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An Active Teaching Learning Process -ATLP Working with Humans, from Humans -the true Role of the Teacher, the Success of the Learner

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Abstract

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Index terms—

1 I. INTRODUCTION

In this document we start from the consideration that a class, module or academic event, whether face-to-face or online, or any other modality, should lead the student towards active learning, allowing him to find solutions to problems, both academic and professional or every day, allowing him to learn from success and error, investigating, discovering new situations and developing, as far as possible, his own concepts, in order to form him integrally, generating positive effects in his personal professional life, in other words, to be the protagonist of his own learning.

An active protagonism in the process of learning by doing, and not by listening to monologues of wise teachers is what students need; and the teacher, in addition to his knowledge of the subject, must know, learn and master very well, effective didactic techniques to develop active educational events, in which the student is the active protagonist in the acquisition of competences for his personal and professional life.

In short, we must support teachers, authors of face-to-face or online classes, to design and implement them technically, more effectively, applying quality criteria at the different levels of the process of content production and collaborative activities of the subject. The teacher will become a facilitator of stimuli for students to analyze, evaluate, synthesize and apply the knowledge developed and acquired.

Finally, the teacher must become a true facilitator or mentor of learning, instead of a mere distributor of repositories, knowing the needs, frustrations and successes of their students, thus achieving that humans work with and for humans, transmitting joy in educating and thus contributing to reducing school dropout of students.

Lessons developed with an active methodology will be very interactive, motivating and creative, in contrast to lessons in which the appropriate didactic techniques have not been applied.

We do not intend to evaluate the methodology and techniques suggested in this document with others; we wish to make the author of lessons aware of the need to systematize the process of lesson authoring and describe a methodology for lesson design, which produced highly positive and observable results with students and teachers in other experiences.

We wish that the teacher will be able to incorporate several pedagogical techniques, gradually, to his face-to-face or virtual classes, London Journal of Research in Humanities and Social Sciences verifying progress, according to the indicators presented in the document.

The central part of the work is the methodological aspect in which real classroom activities can be developed leading to the design and implementation of lessons, incorporating various instructional techniques implemented and tested in the various subjects. These have been successfully used in traditional classroom environments, as has been the author's experience at the USB in similar workshops ??1975) ??1976) ??1977) ??1978) ??1979) ??1980) ??1981) ??1982) ??1983) ??1984) ??1985) and at ITALSIEL in Rome, Italy, as well as other successful experiences with teachers in Ecuadorian schools and universities, such as at the CVI, FLACSO, IAEN, UASB, among others.

2 II. PREFACE

The novelty of the work focuses on translating these experiences into a classroom laboratory in homogeneous and related activities, in addition to extrapolating them to the field of online lessons.

The techniques for implementing the lessons used in educational platforms are transparent to the authoring system or language; past examples of these have been developed with interactive CDs only for demonstration with the IDEA authoring system (EPSON).

In conjunction with this work, another project was developed which consists of an authoring system called VP (Virtual Professor) incorporating the methodology and techniques presented in this work, as well as the desirable characteristics of a course authoring system with multimedia environment, the "metaverse" and artificial intelligence, to arrive at the "virtual intelligent professor" (VIP), an intelligent authoring system to be developed with advanced technologies and Artificial Intelligence -AI.

! The only CONSTANT must be CHANGE ¡ After the industrial, information and technological eras, we are now facing the era of knowledge, in which both "industry" and "technology" work together to develop the generation and transmission of knowledge.

This irreversible reality will have consequences of unsuspected dimensions in all areas of human endeavor, both in the advances of artificial intelligence and the so-called "metaverse", without forgetting education, on which it will exert changes in the contents and learning processes, demanding from both the "teacher" and the "student" a greater quantity and quality of work, through the use of the so-called latest generation tools.

Of course, the solution does not lie in the mere fact of acquiring a large number of computers and disseminating them throughout the country, rather, the emphasis should be on the educational policies and strategies to be implemented, the preparation of teachers, the optimal management of resources, the renewal of programs, the updating of methodologies and others (the list is extensive). Undoubtedly, the computer is a key element for education and the preparation of an informatized society, but it must be used intelligently, together with other technological London Journal of Research in Humanities and Social Sciences resources, to achieve positive changes in the knowledge revolution.

Almost 60 years ago (1965) Isaac Asimov wrote, among other things, that by the beginning of the millennium, an increasing number of people will have to interact with computers, which is why programming languages will be taught from the first years of schooling, personalized instruction will be massified through computers, and direct student-teacher contact education will be limited, particularly for young people with special disabilities and geniuses.

