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Practice Article

Making Art in CLIL: A Cognitive Perspective

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Abstract

As one component of the four C's Framework, educators employing Content and Language Integrated Learning (CLIL) methodologies are encouraged to design classroom tasks that enable students to engage in higher-order thinking processes. This paper aims to break down the cognitive processes required in art making through observations of a CLIL art/art history course taught at a Japanese university. The observations indicate that art-making encourages a broad range of thinking processes, both higher- and lower-order, and therefore supports the inclusion of artistic activities as a component of CLIL education. Additionally, art-making may provide an alternative to the challenges of assessment raised in CLIL methodologies by allowing students to display content learning through a non-language-dependent medium, namely visual art. While these observations are promising, further research is required to ascertain the true role that art-making can play in the CLIL classroom.

4つのCのフレームワークの1つとして、内容言語統合学習（CLIL）の方法論を採用する教育者は、学生がより高次の思考プロセスを採用できるような授業課題をデザインすることが奨励されている。本稿では、日本の大学で開講されているCLILの美術／美術史コースの観察を通して、アートメイキングに必要な認知プロセスを分解することを目的とする。この観察から、アート制作は高次・低次を問わず幅広い思考プロセスを促すことが示され、したがってCLIL教育の構成要素として芸術活動を取り入れることを促進することを目的としている。さらに、アート制作は、CLILの方法論で提起される評価の課題に対して、学生が言語に依存しない媒体を通して学習内容を示すことを可能にする代替手段を提供する可能性もある。これらの観察は有望であるが、アート制作がCLIL教室で果たせる真の役割を確認するためには、さらに詳細な研究が必要である。

Since the initial development of Content and Language Integrated Learning (CLIL) in the 1990s in Europe, it has become a popular philosophy for language instruction worldwide. While the adoption of these ideas occurred later in Japan, CLIL is very much on the rise within Japanese educational institutions, with Ikeda et al. (2013) describing CLIL in Japan as "a new-born baby" that is "slowly and steadily crawling forward in Japanese education" (p. 2). Additionally, Yamano (2013) suggests that the language pedagogy objectives of the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) align well with findings from extensive CLIL research in Europe.

Research into the role of art in the language classroom, however, is much more limited. Previous studies indicate that engagement with art can help foster critical thinking skills when incorporated into language programs in Japan (Mertens, 2019; Swanson, 2023) and that drawing can help language learners commit new vocabulary to memory effectively (Masson, 2020). Additionally, Masson & Carroll (2024) have explored the role that creating art can play in allowing language students to express their identities as multilingual individuals in an increasingly internationalised world. Although existing research is limited, it appears that art can offer benefits when incorporated into language education. These studies, however, do not specifically focus on cognitive processes, presenting a gap in the research that this paper aims to begin to address.

In Japan, as with many countries, art class time has become increasingly squeezed in favour of mathematical, scientific and technological skills. Komatsu (2017) states that existing art education in Japan is an efficient means of industrial development rather than an opportunity for self-expression, and Naoe (2003) goes as far as to describe Japanese art classrooms as "inorganic" and "factory-like" (p. 102). It would appear, then, that art education is not highly valued in Japanese educational institutions, despite the opportunities for personal and cultural development that it can offer. Additionally, research suggests that common issues in language education in Japan, such as low motivation and low willingness to communicate (Ushioda, 2013; Yashima, 2013) could at least be in part ameliorated through arts integration in language curricula (Martello, 2017; Tiley, 2022).

The motivation for this research comes from the intersection of these points – can the benefits of art education be realised in a language education context through the CLIL framework? Due to the breadth of this topic, this paper will focus on one component of Coyle's highly influential 4 Cs framework (2010), specifically looking at cognition. This focus on cognition is retroactive - The course that provided the basis for this work was intended as a broad exploration of the area, and the focus on cognition was selected reflectively as one of the more interesting themes that emerged from the experience.

