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Rafik El Amine Ghobrini [1]
Faculty of Foreign Languages
Abdelhamid Ibn Badis University, Mostaganem, Algeria

SHARPENING STUDENTS' 21st CENTURY SKILLS THROUGH PROJECT BASED LEARNING IN AN EFL CONTEXT AT ABDELHAMID IBN BADIS UNIVERSITY, ALGERIA

Abstract

In a fast-changing and dynamic world, students are bound to acquire core competencies to be able to function effectively in the 21st century. This research targets the implementation of Project based learning that aligns with the demands of the new technological-oriented era. The study's foremost objective is an attempt to gauge the impact of such innovative model on students in tertiary level along with the articulation on motivation and autonomy's development. To this end, a mixed method was used to conduct the research by using a self-assessment grid for the 46 participants and interviews for teachers who took part in the experiment. The findings show that the autonomy was at the heart of the project in terms of several aspects such as peer-coaching, peer-correction and self-teaching. It also gives insights on the wide spectrum of the skills developed along the application of the PBL project. Students were, therefore, able to function independently in a real-world context all the while nurturing and honing, to varying degrees, high order academic and professional skills ranging from leadership, collaboration, designing, to problem- solving and solution-suggesting. The unexpected element that emerged in the findings showcase the fact that the PBL project brought students together i.e. it humanized the environment.

Keywords: 21st century skills, autonomy, EFL, Project-based learning.

1. Introduction

Today's world is in a constant dynamic of change, especially with the advent of technology, where new needs have emerged. Some instructional models have arisen in response to these new realities. However, the actual educational system is still holding on to traditional teaching methodologies. In this regard, Project-based learning (henceforward PBL) is a teaching approach that is gaining ground as it supports sound pedagogical practices that aligns with the 21st century demands. It, therefore, assists students substantially in developing pragmatically their professional and academic skills through immersing and engaging them in highly personalized learning environment.

Students in Master cycle spend about five years of instruction in relation to their subject's content. Yet, it is very unlikely for them to come across opportunities where they can apply what they have learnt all along. This factor led, certainly, to academic community which lacks many skills that are vital in this technologized-era. In other terms, due to an old-fashioned instruction model, professional skills are not nurtured, developed and sharpened in the tertiary level, which can be very threatening for students' vocational career.

[1] **Email**: ghobrini.amin@gmail.com

With this logic in mind, the PBL approach portrays a potential solution for this current issue. This instructional design can bring about infinite possibilities to enhance their skills and apply their content-knowledge in real-world contexts. Not only it does improve students' capabilities but it engages them in social activities that will, surely, nourish the spirit of citizenship. In light of this reasoning, the present research is to be carried out so as to answer the following issues:

1. To what extent does PBL help students attain autonomy?
2. Does PBL prepare students for the demands of 21st century by developing the adequate life-coping skills?

Before delving into answering these questions, we hypothesize that PBL can assist Algerian EFL students to varying degrees and therefore develop their autonomy as it is a modern instructional model that has the potential to develop key 21st century skills needed to perform and function effectively in their professional journey. What's more, the research work will also demonstrate extent to which PBL can assist students to apply their content knowledge by leading them to be producers rather than consumers.

We estimate that this investigation will shed light on the PBL instructional model that aligns to the 21st century's demands. In this study, we are to denote the development of the PBL's implementation all the while beholding its impact on the EFL learning community. All through the research, we will investigate what personal and professional skills students can develop that, certainly, will be of significant input to the study overall.

This research lays focus on the impact of implementing PBL on EFL context and the extent to which it aids students reach autonomy whilst operating independently outside the classroom walls. In tandem with the manifold benefits this project-based model brings about to the learning community, this research explores the different skills to be enhanced during the realisation of the PBL project. In addition, this study is to highlight that learners are to function practically as advanced problem solvers by applying their background knowledge and, crafting, by the end, an artefact that will constitute the students' product.