Currently, due to the rapid evolution of electronics with its processes of micro miniaturization of circuits, the very high speed of these, their reduced energy consumption to operate, continuous work without failures and the fall in prices, have made it possible for a large majority to acquire the microcomputer tool.

The problem lies not so much in how to buy it but in how to use it, both by teachers and students, to produce benefits towards a better organization and greater production in this era of knowledge.

With the explosion of science and technology, advances in technological products for the support of education have not been lacking today; with the appearance of Audiovisual Media in the sixties, the arrival of Mini and Microcomputers in the late seventies and eighties, and the emergence from the nineties to the present of Multimedia, and even more so in the current decade with the contribution of AI, education has always had the hope of finding more effective ways to transmit knowledge.

It is evident that technology "per se" has not helped to solve the many educational problems that still exist, nor has it improved computer-based Internet instruction, although it has facilitated and massified it; something more is needed, and this is an active, truly interactive methodology for the design and facilitation of lessons online, face-to-face or in any modality.

Reviewing lessons designed for computers, even by famous computer companies in the past, they still need to improve in instructional elements, but not necessarily in content; it is indispensable to follow an appropriate methodology for a quality design, which will result in the reduction of production costs of lessons, editable at any time, thus offering a greater viability to its users.

It is impossible to become an expert in designing online events with only one or two preparation courses as many educational institutions market today; it is needed at least four or five courses. An excellent example of a quality program is that of the University of Wisconsin at Madison with their "Professional Certificate in Distance Education".

If these technologies such as audiovisual, multimedia, microcomputers and interactive online resources had been used, not with a commercial criterion, but based on the needs of the learner as the center of the teaching-learning process, the results would be different. For this reason, it is essential to take advantage, nowadays, of the interaction capacity of computers together with the versatility and interconnectivity of multimedia for networking with online course management systems, relying on a methodology and the use of appropriate techniques to make the best use of these media. Remember, where there are networks, there is life.

The central aspect of a course to elaborate more effective lessons should be a workshop with a laboratory, where different techniques are introduced to practice them with video recording.

Advances in electronics and computing have allowed the development of increasingly powerful authoring and management systems; with the future development of artificial intelligence in the specific subjects of expert systems, metaverse and neural networks, advances in authoring systems will be a fact, allowing the development

of increasingly intelligent lessons with new ICT tools. The intelligent virtual teacher will be a reality, undoubtedly, teachers will need a methodology according to future advances.

Next, the various items will be developed, one for each technique, the minimum necessary to develop an active class. In each session you will find the theoretical development of the technique to evaluate it, to be applied in the classroom.

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3 III. LESSON PLANNING

Every activity, from the construction of a house to the preparation of a lesson must be planned with precision; this is an "engineered" and systematic process, where all the steps are described and documented in detail, from the general to the specific, for the achievement of a complete and successful learning, where every action has been duly thought out and justified. All these activities must be planned to generate success in the learner, towards his own knowledge. What do I want him to learn? What message do I want to convey? What actions should he perform? How will the student self-evaluate?

It is common to find the following types of lessons:

? Lessons planned in the past that continue to be used, without updating. ? Lessons that are improvised, devoid of any planning.

? Lessons that only emphasize the content, forgetting the process.

? Lessons that do not verify if they achieve learning and therefore the designers (teachers) do not know the goodness of the methods they use.

? Lesson designers who plan, but do not know if the problems they encounter in the teaching-learning process are due to deficiencies in planning or lack of skill in execution.

? Teachers who sometimes make their students feel very motivated in their lessons, without being prepared to keep their students' attention during the rest of the teachinglearning process.

There is, in most of these cases, a gap between what is to be achieved, what is achieved, what is done to achieve it, and how the learning is assessed.

It is necessary for the teacher -lesson designer, who wants to achieve learning, to ask at least the following questions:

? What learning is to be achieved? ? What is going to be done to achieve it?

? How do we know if it was achieved?

4 IV. BEGINNING OF THE CLASS

Every beginning should be interesting: doubts are cleared up, objectives are clarified, motivation is provided, orientation is given, connections are made with previous experiences, among a number of other activities at the beginning of an important learning process.

