PACIE Methodology Applied to English Teaching in Virtual Classrooms with Moodle

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Abstract
The misapplication of a digital presence, academic scope, inadequate training, low interaction, and a methodology with little pedagogy suitable within a virtual learning environment such as virtual classrooms on any platform, whether Moodle, Claroline, Kornukopia, or Chamilo, Etc., lead to decrease and demerit significant learning at the time of training or study an online course or in turn to achieve a certificate with distance education and quality. This particular related to virtual learning environments causes collaterally severe damage when applying a correct methodology, while also generating a high dropout rate in this type of distance education or E-learning that is currently booming and which becomes an excellent alternative for any student who wants to break the barriers of time and space. Furthermore,This research has 1200 participants from Salesiana University, 13 language teachers, and two e-learning expert instructors, which showed the improvement in language acquisition throughout PACIE methodology.

Keywords: PACIE Methodology, Virtual Learning Environments, Information Technology and Communication, Platforms, E-learning

Introduction

The inclusion of technology in face-to-face classrooms as a support to improve meaningful learning where human learning develops in a naturally active mental and social process by engaging their learning process interacting and manipulating the objects in that environment. (Jonassen & Strobel, 2006). Therefore, technology use has grown exponentially, resulting in many changes, including new forms of teaching, focused on distance learning or e-learning, to reduce university dropouts and bulky classrooms with a high number of students.

Nevertheless, unfortunately, with the emergence of many educational platforms and virtual classrooms as support for face-to-face classrooms and distance education, students' interest is reduced, demotivation to study increases due to the lack of a suitable pedagogy and methodology applied to environments 0, virtual classrooms. In fact, this is because of ¨the nature of the tasks that so many students most commonly experience in schools is completing standardized tests or memorizing information for teacher-constructed tests. ¨ (Howland, Jonassen, & Marra, 2012,p2)

However, the adequate application of ICTs in the teaching and educational management processes allowed access to educational content, real-time interactions, wikis, or collaborative work, and other devices and tools that support and go hand in hand with the dissemination of knowledge. Unfortunately, some of digital educative resources were underutilized due to the little or no knowledge of implementing a satisfactory methodology and pedagogy within virtual learning environments.

As a result, the classrooms lacked a correct order or organization and had low interactivity, poor virtual presence, and little academic reach. However, teachers must consider adequate pedagogical use of ICTs in class which has led to innovative methods, sometimes replacing traditional face-to-face and distance teaching methods with radical online learning designs, or more incremental changes that blend online with traditional face-to face or print-based distance teaching approaches. (Caird & Lane, 2015)

For this reason, this research is intended to improve the use of virtual classrooms in any VLE and generate in the student the interest of working within virtual environments with an appropriate pedagogical and methodological quality and develop improvements in English language learning.

Background

According to the premise underlying the (UNESCO, 2010) "Towards inclusive knowledge societies", the contribution of ICTs has been transcendental for humanity, due to the considerable impact on academic and continuing education processes through real-time educational content and devices that allow communication, interaction, and dissemination of knowledge.

The implementation of virtual learning spaces favors many aspects that are not contemplated in the face-to-face; so it is necessary to find optimal e-learning platforms coupled with the PACIE methodology, which facilitates the introduction of this online learning within the educational processes. Many countries such as Europe, the United States, and Latin America have failed due to the exaggerated dependence on technological devices such as computers

and the Internet, neglecting the methodology and pedagogy, i.e. the educational area itself. (Oñate, 2009)

With the application of virtual classrooms in educational processes on different platforms both open source and private, it becomes necessary to have a specific order and an adequate structure within the EVA or AVA that allows independent learning with correct routes to work collaboratively within the virtual environment.

The PACIE Methodology is focused on the learning and self-learning processes, giving a pedagogical enhancement to distance or blended learning. (Camacho P., 2008). The P.A.C.I.E. methodology whose acronym means (P) Presence (A) Scope (Training) and (I) interaction proposes the following aspects to consider when working virtually (Jácome, L., 2010). It consists of specific phases:

Graph 1: Phases of PACIE Methodology

Source: by the author

The first phase or Presence in an (EVA) focuses on the visual part that the teacher transmits to the student, through the correct use of the optimal resources provided by Web 2.0. (Camacho, 2011). Virtual classrooms, in addition to being efficient, should cause a visual impact, interesting and attractive not only for students but teachers, authorities, and users in general; that is to give life to the virtual campus with color, images, videos, photographs, etc., that is why significant educational content resources should be used, in addition to using additional tools to the platform for a consolidated presence on the internet that serves as cognitive support. (Zerpa, 2012).

