

03. GETTING THE CLASS OUT OF THE BOX: LEARNING THROUGH COOKING (A PBL APPROACH)

Aguirre Alonso, Andrés Alfredo.¹
Ching Chiang, Lay-Wah Carolina.²

¹ Ingeniero eléctrico en potencia, Teacher, Unidad Educativa Bilingüe Nueva Semilla

² Bachelor in Business Administration, Teacher, Unidad Educativa Bilingüe Nueva Semilla

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ABSTRACT

Based on Project Based Learning and the International Baccalaureate profile the cooking classes approach to teach subjects in English at UENS school was implemented. The approach was taken as a change needed inside the classroom to focus on the student learning and creating the space for collaborative and social learning.

The approach was led by teachers and junior and senior students of the IB program. The pilot classes were planned with the purpose of creating fun classes. However, it evolved to using them to access knowledge of different subjects and became a transdisciplinary approach. The classes were planned with the IB planner, applied and then had reflection section for both the teacher and students.

The cooking classes have the benefits of PBL outcomes and IB Learner profile in shaping the knowledge and personality of students. This methodology becomes relevant to adapt to globalization and fast pace changes in societal systems.

Key Words: International Education, Project Based learning, Non Traditional Education, Cooking, IB

1. INTRODUCTION

Education is a noble subject that has led to social changes around the world leaving a footprint in mankind's history. Through the years, education has evolved, always aiming to achieve and prepare human beings to construct their future success and personal growth. It's so relevant that the United Nations Organization considered it one of the 17 objectives for sustainable development 2030. It deals with increasing the access to education opportunities. In our local context, the Ecuadorian government in its Ministerial agreement 295-13, chapter 3, guarantees inclusive Education for its citizens. In addition, they are making changes in the educational curriculum for the next ten years. Moreover, the social, technological and economical changes represent a challenge for education to be evolving. For teachers, all these factors mentioned above propose a need to go out the box and bring new techniques in education to manage the heterogeneous groups and demands posed by every learner. .

Catering for those needs, Unidad Educativa Nueva Semilla (UENS) school took the risk to set cooking classes, supported on the foundation of Project based learning (PBL) and the International Baccalaureate (IB) profile, to teach subjects in English which is the second language taught in this bilingual school.

PBL is a tool in which there is a combination of cognitive and social constructivist theories that are represented by the voice of Piaget and Vygotsky. In PBL students are engaged learning by doing and solving which creates the space to develop social and collaborative skills. Between the main ideas of using the PBL there is student's autonomy, authentic problems, social dialogue, conceptual organization and personal motivation. Through PBL, students learn:

- Problem-solving skills
- Self-directed learning skills
- Ability to find and use appropriate resources
- Critical thinking
- Measurable knowledge base
- Performance ability
- Social and ethical skills

- Self-sufficient and self-motivated
- Facility with computer
- Leadership skills
- Ability to work on a team
- Communication skills
- Proactive thinking
- Congruence with workplace skills

On the other hand, the International Baccalaureate organization (IBO) aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. Looking at the value of that, UENS started its certification process in 2012 and was certified as an IB school in 2014. These factor contributed to prepare the students to develop the IB profile. The IB provides a list of ten attributes named the IB Profile. The attributes inside that profile are: inquirer, knowledgeable, communicators, thinkers, principled, risk-takers, balanced, reflective, open minded and caring.

Why cooking classes? Because simply we have food in every single stage, ritual and celebration of our lives. Through the teaching experience, the researchers realized that cooking was an engaging way to transfer knowledge and bring together students. This methods teaches learners to become active producers instead of just passive consumers.

The cooking methodology has been taught in the Japanese classrooms as a way to teach them responsibility and engage them in real life issues. That combine a sense of respect and created value system for the students. So this experience was also taken in consideration to implement this out of the box learning method.