2. Project Based Learning : Overview

The concept of project in the instructional framework is not new. As matter of fact, Beckett (2002) as cited in Simpson (2011) confirms that it was coined by David Snedden, in mid-1800s, who was a science teacher in American agriculture classes. Afterwards, in the early 1900s, William Heard Kilpatrick, John Dewey's student, introduced "*the project method*" that was articulated around children-centeredness. However, owing to the lack of succinct definition, the method was subject to controversy via-à-vis its appropriateness in academia (Lynn, Mark, Orthwein and Kelton, 2013). With the translation of Vygotsky's work into English, in the 1970's, this instructional paradigm was quickly adopted as an effective method of teaching (Aimeur, 2011). It was subsequently named PBL as it followed a certain frame of reference that sets it apart from the aforementioned method. PBL is an instructional practice that reflects the demands of the 21st century (Boss , 2012).

PBL is a student-centred approach that induces learners to operate collaboratively in a long-term project so as to solve a real-world problem or develop a product (Cavanaugh, 2004). It gives students the opportunity to function autonomously by seeking and searching for the pertinent information from various sources in order to analyse and synthesize it and therefore derive knowledge from it (Srikrai, 2008).

Thomas (2000) gives an exhaustive definition by describing PBL as:

> Complex tasks, based on challenging questions or problems, that involve students in design, problem-solving, decision making, or investigative activities; give students the opportunity to work relatively autonomously over extended periods of time; and culminate in realistic products or presentations (p. 1).

PBL environment enables students to operate in a frame of reference that aligns with the demands of the 21st century as it hems in an exhaustive skill-set to be developed and strengthened namely, problem-solving, decision-making, planning, reasoning, creativity and social responsibility. These capabilities are like pieces of puzzles that come into play to shape students with pertinent skill-set that underscore the practical application of the theoretical notions that have been studied beforehand.

Accordingly, Moss and Duzer (1998, p. 1) defined PBL as "*an instructional approach that contextualizes learning by presenting learners with problems to solve or products to develop*". In other words, the project approach created a practical platform for enhancing learning by involving students in hand-on experiments and more importantly, deploy strategic methods where students have to create and design a product or deliver a presentation to an audience.

3. Methodology

For the completion of the PBL project study, an action research methodology was chosen alongside two types of data collection tools namely self-assessment grid for students and interviews for teachers. Therefore, both quantitative and qualitative methods were applied to gather data. These instruments will gather data from different sources for the purpose of having an in-depth overview of the whole PBL project process whilst laying focus on the elements put forward in the hypotheses.

3.1 Context

This research seeks to uncover the effects of the PBL instruction at the University of Abdelhamid Ibn Badis, in the department of English language, with reference to second year master in applied linguistic discipline.

In addition, as far as the application of the project in real world is concerned, master students need to deliver the lessons they designed in high schools. For this reason, ten secondary schools, in the wilaya of Mostaganem, were selected for the realization of the practical part of the project. It is also important to mention that most of the master students are to be directed to the teaching profession.

3.2 Participants

Different participants took part in the experiment: First, the university teacher who supervised the project, second, the students who worked on the PBL project, third, the high school teachers who welcomed students in their classes to deliver a lesson to, fourth, the pupils.

a. Learners

For this study, 46 participants who belong to same Master's specialty and represent all the cohort. The sample consists of 9 males and 37 females. The population's age ranges from 21 to 28 years old. Pupils are the audience population that students are to present their work to in different high schools. The number of the high school students is different from one class to another but this detail is not of significance for this study.

b. Teachers

The university teacher or lecturer who is responsible for the e-learning module, in which the PBL project was supervised, will provide a holistic perspective on the merits and the challenges of this kind of instruction. Three high school teachers will be, also, interviewed so as to give their remarks on how well – or how poorly- master students performed in their respective classes. Naturally, they will also emphasize the importance of such training and the consequence it has on their future carrier.

3.3 Data Collection Tools

The instrument of data collection is used to carry out the research include self-assessment grid to evaluate the extent to which students have achieved the required objectives by the end of the project. The second tool is interviews with high school instructors so as to collect the feedback related to the PBL project implementation.