The second stage, (Zerpa, 2012), mentions that the PACIE methodology is based on establishing precise objectives about what is done with students on the network such as: communicate, interact, and report; thus making the academic, experimental, and tutorial scope effective, and meeting the main objective, that the student learns.

(Pérez, 2010), exposes the third phase that makes up the Training, preceded by the scope and followed by the interaction, a sequence is achieved with which a more extensive vision of virtual education is strategically generated, starting from the micro that is the design of virtual classrooms to the macro that involves the training of human talent.

The fourth phase called Interaction uses educational resources to collectivize and share, where the teacher motivates, guides, and accompanies the student, seeks to eliminate the

overload of many activities and generates interactive classrooms which cause real interaction in an EVA; at the same time seeks to stimulate student collaboration on Online encouraging socialization on the Internet. At this stage (Zerpa, 2012), he argues that communication should focus on EVA with updated information maintaining the institutional (corporate) image.

The structure generated by applying the methodology makes it possible to divide the virtual environment into 3 main blocks.

Zero Block – PACIE

1) Information Section. About the course, tutor, and evaluation.
2) Communication Section. On the process of classroom operations.
3) Interaction Section. Collaborative learning.

Academic Block.

1) Exhibition Section. Academic course information, resources.
2) Rebound Section. Self-criticism activities
3) Construction Section. Knowledge Building, Analysis and Discussion
4) Checking Section. Synthesis, Comparison, and Verification.

Closing Block

1) Negotiating Section.
2) Feedback section.

The fifth phase of the PACIE methodology is called e-learning, which is based on and executed through the Internet, between teacher and student, maintaining synchronous and asynchronous communication, the student in this stage of the methodology becomes the center of the training, at the time of self-managing their own learning. The word "e-learning" means Electronic Learning. The same is conjugated with the different technologies and to the pedagogical and methodological aspects of the teaching and learning process.

E-learning is based on the following aspects:
Pedagogical, which refers to Educational Technology as the standard of educational sciences, proper to technological means, educational psychology, and didactics.

Technological, concerning Information and Communication Technologies, through the choice of web 2.0 tools, design, individualization, implementation, hosting and where the open-source or free software technologies are integrated.

The pedagogical principles are the core of e-learning and work with the contents, perhaps at the beginning they are the least perceptible, but finally, they are the most important components for effective techniques of the teaching and learning process objectives and effectiveness techniques.

Characteristics of the PACIE Methodology

This modality of training or distance education through the Internet or blended learning helps training to reach a larger conglomerate of people. Among the most visible features of e-learning are the following:
The space-time barrier disappears: Students can take and participate in a course from their home or workplace, having access to all the contents of a course at any time of the day and hour. This way, the time a person dedicates to self-training can be maximized.

Accessibility and flexibility: It allows the development of a fairly accessible and flexible training to the new way of education today, due to a large number and variety of existing methods and resources on the web, properly employed within a virtual environment; given their contribution to the knowledge they can adapt to the characteristics and needs of any student with any type of need and with different learning styles.

Student-centered: The student ceases to be a passive entity within the learning process and becomes the center of the teaching-learning process and participates actively and participative through constructivist learning, i.e. the student knows his needs and becomes the builder of his own knowledge, self-training according to his own needs and interests; while the teacher becomes a virtual tutor or facilitator of knowledge, who guides and orients the student throughout his training process using ICT tools that virtual platforms offer for a better acquisition of knowledge.

Avoid impact shocks: PACIE facilitates techno-educational processes that are developed consecutively and gradually to avoid impact shocks that may generate resistance in various groups of the learning community such as teachers and students, due to a curricular overload of work and student time, respectively.

Techno-education: PACIE includes ICTs within the educational processes, but no longer revolving around the student, it is mostly focused on the teacher who is the axis of the educational processes on the Internet, with the administrative and curricular burden that the teacher has; PACIE seeks to provide the teacher with all the necessary resources to take advantage of technology in favor of education and not in an inverse process, therefore, PACIE allows the inclusion of e-learning based on the teacher.

Competencies

In this sense, among the competencies necessary for the teacher to perform successfully in virtual environments, according to (Yot, 2016) "the mastery of didactics, technology and tutoring is fundamental, as well as the empowerment of technological competence that is connected to the mastery of basic digital skills such as, (hardware, file management, navigation, multimedia application, web pages, author software, Internet applications)", interest in permanent renewal and updating and ability to simplify the technological and procedural aspects so that the student can focus on the exclusively formative.

