"21st century education: a practical application of the 4Cs in the Mexican ESL classroom."

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Abstract: The 4Cs have been at the center of the scholarly interest in the field of education for the past ten years. This article offers examples of concrete 4C-based school projects that have been experimented with bilingual middle and high school groups of Colegio Columbia, located in Mexico City. The paper starts with a brief section debating the 4Cs and their place in the "Literature in English" ESL class, followed by an outline and analysis of three distinct initiatives: the board game design and narrative project, the collaborative writing and roleplaying project, and the open initiative-based project. Note: for the sake of convenience this article uses the Mexican educational stages; hence "2nd grade" refers to U.S. Eighth grade, "3rd grade" refers to U.S. Ninth grade, and "5th grade" refers to U.S. Eleventh grade.

Resumen: Las 4Cs han sido el centro de interés para los especialistas en el campo de la educación durante los últimos diez años. Este artículo ofrece ejemplos concretos de proyectos escolares basados en las 4Cs que han sido experimentados con grupos bilingües de secundaria y preparatoria del Colegio Columbia localizado en la Ciudad de México. El artículo inicia con una breve sección debatiendo las 4Cs y su lugar en la clase de "Literatura" en inglés como segundo idioma, seguido de un resumen y análisis de tres diferentes iniciativas: el proyecto de diseño de juegos de mesa narrativo, el proyecto de la escritura colaborativa y de juego de roles, y el proyecto abierto basado en iniciativas. Nota: por así convenir, este artículo usa los grados escolares del sistema mexicano; por lo tanto, "2do grado" se refiere al octavo grado de Estados Unidos, "3er grado" se refiere al noveno grado de Estados Unidos, y "5to grado" se refiere al onceavo grado de Estados Unidos.

Introduction

The last ten years have seen a strong influx of scholarly works assessing positively the benefits that the 4Cs could bring to the classroom and learning experiences (see for example Carroll, 2007; Burmack, 2002; Frey & Fisher, 2008; Trilling & Fidel, 2009). However, works by teachers focusing on a concrete and practical application of the 4Cs remain rare. The objective of this article is to bridge the aforementioned gap by providing the reader with examples of what was done with bilingual middle and high students from Mexico, aged 14 to 17. This work begins with a brief historical and theoretical perspective of the 4C skills and their place in the "Literature in English" class, followed by the description and analysis of a series of in-class projects across the curriculum that have been specific attempts at integrating and developing those skills. In its last

section, this work offers a few concrete strategies that can be applied on a daily basis to foster the 4Cs in the junior-high and high-school classroom.

DEFINITION OF THE 4Cs AND THEIR PLACE IN THE "LITERATURE IN ENGLISH" CLASS

The notion of 4Cs was created in 2002 by the Partnership for 21st Century Skills, an educational think-tank that brings together the U.S. Department of Education and a series of leading companies and organizations. It appeared "out of concern that American education was failing graduates because they were graduating without the skills needed to be productive citizens in the Digital Economy," (Kivunja 2015) and includes the following four non-disciplinary core competences: "critical thinking and problem solving; communication; collaboration; and creativity and innovation" (P21 2015).

Many U.S.-based schools and educational organizations have acknowledged the importance of these new "super skills"—as an example, the Pacific Policy Research Center wrote in 2010 that "new standards for what students should be able to do are replacing the basic skill competencies and knowledge expectations of the past. To meet this challenge schools must be transformed in ways that will enable students to acquire the creative thinking, flexible problem solving, collaboration and innovative skills they will need to be successful in work and life." (Pacific Policy 2010) However, the educational theories at the root of the 4Cs still remain somewhat foreign to educators from outside of the United States; for that reason they appeared as perfectly fitting the open, experimental nature of "Literature in English," a subject implemented by Colegio Columbia in 2013.

Colegio Columbia, located in Mexico City, has a long history of bilingual teaching. Founded in 1938 by Henry L. Cain, a native of Louisiana, the school has always attempted to develop new approaches to teaching English and British and American cultures. "Literature in English" was developed in 2013 as a replacement of the more traditional "Reading Comprehension" that had become a staple of Colegio Columbia. The English Coordination felt the need to implement a subject that would complement the English Language class in a more open, organic way—from its early draft, Literature in English aimed at offering "students from grade 1 to 6 a

comprehensive approach to the world of literature in English." (Brultey 2013) The objectives of the class had been described in the following terms:

> Far from being nothing more than a reading comprehension course, [the class] aims at offering the students the opportunity to work on and discuss both classical and popular pieces of literature of various genres and types, including fiction and non-fiction, in order to foster an interest in literature and critical thinking from an early age. Like a series of stepping stones, the different levels of the program are organized around the intellectual development of the students, starting with the most basic building blocks and finishing with college-level textual analysis and essay writing. Each grade features a closed list of compulsory, non-abridged, non-adapted works to study with the students, along with a compendium of shorter works (short stories, speeches, poems…) that can be used in order to complement the theme of each unit. Furthermore, even though the course focuses on literature in all its forms, various other media will be used, including but not limited to music and movies. (Brultey 2013)

While Reading Comprehension was based on pure reading and language-acquisition competences, Literature in English aimed at using literature as a tool to develop a variety of abilities—with the notion of critical thinking at its core.