3.4 Procedure

The experiment consisted in the implementation of a project-based learning approach in an EFL context, more precisely in the E-learning module in which students were taught how to leverage ICTs in educational context. The general goal, therefore, is to redesign the third unit of third year high school, foreign language stream by incorporating technology as it was the core of the module. The cohort was divided into 8 groups, that involved five to six students, and each of them had a part of the project to work on. Each group nominated a leader to facilitate the communication process. Afterwards, each group was assigned a part of the language skill to work on the ultimately design a lesson plan for it.

Second, the end-product will be a set of lesson plans that reflect the creative and research-driven process they went through all along the achievement of this project. Finally, in the practical part of the project, each group will be split in half giving birth to two sub-groups which will be oriented to different high schools so as to have more opportunities to test their product.

4. Results

A mixed method was conducted serving to collecting data during and after the execution of the PBL project. The quantitative data collected from the self-assessment grid were computed statistically in order to obtain accurate results while the qualitative data, was collected from the interviews.

4.1 Self-assessment Grid

The analysis of the obtained results is structured in three axes so as to give a clear understanding of the process.

4.1.1 The individual and collaborative work

One of the key factor and significant predictor of the project's success is the level of collaboration among team-members in every group.

Figure 1 shows that the overwhelming majority of students, that is 89.1%, worked in collaboration all through the project. Only a minority of 10.9% of students admit that they did not operate in cooperation with their team. In this sense, more than half students (60.6%) affirm that they held meetings during the off season in which is it challenging to do, giving the fact that a considerable number of students live outside of the wilaya of Mostaganem. That is why 18 out of 46 students could not meet their team-members in the holidays. To

solve this problem of physical meetings, the majority of students used technological tools to communicate and interact with each other. In this regard, 73.9% of students confirm that they met virtually in their respective Facebook groups that were created solely for the sake of the project. Unfortunately, nearly quarter students (23.9%) could not use this solution as they did not have access to internet.

Figure 1:

Collaborative meeting of students for the PBL project

An individual work had to be done during the period of investigation whereby each student had to explore many sources information to be able to develop ideas for his part of work.

The following figure (2) accounts for the peer-correction practice that some students went through. Indeed, it spots light on the fact that half the informants (50%) corrected their team-members' work. This procedure not only strengthens the cooperative work amidst the group but also benefit, as much the corrector by taking a look on what his friend had designed, as for the one being corrected by having peer's feedback for him/her to be able to bring about the adequate modifications to the product.

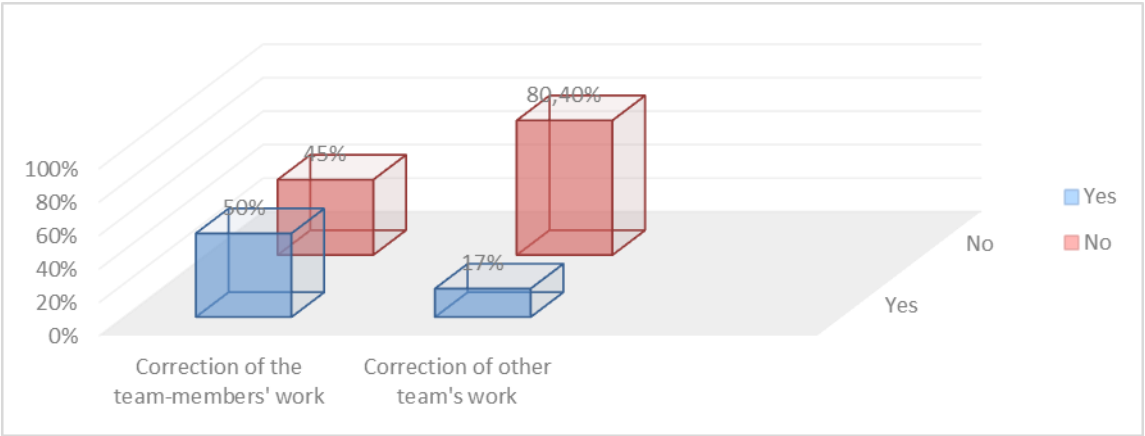

Figure 2:

Graphic representation of the peer-correction process

Furthermore, the figure (02) delineates that only a minority of the informants (17%) have corrected other team's work. This result is quite normal because most of the informants operated substantially within the bounds of their group. This objective targeted specifically the leaders of the groups who were having meetings in a regular basis.