"Digital Competence involves the critical and safe use of Information Society Technologies for work, leisure, and communication. Building on basic ICT skills: using computers to retrieve, evaluate, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet" (European Parliament and the Council, 2006).

The didactic competence is linked to the knowledge of learning theories and principles of adult learning, scientific mastery of the specific area of knowledge, ability to adapt to new training formats, creative and innovative attitude to the multiple opportunities that arise at each stage of a virtual course. (Revista Electrónica Diálogos Educativos, 2012).

Finally, tutorial competence refers to communication skills, ability to adapt to different users respecting their religion, race, social condition, open-mindedness, and perseverance to follow up the student's progress and predisposition to assume roles according to the learning situations. (Revista Electrónica Diálogos Educativos, 2012).

In addition, the value of good tutoring or timely assistance to the student within a VPA is of no less importance, as mentioned by (Chickering, A., & Gamson, Z. 1987), in their article "Seven principles for good practice in undergraduate education. AAHE bulletin, 3,7." refer that the 'good practices' observed in VPAs lead to: (a) encouraging student-faculty contact; (b) encouraging cooperation among students; (c) encouraging active learning; (d) providing prompt feedback to students; (e) emphasizing time on task: (f) conveying high expectations; and (g) respecting different abilities and learning styles.

Roles

Regarding the e-mediator's role, (Ferrer, 2012) it is located in four main areas: the pedagogical, related to the development of an effective virtual learning process; the social, linked to the development of a learning environment with a comfortable emotional and affective climate in which students or participants feel that learning is possible; the organizational and managerial, related to the establishment of an adequate and trained instructional design that includes encouraging or motivating those involved in this process to be clear in their contributions; and finally the technical, which includes actions aimed at helping students feel competent and comfortable with the different resources and tools.

Methodology

This research is of a mixed qualitative and quantitative type since its objective is to measure the improvement of the teaching-learning process through the Moodle platform for students and the application of the PACIE methodology in virtual classrooms for teachers.

It is quantitative research because it determines its processes systematically, methodological, and means that it is in permanent transformation. The modality on which this research is based on the objectives since it is beneficial for students, teachers, authorities, and society, and it is intended to reduce the desertion rate of students in e-learning and b-learning courses by applying the PACIE methodology" optimizing and perfecting the design of learning processes through the mentioned methodology and the improved management scheme of virtual classrooms.

The type of study applied is descriptive since it is field research, and it will take place in the Faculty of Languages of the Salesian Polytechnic University. It is also Web-bibliographic because it is essential to develop the research based on a series of articles related to applying the PACIE methodology in virtual classrooms.

Due to its nature, the present research is considered to be experimental, descriptive, and applied research since the knowledge will be used to carry out a study of the incidence of the

use of the PACIE methodology in classrooms of the Moodle virtual platform as a methodological strategy of learning, applied to the first level students of Languages of the School of Environmental Engineering.

Participants

The population is made up of students enrolled in the subject of English in the first year of Environmental Engineering in the first cycle of the 2018 - 2019 semester with 50 students of Environmental Engineering and 50 students of the second cycle of the 2019 - 2019 semester and teachers who taught English in the periods mentioned above, which total 13.

The Moodle virtual platform was used with classrooms designed with the PACIE Methodology with the Environmental Engineering students of the 2019 - 2019 semester, while the Environmental Engineering students of the 2019 - 2019 period did not use the methodology above. A total population of 1200 students and 13 teachers participated in this research.

In addition, the Survey technique was used, one applied to students and another to teachers with reference indicators (Moodle virtual platform, synchronous and asynchronous activities, Internet, and WEB 2.0 Tools), and the instrument used consists of 1 questionnaire with ten questions. Once the student survey had been developed, a survey was conducted with teachers unaware of and did not apply the PACIE methodology in their virtual classrooms.

Analysis and Results Interpretation

In this research, the survey and observation have been used as a data collection technique, the same that was applied to the two groups (experimental group and control group), the experimental group includes the environmental engineering students of the 2016-2017 semester and the environmental engineering students of the 2015 - 2016 semester to the control group, which allowed them to capture, appreciate and perceive reality for decision-making.

For the analysis and interpretation of the results of the survey applied to first-year students of Environmental Engineering School in the English subject were considered the following criteria: accessibility, frequency of use, instructional virtual classroom design, technological learning tools, assessment system, interaction, and learning materials. It is detailed below:

Question 1

How easily can you access and solve the exercises in the virtual classroom?