Theoretical Framework

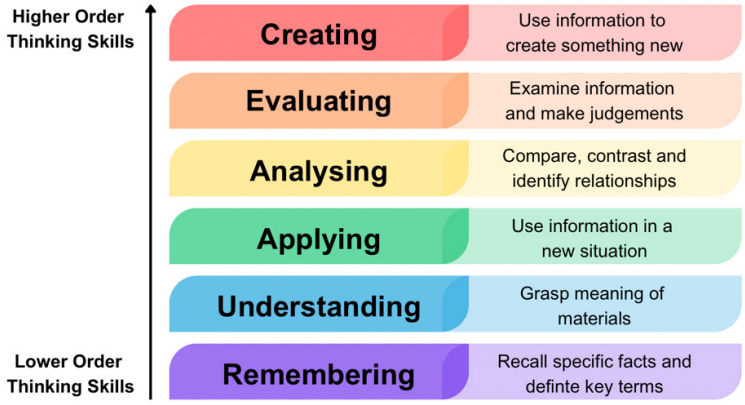
When implementing CLIL courses, researchers often rely on Coyle et al.'s highly influential Four C's framework (2010). This framework has become almost synonymous with CLIL, and therefore underpins a lot of the existing research into CLIL, both art-based (Korosidou & Griva, 2014; Tsantari, 2016) and otherwise. Coyle et al. (2010) outline four domains–Content, Communication, Cognition and Culture - that should form the basis of all CLIL lesson planning in order to promote effective learning.

Cognition in CLIL

When outlining the cognitive domain of the four C's framework, Coyle et al. (2010) draw upon the revised version of the cognitive domain of Bloom's Taxonomy (Anderson & Krathwohl, 2001). This outlines six categories of thought processes, detailed in Figure 1 below.

Figure 1

Blooms Revised Taxonomy – Cognitive Domain (after Anderson & Krathwohl, 2001)



In short, for effective CLIL to occur, Coyle et al. (2010) state that classwork should enable students to engage higher-order thinking skills to create a meaningful and cognitively engaging educational experience. As a result, the cognitive requirements of the CLIL framework are directly derived from Bloom's Taxonomy, and the higher-order thinking skills indicated in Figure 1 could be considered a requirement for successful CLIL. Therefore, to evaluate the cognitive opportunities offered by art education in the CLIL context, results of research into art education and observations from the elective course will be compared against Bloom's revised taxonomy.

Cognition in Art Making

The process of creating artwork clearly reaches the highest cognitive level of Bloom's Taxonomy–Creating. However, research suggests that art-making is a much more nuanced and cognitively engaging process (Eisner, 2002). Students begin the process with some concept or image of what they intend to create but must then contend with a series of limitations. This can include the limitations of the artistic materials in question, time limitations and technical limitations. The latter limitation is particularly relevant to students with limited experience in art-making, as their lack of technical skill with the materials in question means that the produced work is unlikely to align with the students' initial concept for the work.

In short, technical, material and scheduling limitations mean that students are unlikely to produce work that meets their own initial standards, something which Eisner refers to as 'the problem'. It is, however, in dealing with 'the problem' that Eisner claims that students truly learn from the creative experience, stating that:

> The students inability to deal with the problem to their satisfaction motivates attention and experimental trial; they need, for example, to look hard at what they've created in order to see what is there, to make judgements about it, to use their skills to address it and assess the results. It is in coping with the resolution of a dissatisfaction – the conversion of something less than satisfying into something that satisfies– that children learn from the activity. (Eisner, 2002, p. 95-96)

In this resolution of dissatisfaction with their own work, students must analyse their own work to isolate the source of the dissatisfaction and evaluate how they can address this given the limitations outlined above. As such, Eisner suggests that in creating their own artwork, students engage with their own work in both an analytical and evaluative way ("What is it about my work that is not satisfying?" "Does this adequately convey what I am trying to express?"), suggesting that students are employing multiple higher order cognitive skills from Bloom's Taxonomy in addition to the 'Creating' level.

Despite this, even setting aside the language context, empirical studies at the intersection of art-making and

cognition remain relatively scarce. Heaton (2021) posits that this is due to the complexity of cognitive processes, however, some researchers have attempted to address this. One such study conducted by Yokochi & Okada (2005) explored these processes through a case study, analysing the artistic processes of one subject through observations, interviews and field tests. The results of this study echo the thoughts of Eisner, indicating that the formation and evolution of mental images, combined with the overcoming of limitations in medium and technique, come to the fore in artistic endeavours.

Context

The observations in this article are based on the researcher's experience of teaching an art-based CLIL course for advanced-level English learners (CEFR B2+, GSE 67-75) at Ritsumeikan Asia Pacific University, an international university in southern Japan. The course was designed to serve as an initial investigation into the role that art education can play as a component of language learning and was therefore kept relatively simple, with the goal of identifying potential research themes for deeper exploration in future courses. A total of 10 students enrolled in this course, five from Japan and the remaining students from Thailand, Cambodia, India, Italy, and Taiwan. The course was delivered during the Fall Semester of 2023, running from October 2023 until January 2024, and consisted of two 100-minute classes per week.