4.1.2 The product's application in the real-world

From another angle, the end-product has some features which are determined right from the start and students are asked to conform to these norms. The figure (07) below illustrates that 87% of the informants proposed exercises related to the unit of Education of the third secondary year. This was one of the characteristic that all products should abide to. In juncture with the latter, worksheets were to be conceived to support the exercises they devised. In addition, it reflects the fact that 38 respondents out of 46 (or 86.6%) put together worksheets for their respective exercises. 15.2 % did not prepare any worksheet for the simple reason that it was optional.

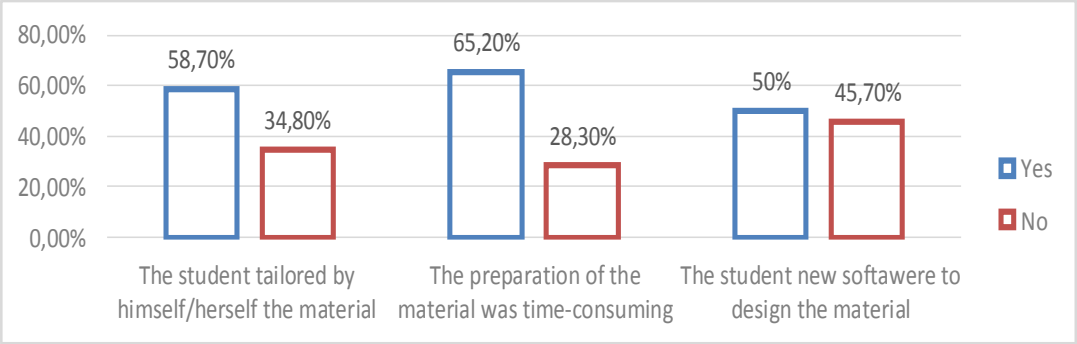

Figure 3:

Representation of the end-product's features

After meticulously conceiving the lesson plans, which constitute the end-product, students were to delve into the practical phase of the project. They were asked to go to the assigned high school where they could present their product to an audience whilst supervised by the host teachers. But before doing so, they had to confer with the high school teachers about the lesson plans they prepared to benefit from their experience.

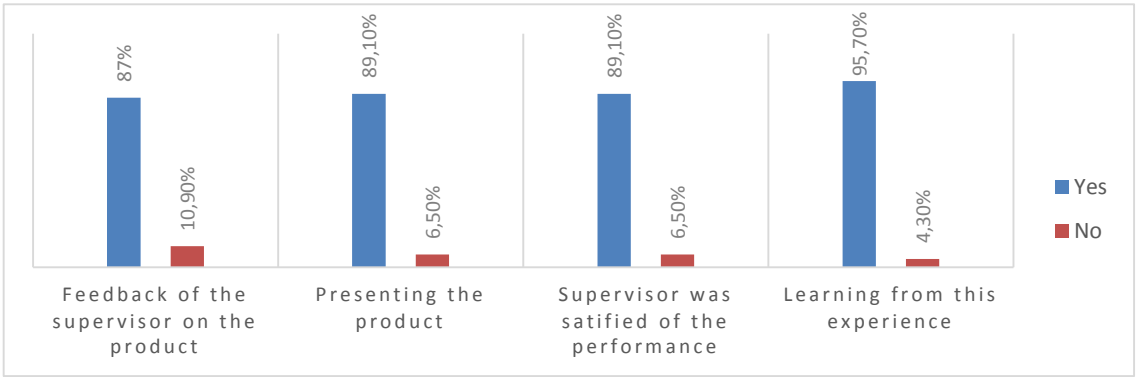

Figure 4:

Feedback before and after the performance

The constructive feedback plays an important role in scaffolding students learning process. Prior the presentation, students were asked to consult with the host teacher and take his/her feedback under careful consideration. This point is highlighted in item 28 where 87% of the informants declared having sought the instructor's opinion as far as the product is concerned. Item 29 proves that 89.1% of the population have performed in high school classes under the supervision of an experienced teacher. The figure (04) stresses that the same rate of informants stated that the teachers were satisfied with the overall presentation. Finally, it reinforces the idea that the experience was very advantageous as 95.7% of the respondents attest that they have learnt a lot from this experience in general.

4.1.3 Professional skills development

This section of the questionnaire tackles the academic gains this project yielded for students. In fact, they have developed a set of skills that will help them be better in their future professions. First, the analytical skill was enhanced as 82.6% of the informants affirm it (figure 05), because the very initial step to do when giving a lecture to an audience, is observing and analysing the learners, checking their understanding and every other relevant element that may influence the teaching/learning process. Second, this experience developed to a certain extent the public speaking skills as the trainees perform in front of the learners to present their product. In this sense, 89.1% of the informants assert that it aided them to develop this skill. Furthermore, when one is on the stage, time is of the essence, that is why 76.1% of the respondents claim that their time management skill was fostered as they had to discretely manage their time in presenting each element in their lesson plans. Otherwise, the lesson will not be completed. Fourth, the lion's share of the informants maintains that their leadership skill was fostered, as every group has its leader and sub-leaders who replace the group-leader when s/he is absent. Uniquely, in the practical part, every group was split into two, which gave birth to leaders of sub-groups. In this aspect, a considerable number of students were able to portray the role of a leader that is why, the informants are positive on how helpful this experience was in building up this skill. This latter goes hand in hand with the interpersonal skill because if one is to be a valuable leader, there is no doubt that he has to master the art of managing people. In this perspective, the figure clarifies that 39 out of 46 informants (or 84.4%) praise this experiment for having assisted them in growing their interpersonal skills mainly in solving problems that occurred and hence, bringing together all the group to perform the tasks collectively.

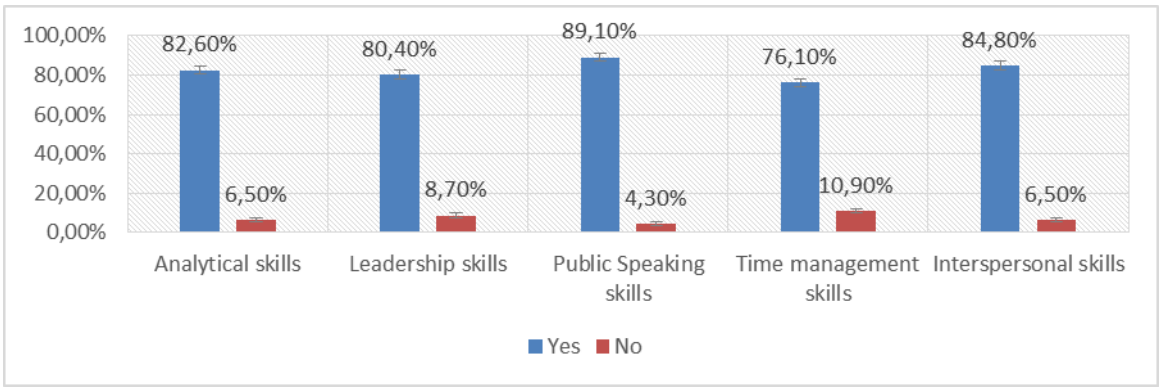

Figure 5:

Graphic representation of the skills' development

4.2 The interviews

This stage was an in-depth analytical process through which we tried to correlate the different pieces of information and constructed meaning out of them. These interviews were conducted with three high school instructors under which a parcel of the PBL project was implemented and the university teacher who supervised the project overall. This analysis will spot light on the different prominent elements that were stressed on and pointed out by the teachers.