2. BODY

2.1 Methodology

The implementation of cooking was an approach taken out from the passion of IB English area teachers in Nueva Semilla who taught the language and other subjects in English. They have in common the special interest of eating together and realized the passion for enjoying good meals could bring groups together. Food is a cultural factor that is present in our daily activities. The program consisted on implementing cooking as way to teach subjects in English. The plan was to develop PBL and IB profile in the students.

The class was transformed from the regular whiteboard, marker and slides to a kitchen. The cooking approach was taken as an interdisciplinary method integrating a diversity of elements to put in practice concepts and theories. Letting the students see, feel, taste, listen, smell, creates a 360 degrees experience.

The proposed approach was applied with the students of first, second and third highschool of the International Baccalaureate Program at UENS. The range of ages was 14 to 17 years old.

The cooking activities were organized in similar manner. The students will plan the class and the students will work in groups to achieve different goals. For example, in Business Management during the unit of production, the students were challenged to cook three dishes for an ecuadorian breakfast so they cooked Bolon (plantain dough), orange juice and sandwiches. The students developed concept such as waste, types of production, lean production. The students were engaged and the experience was not only learning the curriculum and the concepts involved in a project, but also learn self management skills, research skills and thinking skills.

The students went through a diversity of experiences because the teachers for the subjects were not the same allowing them to walk the learning experience under different umbrellas.

The students were asked to complete a survey made out of 10 questions to reflect upon the impact of the cooking classes to their development. That data is the foundation for the main findings.

2.2 Main Findings

The main findings of the study were summarized in the following figures:

Figure 1:

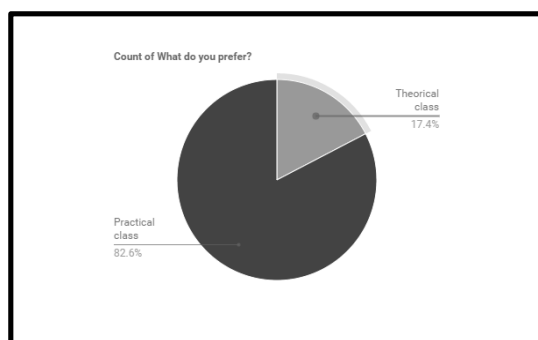


Figure 1 shows that 82.6% of the students prefer the practical classes over the theoretical classes which is only the 17.4% of the respondents

Figure 2:

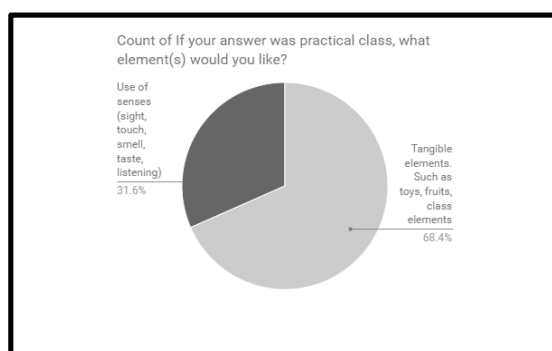


Figure 2 that 68.4% of the students would like to deal with tangible elements in the classrooms in which are included things like toys, fruits and class elements. The rest of the class would like to use their senses.

Figure 3:

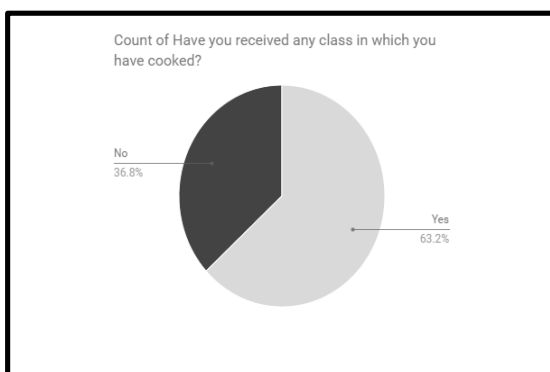


Figure 3 shows that 63.2% of the students have received a class in which they have used cooking while the 36.8% have not received.