The course covered developments in art from the mid-19th century until the present day, loosely divided into four units. Each unit grouped several art movements and covered four classes, beginning with a preliminary discussion class where students were encouraged to discuss the target artwork for the unit and try to draw their own conclusions about the work in question. This was followed by two teacher-led, seminar-style classes explaining the concepts while also providing ample space for student discussion. Each unit concluded with a student-led show and tell class in which students introduced a work of art based on their own independent research into the unit movements. Each unit also involved an assessed essay, encouraging students to further explore the movements in question through their own self-guided research. To support language development, the course included speed reading exercises to develop research skills, and workshops on discussion and writing skills. The course also included a field trip to a local gallery.

However, the main area of interest for this exploration into the cognitive processes of art making comes from the two creative projects that were also included in the syllabus. Students were given an open brief, but were encouraged to experiment and discuss their ideas both with the teacher and each other. Paper, brushes, and acrylic paint were provided, but students were free to bring in their own materials if required. Students were given three 100-minute periods to complete their work; however they were also free to work outside of this time. In practice, most students spent the first period experimenting with ideas and techniques before working on their piece in the second and third periods.

Outcomes and Observations

The preliminary nature of the elective course means that the results are purely observational at this stage. However, based on these emerging themes, further research can be designed and implemented to provide more definitive data on the cognitive dimensions of art making as part of language education.

Development of Initial Concepts

As part of this cognitive process, there were numerous instances where students gravitated towards the previously taught content of the class, exhibiting lower-order thinking skills associated with remembering and applying, as defined in Bloom's Taxonomy. Most students' initial concepts for their work appeared to be influenced by the timing of the creative projects within the course–the first was halfway through the semester, meaning students had learned about Impressionism, Expressionism, Fauvism, Abstraction and De Stijl. Accordingly, student work reflected various aspects of this. The second project was delivered after the completion of the final unit, with students adopting more modern artistic ideas such as Conceptual Art, Participatory Art and Pop Art.

At this stage, students likely had a highly idealised image of the work they intended to create, composed of various ideas derived from class content as well as other sources. However, in the development of an initial concept, students were employing lower-order thinking skills (remembering, applying) in order to achieve higher-order thinking skills (creating).

Cognitive Processes in Art Making

Once students began working on their pieces, further cognitive processes became evident as students began to grapple with Eisner's 'problem' (2002). A great deal of this process occurred internally, as the students worked through the limitations of technique, materials, and time to create a satisfying piece of work. However, many students confirmed this process verbally in presentations, voicing ideas along the lines of "I was not satisfied with this, so I tried…". This provided confirmation, albeit limited, of the process of self-evaluation and experimentation with the overall aim of improving satisfaction, as Eisner (2002) suggested.

In the project classes, students often stepped away from their work to re-evaluate and experiment with different ideas to get closer to their 'ideal' image and even consulted each other for ideas. As a result, students ended up invested not only in their own work but also in that of their classmates too as their ideas had been incorporated into each other's work as part of this problem-solving experience.

Application of Content to Solve Problems

As part of this creative experience, there were some instances where the students employed another strategy to solve 'the problem'. Rather than experimenting or consulting classmates, these students returned to the content of previous classes to directly address the shortcomings in their work. For example, one student painting a landscape wanted to include a greater feeling of movement and dynamism in their work. This led them to revisit the work of Van Gogh specifically The Starry Night (1889), and The Church at Auvers (1890), covered in class some weeks prior, and to try to emulate the dynamic style in their own art. Another student employed a similar reflective process when trying to create a conceptual work based on their experience of university. Their desire to depict the communal and social nature of university life led them to the ideas of participatory art, particularly the work of Yoshihara (Please Draw Freely, 1956) and Abramović (Rhythm 0, 1974), which had, again, been covered in a previous class. The result was a collaborative and performative art piece that involved all class members and thus satisfied the creator's original desire.