Due to its open and evolutionary nature, the subject has seen a dramatic evolution since its beginnings. Creative writing, cultural and creative projects, and experimental evaluation approaches have been progressively implemented to reflect the needs and interests of the young learners, reaching gradually the objectives stated by the Partnership for 21st Century Skills in the implementation of the 4Cs. More than just a literature course, Literature in English has become a way to convey change in the way students are being prepared for their future college-level education and involvement in the workplace environment. The following section offers an overview and an analysis of the concrete strategies developed in class and their associated projects.

CONCRETE APPLICATION ACROSS THE CURRICULUM

a) SECOND GRADE: BOARD GAME DESIGN AND NARRATIVE PROJECT

This project was born out of two trends of the current research and classroom practices taking place in a series of U.S. schools—the teaching of basic design in lower junior-high school and the reinforcement of the use of games in educational contexts. It is mostly based on the work of Kathleen Mercury, who teaches at Ladue Middle School in the state of Missouri. Mercury defines the benefits of using games in the classroom as the following:

> Games develop students' social skills, enhance the affective need for friendship and socialization, academic skills, and collaboration among peers. [...] Games develop higher-order thinking skills as players must carefully analyze and apply strategies, negotiate, and plan for long-term strategies. [...] Games teach students how to resolve conflict. Playing games helps students communicate, collaborate (play nice, win nice, lose nice). Students learn how to accept loss and victory. Especially with students who have difficulty in social situations, games provide a less stressful way to interact socially with their peers and helps those peers develop empathy overall. (Mercury, 2013)

While those benefits have been known for some time now, Mercury goes further by advocating the teaching of theoretical and practical game design in the classroom:

> I look for complex problems for students to solve using critical, creative, and innovative thinking. I want our students to become the creators of content—the future designers, builders, and artisans. [...] This can be a very intense, frustrating endeavor, because there is no right or wrong answer. The student, given the parameters of the project, must design, build, and test their games in an ongoing engineering cycle. Sometimes the game works, but isn't fun. Sometimes it's fun, but way to [sic] short. Sometimes it doesn't work, and figuring out how to fix that can take a lot of deep thinking. [...] But it's meaningful project-based learning. [The students] learn how to manage a project, plan their time, and learn how to push forward through difficulty and deadlines. And gaming keeps it fun. (Mercury, 2013)

Teaching game design becomes an opportunity to reinforce the critical, creative, and practical competences of students—all of which through a student-centered approach that confronts students to an actual, real-life problem that needs to be addressed collectively and solved. Game design, then, is not only a deep dive into the psychology of our society and a way for teachers to bring practical competences into the classroom; it becomes the embodiment of the use of a truly 21st-century teaching approach in the classroom, based on creative thinking, communication, collaboration, and creativity.

The term began with a brief, yet clear definition of the objective that was to be accomplished: the design and creation of a full-fledged, playable board game. In order to reinforce their autonomy (a common issue with young junior-high school teenagers), students were not formally guided in the creation process. Instead of providing them with a cookie-cutter guide as to how they would be working and progressing towards their term objective, they were first offered a short series of theoretical presentations about the history and nature of board games, combined to multiple playtest sessions based around both classic and modern games. Those sessions aimed at both allowing the students to understand the core elements of board games (such as social aspect, mechanics, abstract vs. theme-based game, conflict vs. collaboration), and at practically experiencing and understanding quality design.

In order for the students to always keep in mind that the focus of the class was on literature, the sessions also included an initiation to the narratological aspect of board games (Murray 1997, Atkins 2003), i.e. how they can and should be seen as constituting a novel form of narration that should be placed side-by-side with the more traditional forms (novels, short stories, tales etc.) Following those introductory sessions, students were given the chance to build their workgroups themselves; they were given a little "Design notebook" in which they could write all the ideas crossing their minds; finally they were encouraged to try to design a draft for their future game as soon as possible in order to benefit from the feedback of their classmates early on. As few as three work sessions have been necessary for some of the teams to present a fully playable first draft to the class; a few weeks of work later, all projects were completed.