The first minutes of a lesson or of any educational experience determine, to a great extent, its outcome, due to the phenomena that influences the student's perception. What a person perceives is largely determined by the presentation received, the stimulus and the cultural and life context. This is a great reality; it is said that the first impression is worth a lot. Thus, the beginning of the opening experience of a teaching-learning process is crucial for its success. It must be motivating, impacting, interesting and exciting.

Among several aspects we should consider the following indicators: it has to generate trust through an effective and respectful relationship, offer security, motivate by providing interest, present learning objectives, pay attention to students´needs, avoid verbal violence, work with the experiential field of the students, present current events, etc.

5 V. QUESTION FORMULATION

Well used, the question is one of the great pedagogical resources available to the teacher (designer of his subject) to energize his lessons through the various resources available on the educational platform and on the Web for the development of an appropriate interaction with the student in person or online, in order to achieve their participation and comprehensive learning. It is also necessary to clarify to the students that they can ask any questions. Let us remember that in every question two essential elements must be considered: FUNCTION and FORM.

The function oriented towards what the teacher wants to achieve with the question (what is the purpose of the question?). The form is the way the teacher formulates the question (How does the London Journal of Research in Humanities and Social Sciences teacher ask it?). The form of the question must always be subordinate to the function. Once the function has been determined, the teacher chooses the most appropriate way (form) to formulate it. Some indicators of an adequate formulation of questions: it has a purpose, it formulates them clearly verifying previous experiences and knowledge, it offers them with increasing difficulty offering reasonable time for the answer, and it evaluates results verifying learning.

6 VI. RESPONSE PROCESSING

The highest level teacher is not the one who "covers" all the subject matter, but the one who uncovers part of it to his students, and in the process of doing so teaches them to think and apply knowledge to new situations: he cultivates in them the ability to "learn to learn". It is precisely this that the teacher-designer must induce in his students, through the class.

The teacher must be very aware of certain types of responses from his students in order to know how to process them. Some possible types of responses from students might be:

? Monosyllabic or brief responses (Yes, no, maybe, etc.).

? The student states that does not know.

? Vague or incomplete answers.

? Incorrect answers.

? Satisfactory answers. Some indicators: promotes analysis and synthesis, asks for justification, analyzes the essential elements of an incorrect answer and those of a correct one, among several others.

7 VII. USE OF EXAMPLES

Many times in a class, useless efforts are made to get students to understand a concept, a principle or a generalization. Often there is a communication problem in these cases: either the students' experiential field has not been reached or their experiential field is not rich enough to give meaning to what the lesson is trying to communicate.

One of the didactic resources to solve this situation is the adequate use of examples. A good example serves as a bridge between the student's experiential field and the concept that is being incorporated into that field; the elements of the known situation serve as a handle for the student to understand the unfamiliarity of the new situation. The examples can be presented following three patterns known to teachers: induction, deduction and contraposition.

8 VIII. TEACHING CONCEPTS

It is essential to guide the teacher-author of a class in the planning and design of lessons related to the development of concepts for a basic teaching module, which can be supported by the use of appropriate examples.

It is important to point out that when talking about concept development or teaching, it should be kept in mind that a concept can be learned through the procedure of contrast practice. This is a process that represents a common property of objects or facts and that in turn allows the elements to be divided into categories.

Another important aspect about the "Teaching of Concepts" is the fact that a great part of formal education, as well as non-formal education, consists of learning concepts. However, we must not forget that not all concepts are developed in the same way, and that is where the teacher must be careful in the design of his educational event, in order to induce students in hierarchization and categorization.

For example, the concepts that are more easily formed are those that have object-like characteristics, as opposed to those that present more abstract relationships of form, function or number, such as mathematical ones.

Some teachers are astonished when, at the end of the lesson, they find that the vast majority of students are unclear about important concepts.

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Others find themselves in a situation where they cannot communicate with their students when they try to introduce a new concept used in class.

Among the most common causes of such facts we can mention the following: teachers, when teaching concepts, do not resort to the students' experience (experiential field), do not motivate them, introduce many concepts at the same time, are not clear and orderly, do not rely on the use of examples and do not know whether the students have understood the activity.

Then, the teacher must try to maintain a dynamic attitude during the process of "Teaching Concepts" (in his students) throughout the class and thus avoid monotony; it is necessary to vary the difficulty and make the student develop the concept, this last aspect being very important.