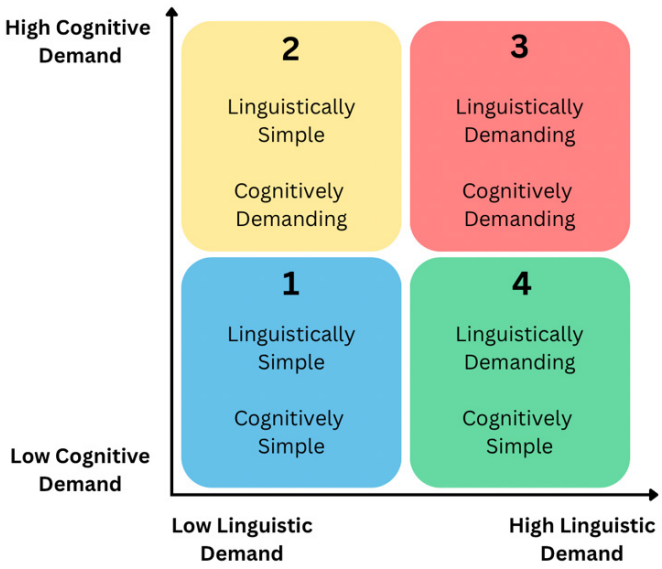
In both situations, the students returned to class content to help them develop their artwork, thus displaying an understanding of content. When considered in tandem with the non-linguistic nature of the creative process, this may offer a solution to one of the issues with CLIL outlined by Coyle et al. (2010)–challenges associated with assessment.

The Role of Language in Art Creation and Presentation

One interesting feature of the art-making process is that while cognitively demanding, it did not place any specific linguistic requirements on students. Such activities can be categorised using the CLIL Matrix (Coyle et al., 2010), shown in Figure 2.

Figure 2

The CLIL Matrix (after Coyle et al., 2010)



The matrix is divided into four quadrants and provides a simple way of representing classroom tasks in terms of cognitive and linguistic demands. Accordingly, the creative projects in the elective would be located in Quadrant 2–high cognitive demand, low linguistic demand. Coyle et al. (2010) state that a focus on Quadrant 2 will allow learners to progress into Quadrant 3 by increasing language demands. Thus, while the time spent creating the artwork may not have been linguistically demanding, such tasks can be considered valuable within CLIL as a stepping stone to more linguistically demanding tasks. In this case, students were then required to present their work and their creative process, reincorporating a linguistic element and thus moving the activity into Quadrant 3 in the CLIL Matrix. It should be stated that Coyle et al. (2010) originally intended for the matrix to be used to develop support systems for students, yet Griffiths (2019) states that "it also provides a sound approach for designing a sequence of tasks in a CLIL lesson or unit" (p. 148).

Discussion

While these findings are purely observational at this stage, there are some interesting features regarding cognitive processes and content application that would merit further investigation.

Cognitive Processes in CLIL Art Creation

Coyle et al. (2010) suggest that all cognitive processes in CLIL should be evaluated against Bloom's Taxonomy (Figure 1). Accordingly, it is appropriate to look at the art creation process through this lens as well. When forming initial concepts, most students returned to class content to create idealised concepts for their own work. This demonstrates students using lower-order thinking skills (remembering, understanding, applying) to support higher-order thinking skills (creating). Then, once students start working, they come up against the cognitive challenges outlined by Eisner (2002), specifically dealing with limitations by evaluating and analysing their own work to produce a result that aligns with their initial concept in a satisfying way.

Within this process, students often took time to step away from their work and talk with others, either seeking validation for their decisions or advice on how to improve their work. Thus, in a limited capacity, students were also engaged in evaluating each other's work throughout the process.

Accordingly, it would appear that as a cognitive process, art-making in education requires students to employ multiple thinking processes, both higher- and lower-order, suggesting that art-making aligns well with the cognitive principles of effective CLIL education.

Content Evaluation Through Art

As previously mentioned, most students relied on previous class content to help formulate initial concepts for their own artwork, and then adapted and evolved throughout the creative process to produce something that ultimately aligned with their initial concept. In addition to the cognitive demands of this process, this suggests that students would have to think more deeply about the content underpinning their original concept. To produce a satisfying piece of work, students had to demonstrate their understanding of the taught content and break down the true nature of the style they were trying to emulate, providing an opportunity for a very rich and in-depth personal interaction with the concepts in question.

This deep understanding of content could therefore form the basis of content evaluation, something that is often highlighted as a limitation of CLIL. Coyle et al. (2010) acknowledge that it is often difficult to determine whether students lack understanding of the content, or if they lack the linguistic skills to demonstrate their understanding of content, thus creating a significant issue in assessing student content knowledge within CLIL education. However, art making may offer an opportunity for students to display their understanding of content through a medium that is not dependent on language. While this approach may present other challenges, such as subjective interpretations of artistic concepts and limitations in technical ability, it offers a potential avenue to explore student content understanding independent of language or test performance, thereby addressing the assessment challenges highlighted by Coyle et al. (2010).