Students revising the mechanics of the game of Go.
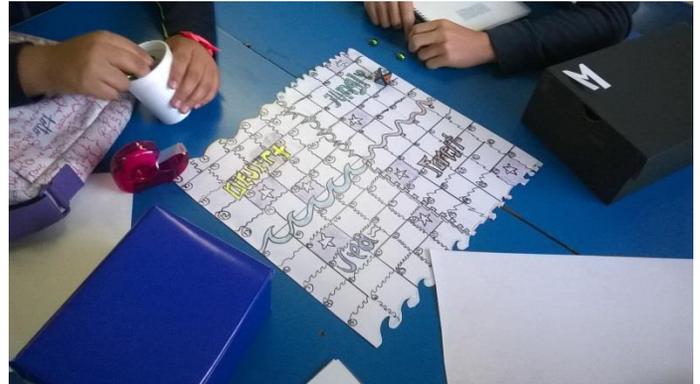
Alpha version of an original game based on *The Jungle Book*.

As often when it comes to 4C-based projects, the students were given an almost complete freedom as to the way they should organize themselves—they are given a clear objective (in this case, design and craft a full-fledged board game, using as a theme any of the texts read in class in the past two years) and are in charge of discovering the different steps necessary to reach that objective. In the case of a group in which ideas of students just wouldn't "click," the teacher becomes temporarily involved with the team in order to help them find a new, productive direction. Far from the traditional image of the professor spreading truths to his classroom, the teacher becomes a discrete guide and helper supporting students who become truly in charge of their own education. In the words of Scrivener, the teacher becomes an *enabler*, who "when a lot of autonomous learning is going on [...] may be hardly visible."

(Scrivener, 1994). A similar approach can be found in the creative writing and roleplay project done with 3rd graders.

b) THIRD GRADE: COLLABORATIVE WRITING AND ROLEPLAYING PROJECT

While pen-and-paper roleplaying games (RPGs) used to be defamed as dangerous and anti-social until the 1990s, their educational benefits have since been positively evaluated (Robinson 2011). Communication scholar Jon Paul F. Maligalig (2013) explains that "[a] popular type of tabletop game, the pen-and-paper role-playing game (RPG) could be a promising learning medium to many 21 Century learners." He then defines RPGs as a clever, socially-complex combination of competences:

> First commercialized in the late 1970s, the RPG combines role-playing, complex rulesets, and narrative. Kestrel (2005) notes that the RPG is a "live, face-to-face social activity" where the players interact with a moderator (also called a gamemaster). Together, they build an analog virtual world where the players" avatars (Player Characters or PCs) interact with the gamemaster's avatars, who are either friendly (Non-Player Characters or NPCs) or hostile (Monsters) to the PCs. (Maligalig 2013)

The competences developed in the mechanics at work in RPGs appear close to the 4Cs: players have to collaborate as a group towards the accomplishment of a series of imaginary tasks (collaboration and communication), embodying characters they themselves design (creativity), under the guidance of a rulemaster and a written, yet flexible set of rules (critical thinking). Investigation of the field led to the discovery of the work of Les Simpson, who teaches at Manor New Tech high school, Texas—a place where "all projects [...] are experiments" (Simpson 2014). For his project, Simpson used *Fate Accelerated Edition* (abbreviated to FAE) a simple and streamlined RPG system:

> To use FAE in class, as with any project, I started with the end results I wanted to see in mind. I didn't just want students to "play Fate". Playing FAE was a means to an end, to get them thinking of characters and narrative, of using their imaginations and sharpening their improvisational skills. FAE was going to be the scaffolding to hang all of these outcomes on. And it worked. [...] Each table, every day, was telling stories. They were, in teacher parlance, "actively engaged." (Simpson 2014)

Simpson's approach was then used with 3rd graders with a literary twist: instead of asking the students to just develop a series of random stories, they were asked to work on one long-form story that would then be reworked as a coherent short novel respecting narrative codes. That

short novel would then be printed following a professionally-looking design, including hard cover and dust-jacket, and delivered as a final product.

During a *Fate* playing session. Character sheets and dice can be seen on the table.
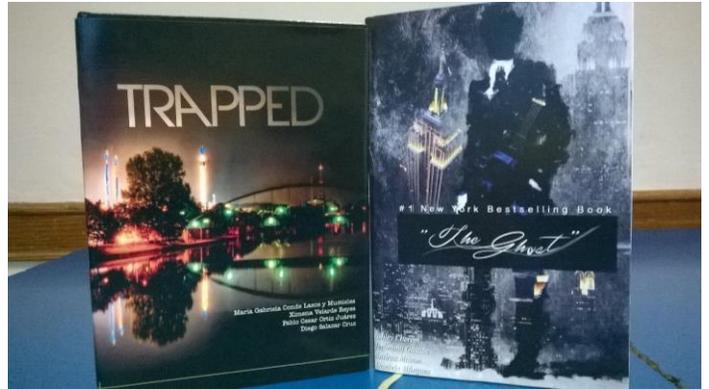
Examples of final products—two original short novels written collaboratively by students.

