

Discussion

It has always been the language and trade teachers' will to explore effective ways to help students learn effectively in the vocational context. As reported above, there has been an inseparable relationship between language and content in facilitating learning in the educational and vocational contexts, hence, collaboration between L2 and content subject teachers is beneficial. However, to carry out co-teaching and warrant better effectiveness of this move in the vocational school on study, there are 3 areas to be addressed: student and teacher readiness, appropriate level of language use and support for collaboration.

Confidence building: student readiness

Despite the challenges identified, the present study has initially revealed some benefits of co-teaching while its effectiveness on L2 and content knowledge development is yet to be measured. As most of the students admitted to the vocational schools are mainly from Chinese (L1) medium schools with unfavourable experience in L2 learning, they currently feel more comfortable in learning the content subjects in L1. However, it is important to build up students' confidence in this innovative teaching approach so as to secure better success. It seems Lin & Cheung (2016)'s Genre Egg model could help address this issue. A bottom-up approach could be adopted to build up students' confidence before progressing to a higher level of content and language integrated learning. Since students enjoyed hands-on practice, teachers could consider including more authentic practice tasks in the teaching. In considering students' preference for co-teaching lessons to be arranged as "add-ons" instead of formal lessons, a thoughtful implementation plan supported by motivating activities should be carefully designed.

Confidence building: teacher readiness

As the project was done without adequate training for teachers, the two teams of teachers found it hard to cope with the experiment for various reasons. For language teachers, it was extremely challenging for them to understand the trade knowledge, and then translate it into English materials for co-teaching. For trade teachers, the need to put their teaching in English is another concern since they have not been trained in using English as a medium of instruction (MOI). It appears beneficial to students as both teams of teachers have become more aware of students' learning needs. Nevertheless, it is essential to build up trade teachers' confidence especially in using English as the medium of instruction. Hence, a structured staff training programme is needed.

Curriculum mapping and development: appropriate level of language use

Comprehensible input (Krashen, 1985) facilitates comprehensible and meaningful output. Carefully designed learning materials with appropriate level of language use can help enhance students' learning of trade topics. The learning materials concerned have to be rewritten in L2 with appropriate level of language to assist students' understanding and learning including the correct use of grammar, vocabulary and sentence patterns. It is of paramount importance that students find the lesson

motivating, interesting and useful to them. As stated by Lo (2015), academic language involved in learning content subjects is different from everyday language in terms of lexis, syntax and discourse organisation (Coffin, 2006; Schleppegrell, 2004). These differences in linguistic features will lead to difficulties for L2 learners who have to learn content subjects through an L2 (Gibbons, 2009). Hence, topics selected for co-teaching have to be carefully mapped with the learning needs and redeveloped with clear scaffolding in consideration of students' language ability and attitude towards learning content subjects through L2.

Availability of resources: support for collaboration

As echoed by Lo (2015), Wilson & Blednick (2012) and the results of the current study, teachers need to invest ample amount of time for collaborative meetings, development of lesson materials and other preparation work, which has been a big pressure for them. It is of utmost importance for teachers to be released from their normal workload so as to enable their efficient contributions to future collaborative projects.

Conclusion

This study examined students' perceptions towards pilot co-teaching lessons conducted in the trade-specific context with a view to integrating the learning of content and language subjects. As presented above, the co-teaching lessons have provided a refreshing experience for each of the student groups as a one-off experiment. They were particularly designed with a careful scaffolding of learning activities to facilitate learning and find out students' reactions to this innovative approach. In general, students welcomed the lessons as additional opportunities which could enrich their learning experience without going through the pressure from assessment. Though the literature has informed that students can acquire an L2 incidentally through intensive exposure to L2 input and output (Coyle, Hood & Marsh, 2010), the actual effectiveness of co-teaching in enhancing teaching and learning in the vocational context has not been empirically evaluated.

Although the present study has reported some positive comments from both the students and teachers, it has some limitations. First, the study was a small scale research, involving 1 co-teaching lesson for each trade programme only. As mentioned, the project leader played multiple roles including the language team leader and the researcher. The teachers involved were committed and cooperative in this project. Hence, the potential positive feedback collected in this study was to a certain extent based on some favourable conditions and so one has to be cautious when interpreting the findings of the present study. Second, there exist unbalanced roles and responsibilities between the language and trade teachers. The language teachers were playing a leading role in the planning, designing of learning materials and conducting the lessons. Also, the lessons were arranged to be conducted in the trade-specific workshops, which was a totally new experience for the participants. To a certain extent, it was quite unnatural for both the students and teachers to have the lessons conducted in such settings. Furthermore, the researcher did not want to put too much pressure on the teachers, so the lessons were not observed to closely investigate what actually happened in the lessons though they were video-taped.

Despite the potential benefits of co-teaching in the trade-specific context, there is a need to be sensitive in taking this new approach forward. Students' language ability and attitude towards learning trade knowledge in L2, teachers' confidence in using English as MOI and capability in developing appropriate learning activities in L2, and most importantly, the availability of resources to facilitate co-teaching to happen are all issues to be addressed. Nonetheless, mindset change, confidence building, teacher training, professional development and cross-discipline collaboration are all long-term processes. Short-term programmes and one-off experience are not sufficient to transform practice. Hence, a larger scale of research with comprehensive evaluation on the development of L2 and content subject knowledge (Coyle, Hood & Marsh, 2010) through cross-discipline collaboration should be carried out with appropriate implementation plan and sustainable staff training programme in place.

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