For the student to develop an adequate approach to the concept, we suggest that:

(1) Ideally, the teacher should not give the concepts already "done" to the students. (**??**) The student himself should produce and formulate the concepts from his own experience or an adequate use of examples. (3) Taught in this way, the concept will acquire greater duration, meaning and depth, and the student will feel that the knowledge is more his own and that it belongs to him. He/she will have apprehended it and will work on it and apply it with more strength and motivation, generating a very high self-esteem.

The following are some useful indicators for teaching concepts: a motivating environment should be generated, concepts should be developed gradually with increasing difficulty and should be offered adequate time for students to work on them and learn their applicability.

10 IX. PROBLEM SOLVING

The solution of a problem can be defined as the planned attack to a difficulty or doubt, with the purpose of finding a satisfactory solution to the proposed problem.

If it is assumed that a problem exists when there is a difference between a given initial situation and an expected final situation, each of the phases of the teaching-learning process can be considered as particular cases of problem solving, where teachers and students implement plans and strategies to bridge the differences or remove the obstacles between the given and expected conditions, situation that ultimately is nothing more than the achievement of learning.

This means that the success of the modules of an interactive class will depend to a great extent on the behavior that the teacher, as a problemsolving guide, assumes throughout the lesson, in each of the phases or techniques used in the teaching-learning process in his or her class.

In effect, the teacher must assume the instruction as a challenge, where in the different phases will be using convenient action plans, in order to achieve the learning objectives.

The design of strategies in the classroom for the student to solve problems involves a decisionmaking process, which the teacher, in this case, executes in a planned and systematic way towards the achievement of the goal.

Understanding the problem implies an analysis, understanding the objective to be achieved (the desired or expected condition) and understanding the elements of the problem. The latter will make it possible to recognize the means available to solve the problem, as well as the missing and irrelevant elements.

Based on the understanding of the problem, a plan of action (hypothesis formulation) is generated, which may involve a set of solution alternatives, with two or more alternatives to be considered.

The development phase of a given alternative, which theoretically appears to be the most viable, involves a set of activities aimed at achieving the proposed objective (desired condition), such as review of existing documentation, among other activities.

Verification of the solution means that the teacher must ensure, through an evaluative process within the class, whether the student reached the London Journal of Research in Humanities and Social Sciences solution to the problem, whether the teachers motivated the students, or whether they managed to formulate appropriate questions, or whether they used relevant examples to the contents and level of the students, or whether the techniques used for the development of concepts were effective and whether the students achieved learning.

By constantly applying the ”scientific method”, from preschool, through elementary school, high school, university, etc., to professional activity, the students will definitely internalize the habit of solving problems, as the essence of life itself. Let’s remember: every problem has at least ”a solution”.

And now, some indicators: the problem has been identified and understanding is verified, a hypothesis has been formulated towards a verifiable solution alternative.

11 X. CLOSING

Every person has the tendency to complete ideas and form ”logical wholes”. Learning is facilitated by organizing experiences into related ”wholes”. Every process must have a beginning and an end, evidencing a close relationship between the two.

Learning is a process, or more precisely, a set of processes that have a beginning and an end.

During the development of a learning act, several different processes are involved, which can be analyzed and broken down into phases, each of which performs a different type of activity. These processes can occur in sequence, but also two or more of them occur simultaneously.

The closing is closely related to the beginning, since it sets out the objectives to be achieved during the teaching-learning process; therefore, the ”closing” constitutes the evaluation of the proposed objectives achieved and the relevant contents of the subject in question.

The summary of the subject matter covered in class and of conclusions by the students favors meta-cognition, prioritizing contents. Additionally, the teacher can have reflective questions for the students such as the most difficult or easiest part of the class and why; additionally, allow them to participate with questioning, as well, generating action and activity in the students.

Another important aspect of this technique is that the lesson provides a ”closure” so that the student, after the whole teaching-learning process, reaches a conclusion of the objectives set at the beginning phase through summaries of the main ideas, indicating relationships between ideas and examining possible practical applications to what has been learned. The lesson prepared by the teacher can present exercises that complement the topic so that the student is the one who reaches the conclusion. Some indicators: was there a formative or summative evaluation of the learning process, did the students make a summary or reached a conclusion, have they formulated the applicability of what was learned, among other closing activities of a class.

12 XI. CONCLUSION

Over the years, the application of didactic techniques has shown the production of very sound academic human active classes to the benefit of students and teachers, as well. The techniques promote very interesting activities, such as multi directional communication, group interchange, case studies, concepts acquisition, situational analysis, synthesis production, creative thinking, among other cognitive production results.

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Figure 1:

Figure 2:

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