Such an opportunity for content evaluation would therefore require a framework for evaluating content understanding through visual art. Several frameworks exist that could potentially be adapted and applied to this field, including art-based research (ABR). ABR provides a framework for using art as a medium for communicating research knowledge (Morris, 2022), suggesting that such methods could be adapted for use in evaluating student work. This type of evaluation could be used in conjunction with student reflections, either spoken or written, to assess student understanding of content, and identify potential discrepancies between a student's representation of their understanding through artwork and their ability to demonstrate content knowledge in the classroom language.

Limitations, Implications and Applications

The key limitation of this study is the scope, and the nature of the data collected. This is due to the general approach adopted in the course delivery –existing research into art-based language education is limited, so a broad approach was adopted to identify possible research themes with cognition being one of the several themes that emerged from this experience. Thus, specific research methodologies designed to monitor cognitive processes, such as those adopted by Yokochi and Okada (2005), will be required to draw any deeper, more meaningful conclusions on the topic.

Despite this, the opportunities presented by art creation as part of language education may lead to some interesting implications for teaching practice. However, at this stage further research is required to fully understand these implications. Any future research in this area is likely to be highly variable due to the multifaceted nature of art creation. Eisner (2002) describes student-art making as a complex process where students work towards an idealised image, but are likely to be limited by time, materials, and technical skills. Thus, understanding the true nature of the student creative process will likely require a longitudinal study. In such a study, students' initial concepts and intentions are clearly defined, followed by close tracking of the process of experimentation and resolution of 'the

problem' undertaken throughout the creative process. By comparing students' initial intentions with their final work, researchers could gain insight into the degree of deliberate content application involved, as opposed to mere 'happy accidents' that may occur during the creative process.

Alternatively, a more scaffolded approach could encourage greater student reflection on taught content as part of the process of developing their own artwork. This more direct approach would require students to reflect on and demonstrate content understanding through specific briefs for artwork creation, rather than the freeform approach used in the elective course. By directly instructing students to apply the concepts of, say, cubism, in their work, the students' individual understandings of the movement are likely to be clearer. This would minimise variables in evaluating student content, as an evaluation framework could be created based on the specific movement in question. This, in conjunction with some concepts adapted from ABR, may offer a solution to the issue of content assessment in CLIL, by providing a non-linguistic basis for assessing content knowledge through the work produced by students.

Finally, the scope of this paper is very narrow, focusing only on cognition as part of CLIL education while excluding the remaining three C's. Based on observations from this elective class, communication is another area that merits further investigation, with students actively developing collaboration, negotiation, self-reflection and mediation abilities in discussion, and employing translanguaging and problem-solving strategies to interpret various works. Additionally, art offers myriad opportunities to explore 'Culture', a further C that would benefit from deeper investigation. As it stands, these areas represent a major gap in the literature yet could provide a path to an arts integrated approach to language instruction.

Conclusion

One thing that is evident from this series of observations is that accurately isolating and categorising cognitive processes can be challenging. However, the observations of the student process as part of the elective CLIL course can be broadly summarised as follows. First, students develop an initial concept for the artwork they wish to create. This is a creative process and may be based on concepts taught as part of the CLIL course, or other external factors such as artistic preferences and previous experiences. Then, once the physical creative process begins, students encounter Eisner's 'problem' (2002) and be engaged in a continuous cycle of evaluation and analysis of their own work to create something that aligns with their original concept in a satisfying way. As part of this process, the aims of the project may shift as the work develops, adding an additional layer of complexity. Finally, once the work is complete, the language element of the process comes to the fore, with students required to explain this creative journey in hindsight.

Overall, there is a gap in the literature regarding the role of art in language education. However, with the growing interest in CLIL and more integrated approaches to language learning, art-making may offer benefits in implementing CLIL in the classroom. While the observations in this paper are preliminary in nature, they suggest that art presents students with opportunities to demonstrate their learning and understanding in ways that are cognitively demanding yet linguistically simple, thus presenting a potential solution to a primary issue with CLIL. The linguistic component can be reincorporated into assessment through presentations and written reflection, encouraging students to think deeply about their own experiences and problem-solving strategies in the process. Accordingly, the use of art in CLIL classrooms may offer educators a unique way to assess and challenge their students, while making the language classroom a more vibrant and engaging place to learn and grow.

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