The project started with getting students in groups of 4 or 5, followed by a session of character-design which allowed to brush-up notions of characterization seen previously in the year. Students were then asked to design an original universe in which they would like to see their characters evolve, and the basic rules of the FAE RPG were explained. After less than a week, students appeared ready to be invited to start playing in autonomy. A FATE session was organized in the following way: a brief 5-minute introduction to answer any question or clear any doubt; 30 to 35 minutes dedicated to actual playing in autonomy, with the teacher passing around the groups to offer advice and guidance; 10 to 15 minutes for each student to write silently about what happened in the story from the point of view of his or her character (in the case of the rulemaster, s/he would be writing from an outside narrator's point of view). Such an approach allowed the students to progressively and organically build the final novel, thanks to the different points of view used—the editing ended up being a gateway to the strategies used by both fiction writers and scholars, demonstrating how polishing a written product is a time-consuming yet exciting process.

In the end, almost every single group delivered an excellent short novel, both in form and content. Again, for this strongly 4C-based project, the teacher became more of an advisor than anything else; the students were responsible for their success and failure, being motivated on a daily basis by the perspective of crafting an actual novel. This sense of student initiative and

responsibility was pushed to an extreme with the final experiment outlined in this article: the open initiative-based projects done by high school students of 5th grade.

c) FIFTH GRADE: OPEN INITIATIVE-BASED PROJECTS

The open initiative-based projects were strongly experimental as they were aimed at seeking the limits of the 4Cs in the classroom environment—due to their nature, a highly performing group of students was selected. Since the beginning of the school year, 5th graders had proven their maturity and sense of responsibility throughout both their grades and their strong involvement in a series of complex projects (audio, video, drama, writing, research projects etc.) The idea behind the project was to leave total freedom to the students as both the final product they wanted to be working on and the way they should be graded, the only limitation being that their work should revolve around the book studied that term, i.e. Virginia Woolf's *Mrs. Dalloway*.

The first step was for the students to get in groups according to their affinities and interests throughout brainstorming and discussion sessions. With the teacher acting as a mediator, three groups ranging between five and eight students were designed: one working on a movie project, one on a mural, and one on a musical. Students were then given one week to fill out a blank grading rubric in a fair and reasonable way—the rubric itself was indeed to be evaluated later, counting towards the final project grade.

A group of students working on the *Mrs. Dalloway* mural, one of the open initiative-based project.

Still from a *Mrs. Dalloway* movie adaptation, another of the open initiative-based projects.

The second step was for the students to get organized to complete their project in roughly five weeks, assigning themselves a schedule and roles. This time, the role of the teacher was even more limited than with middle school students: as most of the work on the project took place outside of the class itself, he became akin to a consultant or college-level advisor, providing very limited guidance only in the case of obvious mistakes made by the students.

All three projects eventually reached completion under the shape of quality final products, albeit not without difficulty. First, due to the absence of a constant pressure put on the students during class time and the necessity to work in autonomy outside of the school, due dates had to be reconsidered for two groups out of three. Second, the live musical project was deemed too complex by the students having offered to work on it, and was adapted as a video musical. Third, the students working on the mural ended up seeking the help of the art teacher, as they realized they were lacking some of the artistic abilities necessary to complete their project to fruition. Far from being failures, those difficulties allowed students to realize the hardships one faces when having to set coherent and reachable objectives, especially in a group task. Once again, 4C-related skills have been strongly developed in the students, who declared afterwards that they had realized how complex working on a project from the beginning to the end was, and how difficult writing a grading rubric could be. (Brultey 2015)

Conclusion

Although this article only offers a few brief examples of 4C-inspired school projects, a series of preliminary conclusions can be made. First, the 4Cs have the potential to be more than theoretical banter: when used as guidelines at the level of a subject, they allow the teacher to develop a more dynamic student-centered learning experience. Keeping the 4Cs in mind can stimulate teachers to switch to a real 21st century teaching approach and inspire them to design more engaging classroom activities. Second, as students are compelled to reach a high level of personal responsibility, they tend to be more engaged. Whatever their age or personal skills, students appear to be intrigued by the open nature of 4C-based projects, and end up with a high level of commitment to the task at hand. Third, relying on the 4Cs brings more flexibility to the teacher, the students, and the subject itself, breaking the routines associated with

traditional schoolwork. The teacher gives up his/her role as a prophet and becomes akin to an advisor, having more time to spend with individuals and groups facing difficulties; students become responsible pre-adults, sensitized to the skills and competences that will be asked from them once they reach adulthood. Considering the multiple benefits brought by a 4C-based teaching approach, it appears that the following step would be to test-implement it at the level of a school in order to allow in-depth research of its effects at a more global scale.

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