The very first question centered upon the general impression of the teachers on the work performed by students. The answers were very satisfying as the lecturer comments that they were promptly positive stating "*they were amazing*" and praising their "*... good collaborative work*" whilst highlighting the necessity of integrating technology in the classroom. Two high school teachers even claim that they themselves learnt from what was presented.

The reflection of the university teacher touted the whole cohort's efforts as they "*... shown a great deal of enthusiasm and amazing capacities*" alongside "*... a strong and exceptional passion for teaching*". It is obvious that students were really excited to work on the project which has put into use their content knowledge and developed, therefore, their skills. She suggested that their leanness toward the teaching profession might have been one of the reasons behind their achievements.

The second question dealt with lesson plans (end-product) designed by students and whether they met the general standards. All teachers described the lesson plans with more than one adjective ranging from "*relevant, updated*", "*well-sequenced*" to "*impressive*". This show how carefully designed the lesson plans are as one of the teachers asserted that it was "*used in the right way and for the right purposes*". All teachers agreed that the lesson plans met the standard in terms of creativity, use of ICTs and meeting the high schoolers expectations.

The subsequent question attempts to exploring teachers' opinion of the training's impact on the would-be teachers. The university teachers emphasize on the benefit of such instruction as it assists students in disposing of many "*blocking factors like fear, lack of self-confidence and stage-fright*". One of the high school teacher argues that this experience "*will prepare them partially but not fully*" which means it will only give them "*a sneak peak of the new world*".

Does the PBL foster students' autonomy? This question was asked for the teachers to reflect upon. One high school teacher states that this project is a "*stepping stone*" toward the path of autonomy. Whereas, the lecturer who has a general view of the whole process of the groups commented that "*I was so impressed by the great energy spent in training themselves by themselves*" especially before the practical part, she even adds on to say that "*autonomy was key factor in the success of this project*".

The following question investigates to what extent the PBL raises students' self-esteem. The teachers affirm that it does, indeed, build up students' self-esteem, especially when they are "*welcomed by pupils, praised by host teachers and encouraged by their teacher/advisor*". Another point was brought up concerning the fact of developing students' self-confidence when they "*stand in front of the crowd and get used to it*".

5. Results and Discussion

Today more than ever before, students need, especially in tertiary level, a new instructional paradigm to foster their skills and that is what our research is aiming to highlight. Throughout the self-assessment gird with students, it was clear that the project based learning can be very beneficial as it gives students various opportunities within which they can develop their skills.

Students showed a great deal of motivation as they were actively engaged in every step of the PBL project. This helped them build gratifying feeling where students did not stay at the side-lines and simply follow teacher's instruction yet, they were fully involved in the process of shaping the PBL project on the one hand, and on the other hand, designing their products.

The interview with teachers uncovered rewarding sentiments of the trainees when performing and presenting their end-project. It is due to the fact that host-teachers along with their learners really appreciated the presentation. One teacher even reported that her students "*were smiling from ear to ear"*. This feeling was mutually shared by the learners and the trainees as they were the cause of the high schoolers' satisfaction.

This journey was full of several opportunities that met students at every turn or step of the PBL project. Working collaboratively, presented an undeniable chance to foster the communication skills as students discussed and debated matters in relation to the project. It, ultimately, helped students learn from one another and therefore, develop their divergent thinking as one problem might be tackled from different angles by different team-members.

A strategy was called for during the PBL project's implementation so as to increase students' productivity. The first was the "*transfer of learning*" where the low performing groups learnt and emulated the effective groups by utilizing the same techniques and procedure for the purpose of increasing their efficiency. The second was "peer correction" where students corrected each other's work and benefited from their reciprocal feedback to adjust and rectify any misunderstanding that might have occurred. In this phase, students showed peer-coaching as good performing students took the time to train and tutor the low performing students specifically members of the same groups.