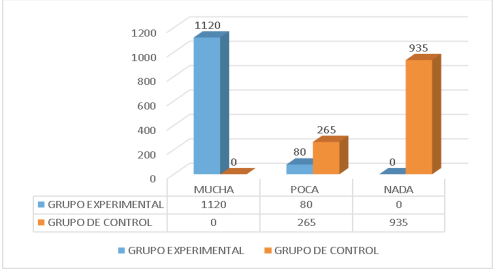

Figure 1. Result of Experimental Group Vs Control Group

A high percentage of students where teachers apply PACIE methodology can access and solve exercises in their virtual learning environment. The results show how learning is strengthened, awakens interest in learning mediation between teachers and students. In addition, it stimulates the sense of autonomous responsibility and supports and strengthens curricular and extracurricular teaching-learning practices from various innovative scenarios; while a high number of students where the methodology is not applied have problems accessing and resolving their activities in the EVA (Virtual Learning Environment).

Question 2

How often do you use your virtual environment for academic activities?

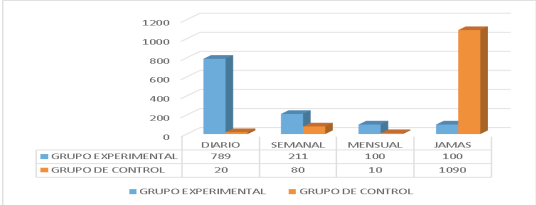

Figure 2. Result of Experimental group Vs Control group.

The repetition and continuity in the use of the virtual classrooms where they were designed with PACIE methodology encouraged the students the pleasure and interest to enter their EVA and work in it, while in the other group we can observe the opposite.

Question 3

Is your virtual classroom designed in a more interactive, intuitive, and easy way to navigate?

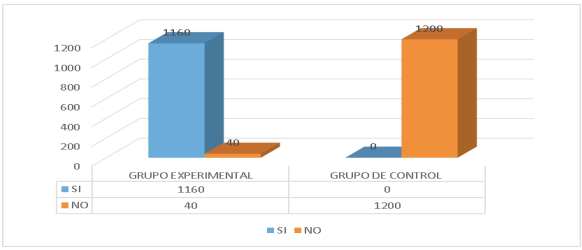

Figure 3. Result of Experimental group Vs Control group.

1160 students state that their EVA is designed in a more interactive and intuitive way when working on it, while in the control group without PACIE there is a high rate of students who find their EVA difficult to navigate, unattractive, and interactive.

Question 4

Do you think it is necessary for the teacher to use NICT as didactic material in the second language learning such as English?

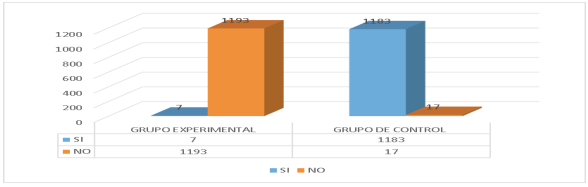

Figure 4. Result of Experimental group Vs Control group.

In the classrooms where PACIE was applied, students do not feel the need for their teacher to use more didactic material than that existing in the EVA, while in the classrooms that do not work with the methodology, they demand that the teacher work with much more didactic and attractive material appropriate to the subject he/she teaches.

Question 5

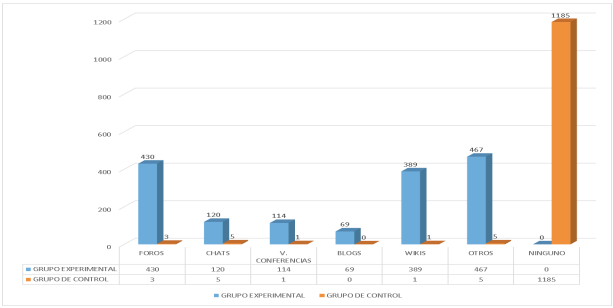

Figure 5. Result of Experimental group Vs Control

Does your teacher make use of Discussion Forums, Chats, Videoconference, Blogs, Wikis, Other, None for the learning process?

By using an EVA correctly with an appropriate, inclusive, and varied methodology in their classroom activities, students have the possibility to work individually or collectively allowing them to have better reception and enjoyment of the subject, while in the other group where PACIE was not applied there is no work from either the teacher or the students in their EVA.

The analysis and interpretation of the survey results applied to first-year teachers at Environmental Engineering School in the English curriculum once the PACIE methodology was applied in their virtual classrooms are detailed below:

Question 1

Do you use resources such as (forums, chats, quizzes, etc.) file sharing spaces in your virtual classroom in the academic block?