Figure 4:

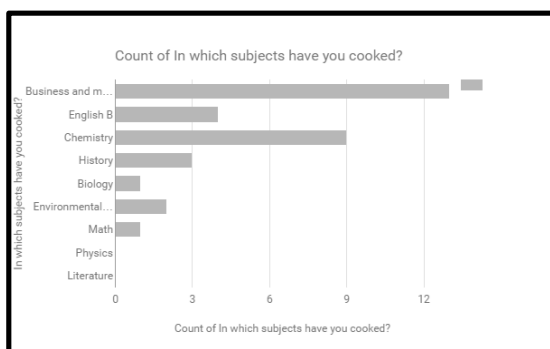
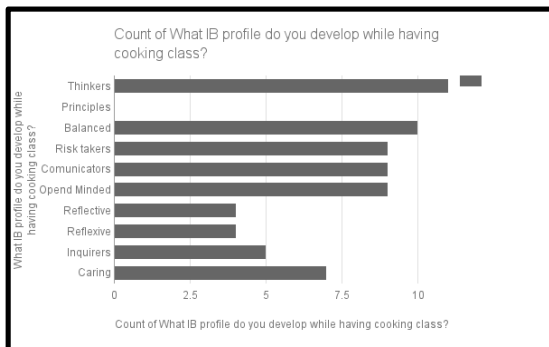


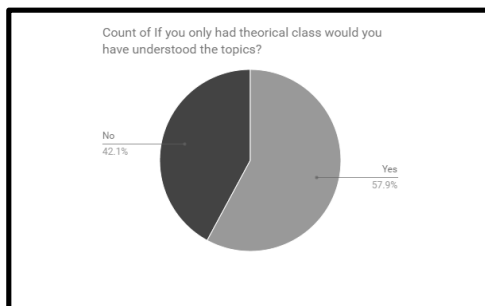
Figure 4 shows that 7 out of 9 classes used cooking. The subjects that used cooking were Business Management, History, English B, Chemistry, Biology, Environmental and Math. Business Management has a higher number of people agreeing that they have used cooking in that class, followed by Chemistry. Cooking is a great opportunity to introduce some early maths concepts in a fun environment. Think about all the mathematical language and equipment used during cooking; adding, reducing, weighing, scales and measuring. Cooking involves so many disciplines. Basic math, geometry, and science are all subjects that can be taught in the kitchen. Teaching through cooking involves all of the senses. Lessons taught in the kitchen solidify concepts and turn abstract concepts into something tangible.

Figure 5:



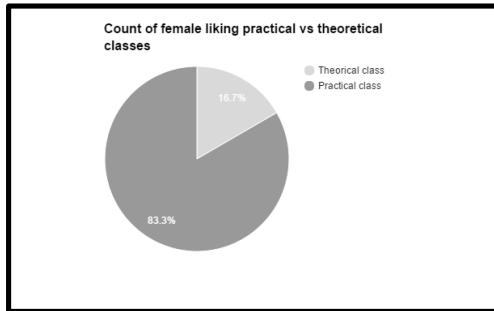
According to figure 5 the top five IB learner profile that students believed that were developed with cooking classes were: thinkers, balanced, risk takers, communicators and opened minded. On the other hand principled did not have any respondent. It is strongly recommended because it develops communication strategies, and group work management. “Your kitchen is the perfect place to get chatting with your child. If your child can read, get them to read out the recipe while you gather the ingredients and materials needed for the dish. In fact, following the steps in a recipe helps children learn about sequencing—essential for good communication skills”.