The PBL instruction presented a real opportunity for the learner to, first, put to use their content knowledge related to a specific module that provided them with the theoretical background on how to incorporate technology in the classroom. Consequently, the trainees approached the issue pragmatically by showing problem-solving and solution-suggestion skills. Second, all through the project implementation, students were trying to apply many concepts of pedagogy and didactics, particularly, when they put the hat of a teacher. Indeed, it was clear that students have employed strategies that they have previously studied so as to make the best of their first teaching experience.

The main problem with the academic elite in tertiary level today is the lack of production on the part of students, and even when they do produce, it does not have any significance owing to the wide gap between the university and the real-world. In point of fact, the PBL project led students to conceive, develop and refine a complete product that was presented to a real audience. As a consequence, the obtained result was a high-quality product as students devised and tested it in the real context, then, made the adequate adjustments in reference to the received feedback. An additional point would be that students respected almost all the standards that they agreed upon in the rubric, especially that of incorporating ICTs in the lesson plans and framing it creatively to attract their spectators. It, hence, appears that

students have successfully designed a first-rate and ready-to-use product that can be functionally implemented.

Being in a world driven by constant change, the educational system needs to shift from the traditional instructional methods to other ones that conform to the demands of the new era. The project model has proven its efficacy as it assisted the learner a great deal in fostering some key skills that will, undoubtedly, be of significant use in their professional lives. What's more, time management and public speaking are skills that have been moderately fostered as students had to respect deadlines, be on the watch when they presented their product whilst facing an audience for a while. Moreover, the leadership skill goes hand in hand with the interpersonal competence as they are complementary. The findings, hence, demonstrate that these capabilities have been substantially promoted as students operated cooperatively for a consistent period of time. Every leader, therefore, exercise his/her interpersonal skill to better lead the groups in the completion of the PBL project.

In this line of thoughts, the PBL project humanized the environment in that the atmosphere was very relaxed and studious. Students' level of socialization increased as they knew their team-members personally.

Because the PBL teaching model is a student-driven, the factor of autonomy is at the heart of the approach. Students' voice and choice shaped considerably the success of the PBL project as they operated independently by voicing their opinion and viewpoint in each step toward the completion of the PBL project. In truth, students' judgment was deliberately included in every turning point of the PBL and therefore, choosing what best way to follow. This active contribution was done through both a cooperative and individual work. The pair of the self-assessment grid spots light on other aspects of autonomy. First, the investigation process was an in-depth stage where students explored many sources of knowledge by taking matters into their own hands. Willfully, they asked experienced teachers and specialists in the targeted area to help them attain their goal. Second, students went above and beyond to craft from scratch the materials they worked with, especially videos, by teaching themselves new software(s) that were designed to treat and process three dimensional materials. Third, students exhibited considerable level of autonomy when they presented their product in a real-context in front of an audience where they collected the fruit of their hard labour.

6. Conclusion

The PBL approach has proven to be an empirical constructive teaching paradigm that conforms to the 21st century's expectations. Truly, this project-oriented instruction operates in a real world framework whilst pushing students to inquire, explore, create, design and produce artefacts that have a meaningful function in the real context.

The results are fruitful as students were able to develop and enhance key life and career skills such as leadership, time management, team working, peer assessment and problem solving. They, also, experienced a high degree of socialization in addition to the high-quality product they devised. Accordingly, learners operated in a rich educational landscape where they transferred their content knowledge pragmatically into real-life settings. In junction with these elements, this study provided reliable insights on the extent to which this new method enhanced different aspects of autonomy as students functioned independently in a student-driven framework by undergoing an in-depth investigation process and presenting their end-product to a real audience.

As final words, the posed hypotheses were validated as students were able, to varying degrees, attain autonomy in that, they developed key skills that are necessary for their survival in the 21st century world. Dealing with its impact, students were able to apply their content knowledge in real-world context and hence create functional products that were presented to a real audience.

This research does not, by any means, insinuate to portray the PBL instructional model as the only paradigm to solve this modern era's educational issues. Rather, it echoes the fact that it is of supreme eminence that the current educational system must be up-dated and up-graded to provide the required educational quality that is to hone and prepare 21st century learners to operate successfully in this dynamic world.

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