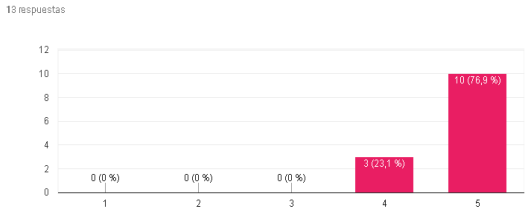

Figure 1. Result of Question Applied PACIE Methodology

When P.A.C.I.E. is applied in the classroom, 76.9% of teachers work with their students in an orderly and correct manner, providing a better quality of education.

Question 2

Are your students able to locate and understand the instructions on the topics or exercises you place in your AVAC applying the P.A.C.I.E. methodology?

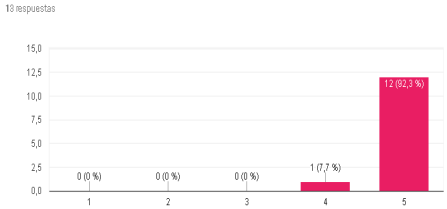

Figure 2. Result of Question Applied P.A.C.I.E.

92.3% of teachers' state that the instructions of the exercises or activities they post in their EVA applying P.A.C.I.E. are now more understandable.

Question 3

Has the number of retired students in your class been reduced when you apply P.A.C.I.E. in your virtual classroom?

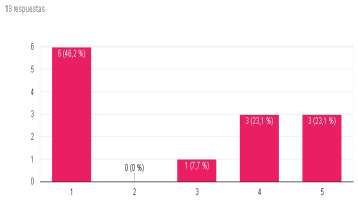

Figure 3. Result of Question Applied PACIE

Absenteeism and dropout rates in courses taught through a virtual classroom have been reduced, not completely, but by 42.2% when applying P.A.C.I.E.

Question 4

Are your students motivated to do evaluations, activities, and permanent work in the virtual classroom using PACIE?

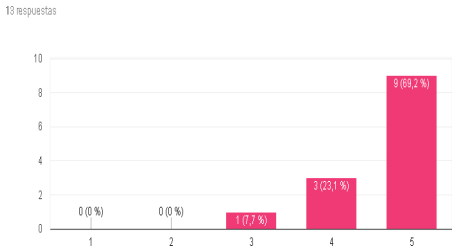

Figure 4. Result of Question Applying PACIE

69.2% of students feel motivated and willing to continue with the course using PACIE, motivation is the main driver when working on e-learning or b-learning courses.

Conclusions

The use and work on a virtual platform as a methodological strategy do NOT improve the English teaching-learning process in the first-year students of Environmental Engineering in the English subject. What improves the learning-teaching process of Environmental Engineering students is the methodology implemented in the virtual classroom.

The appropriate use of the New Information and Communication Technologies and a good methodology facilitate the educational process in the English subject since it allows the creation of learning objects that support and validate the contents in a virtual environment of learning or VLE.

With the implementation and use of virtual learning environments applying the P.A.C.I.E methodology as a methodological strategy, meaningful learning is achieved in the students of the experimental group, having meaningful resources like improving in their academic scores between 92-99 %.

The experimental group students achieved better academic performance by being evaluated through a virtual classroom with the P.AC.I.E. methodology and dropout and absenteeism were reduced by a high percentage of 80%.

Having a correct methodology in a V.L.E (Virtual Learning Environment) helps students the possibility to have a good language acquisition in many different skills such as: Listening, Reading, Speaking, and writing, because it provides a logical, sequential process and for students help to follow appropriately any kind of instruction for different tasks in the VLE.

Future work

This research makes a meaningful contribution to online education, a modality that will continue, so it is necessary to support with New Information and Communication Technologies and an adequate methodology that facilitate the educational process in any subject, through the creation of learning objects that allow learning the contents.

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Resources

"Competencias profesionales para el desempeño en eLearning" by Carmen Yot & Carlos García: https://www.researchgate.net/publication/302924736_Competencias_profesionales_para_el_desempeno_en_eLearning

"Importancia de la metodología PACIE en los EVAs" by Ligia Jácome: https://pdfslide.tips/education/importancia-de-la-metodologia-pacie-en-los-evas.html

"La metodología PACIE. Fundación para la Actualización tecnológica de Latinoamérica" by Luis Oñate: https://docplayer.es/55319-La-metodologia-pacie-autor-ing-luis-onate.html

"Modelo de Educación Virtual – PACIE" by Pedro Camacho: https://www.scielo.cl/scielo.php?script=sci_arttext&pid=S071850062018000200035&lang=pt

PACIE. Introducción, Presencia y Alcance by Alexander Zerpa: http://metodologiapacieacuariogeminis.blogspot.com/2012/11/pacie-introduccion-presencia-y-alcance.html

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