Figure 6:



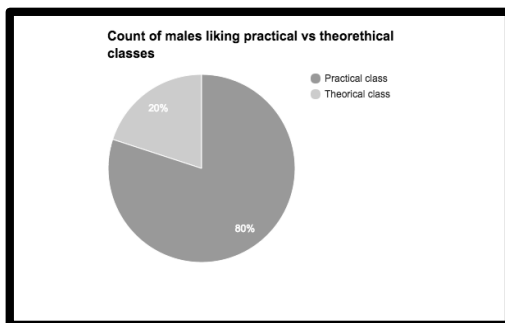
In figure 6, the research states that 57.9% can understand just with theoretical class while 42.1% of respondents said that they could not understand the class if it was just theoretical.

Figure 7:



In figure 7 we can see 83.3% of females like practical classes.

Figure 8:



In figure 8, we can see that 80% of males like theoretical classes.

2.3 Analysis

The findings give insights about the proposed idea of using cooking as an out of the box learning tool.

The implementation of practical classes is preferred by students as shown in Figure 1 with 82.6% of the students supports. That is combined with figure 2 in which 68.4% of the students would like to deal with tangible elements in the classrooms and a 31.6 % would like to use their their senses. These numbers reflect how important could be the combination of PBL and IB profile for the development of this out of the box strategy that is cooking to gain knowledge.

We can also realize that gender does not influence in the liking of theoretical vs practical classes because as shown in figure 7 and 8 males and females both prefer practical classes.

Most of the subjects have use cooking as a learning tool. The students have experienced cooking in subjects like Business Management, History, English B, Chemistry, Biology, Environmental and Math. Business Management

has a higher number of people agreeing that they have used cooking in that class, followed by Chemistry. Business Management is subject taught in English while Chemistry is taught in Spanish. Both subjects have clear topics which approach can be related to cooking and make practical classes. In the case of Business Management relationship with the food industry can be countless, from marketing to research development to human resources to production and operations. In the case of Chemistry

Be reminded that food can break many barriers, including language differences. Although students can't learn every aspect of chemistry from this type of course, they can still learn some pretty serious concepts about the central science, says Sara J. Risch, a food scientist and consultant who has taught numerous seminars on the chemistry of food. Even better, she says, they retain it. When nonscience majors take pure chemistry classes, "they typically memorize a bunch of stuff, walk out the door after the last exam, and none of it sticks with them," she says. With kitchen chemistry classes, though, "food is something they see and eat every day. People can relate more to it, and they're more likely to remember it."

In the findings one number that would not support the the practical classes would be in figure 6 where 57.9% of surveyed students said they could have understood just with the theoretical class. However, we have a 42.1% of respondents said that they would have not understand the class if it was just theoretical. This shows how heterogeneous the classrooms could be. Heterogeneous groups in educational settings are groups that include students with a wide variety of instructional levels. Heterogeneous groups stem from the education precept that a positive interdependence can arise from students with varied learning levels working together and helping each other to reach an instructional goal. The meaning of that is that teachers need to have differentiated learning and use scaffolding strategies to cater for the needs of the students.

The proposal of learning through cooking shows becomes then an option for the learners and teachers to gain knowledge and develop skills such as math skills, social skills, fine motor skills and reading skills.

3. CONCLUSIONS

3.1 Conclusions

The work has concluded that the use of cooking and its non traditional education tools have led students to work under a different environment. Learning through cooking classes wakes up the senses, activates memory and kinesthetic intelligence.

The students recognized the different attributes of the IB profile developed in their cooking classes. This methods allows the teachers to create transversal lessons where the skills are practiced and the "different knowledge" for each subject is brought together as a whole. The same cooking recipe can bring together Math, History, Business, Chemistry, Environmental, Physics, Geography, and Arts lesson plans, just to mention some.

3.2 Recommendations

The work leaves the door open to further research about the PBL in general as a theory to challenge the learning process of teachers and students alike.

The success of using the PBL and IB profile in the lesson plans indicate that the combination of these strategies could be used with others methods for teaching of subjects in English. So methods like dancing or arts to explore subjects could represent further research.

The idea to transfer and connect knowledge between subjects could also propose further research.

The curriculum must be aligned with the planned skills for the cooking class.

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