

EVALUATIVE MODEL OF A SUBJECT DESIGNED UNDER THE SCHEME EBC. CASE: STRATEGIC MANAGEMENT IPI SCHOOL OF THE UCV.

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SUMMARY

The philosophy of Competency-Based Education has been imposing itself as a means to implement university schemes in the world. The Faculty of Engineering of the Central University of Venezuela was the first in the country to develop a program under this scheme, a fact manifested in the Industrial Process Engineering career in 2008. The courses are based on competence indicators, which only offer the professor the means to be used for the evaluation of the course, without indicating an adequate plan with the aspects that should be weighted and considered in the Strategic Management course. This aspect is developed in the research work presented, proposing a novel way of showing the grades through electronic means, an aspect that introduces them to the way they are evaluated in the labor field. Methodologically, the research is based on the interpretative-phenomenological paradigm, appropriate in educational research, with a qualitative approach based on documentary review. The model seeks to provide a new alternative to evaluate competencies, as it is more user-friendly and easier to implement, as well as to follow up.

Keywords: assessment, competencies, engineering, evaluation, strategic management.

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ABSTRACT

The philosophy of Competency-Based Education has been prevailing as a means to implement university schemes in the world. The Faculty of Engineering of the Central University of Venezuela, was the first in the country to develop a program under this scheme, a fact manifested in the Industrial Process Engineering career in 2008. The courses are based on competence indicators, which will they offer the teacher only the means to be used for the evaluation of the course, without indicating an adequate plan with the aspects that should be considered and considered in the Strategic Management course. This aspect is developed in the research work presented, proposing a novel way of showing qualifications through electronic means, an aspect that introduces them to the way it is evaluated in the workplace. The research is methodologically supported under the interpretive-phenomenological paradigm, appropriate in research in the educational area, with a qualitative approach based on the documentary review. The model seeks to provide a new alternative to evaluate competencies, as it is friendlier and easier to implement, as well as to monitor it.

Keywords: evaluation, competencies, engineering, evaluation, strategic administration.

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Introduction

As a result of the events of 2001, the Universidad Central de Venezuela (UCV), committed to the development of the country, began a process of updating, strengthening and expanding its academic offerings, due to the growing need for training professionals related to the industrial and manufacturing sector.

Given this need, a group of professors and experts focused on the task of investigating the needs and concerns of engineering professionals and employers in companies in the central zone of the nation, to recognize their expectations and, determined by these, to design and create a new curricular model that would also comply with the guidelines established by the Faculty of Engineering of the Central University of Venezuela (FIUCV).

Based on the results of the evaluation and analysis of more than 60 interviews and surveys conducted with professionals in the industrial sector in the States of Aragua, Carabobo and Miranda, the contents of the new career emerged, which would come to fill the existing gap, since, at that time and even today, no career in the area of Industrial Engineering is offered by any public university in the State of Aragua. For this reason, the UCV, seeking to develop new areas of interest associated with the Venezuelan reality and fulfilling its role as a source of knowledge and useful professionals, took on the challenge and created the Industrial Process Engineering (IPI) career, the first in the country, fully designed from its origin under the scheme of Competency Based Education (CBE) and located in the highly industrialized city of Cagua in the state of Aragua.

The programmatic contents of the different courses (subjects) were obtained from the analysis of the results of the interviews and surveys, later validated by a Focus Group, carried out with a panel of experts with knowledge in the area, where the necessary knowledge was defined so that the graduates can perform appropriately in the industrial field and, thus, guarantee that they will possess the competencies required by the employers of the industrial sector, which guarantees an outstanding performance in any organization. This information is based on the work submitted to the OPSU (University Sector Planning Office) by Acosta et al (2005), the basis required to formalize its creation.

Once all the required feasibility studies and pertinent documentation have been completed

In September 2008, the National Council of Universities (CNU) gave the go-ahead to start the activities of this new career, with a program structured under the CBE approach, whose main mission is that graduates possess the engineering knowledge required for a career of

this nature and also, upon graduation, have a set of knowledge, skills, abilities, aptitudes and attitudes, which will facilitate their success and integration into the working world.

In the design of the IPI career, the module of Business and Enterprise Creation is an extremely interesting block, since it offers the participant the basic tools to start his own business, recognizing the terms required to generate new organizations.

Inserted in this module is the mandatory course on Strategic Management, located in the 4th semester, which is a fundamental pillar of the module, since it provides the student with the necessary knowledge to recognize and identify the planning models applicable to the strategic objectives of the industrial activity and, in this way, effectively align with the objectives of the company, teaching practical knowledge about the analytical tools available to determine the main characteristics of a company or business.

In the work presented below, the researcher presents a novel model, not used to date in any course of the career and which could be used to meet the evaluation requirements stipulated in the course program, in addition to presenting a novel way of delivering grades through computer programs.

The contributions made for this research, come preceded by the work presented by the author in the Research Conferences of the Faculty of Engineering of the UCV JIFI 2018, where the design of an evaluative model is also addressed, but in that case for the course of Maintenance Management of the IPI career of the UCV.

Methodology

All research work that is carried out, not only contemplates sponsoring or generating new knowledge, but additionally, through the follow-up of a corroborative scientific methodology, it must be able to sponsor other researchers to validate the findings found and additionally make, if necessary, new contributions on the researched topic. This means using, employing, observing and, above all, following a methodology with a well-defined structure that complies with generally accepted guidelines. Alcalá (2008) explains, in his promotion work, that methodology is the systematic study of all the procedures, strategies, tools and expertise resulting from the adequate use of the scientific method in all the steps of the research.

The work presented epistemologically takes an approach based on the paradigm of the interpretative-phenomenological, which Sandín (2003) defines as the best way to assume research in the educational area. In the same order of ideas, Márquez (2015) explains that phenomenology does not presuppose anything, this is placed before any belief to explore and understand the phenomena, as they occur in everyday life. This set of ideas is reinforced by Jiménez (2014), who mentions that this orientation adds and creates new knowledge, because it motivates the researcher to permanently interpret the reality and environment under study.

On the other hand, given the type of research and taking into consideration the position assumed, the qualitative method is the most appropriate to use and Campos (2009) mentions that it gives the researcher the possibility of broadening and deepening the study of the

phenomenon, since the reality can be approached from different perspectives and angles, which gives the opportunity to increase the empirical base and conclude with a greater theoretical significance.

Once the problem to be investigated and the solution is identified, we proceed to interpret the theories to be used, taking the stated objective as a theoretical basis, interpreting and analyzing the whole set of constructs available to the researcher, which makes Villegas (2015), who mentions in his work, that the documentary review is an important contribution to interpret the situations that are associated when using the qualitative method, which is the most appropriate to use in this work, since it involves various perspectives and theoretical premises.

The instruments used for the presentation of the results were graphic media, among which tables in word processors and spreadsheets stand out.

Results and Discussion

Important advances in education are taking place at an impressive speed, many paradigms used at the time of teaching that until recently were given as immovable elements and had to be followed to the letter, are transformed and changed to improve the role of facilitator that the teacher fulfills, with which he can transmit the increasingly extensive and interesting knowledge.

This is also observed at the moment of formulating or applying any engineering, scientific or humanistic process, because to develop them, highly qualified, trained and updated professionals are required, with high expertise and competences, always ready to overcome the challenges posed in the path. Using, consequently, all the appropriate tools within their reach, in order to fulfill their role, which is to solve problems in their field, create new artifacts, more technically advanced and complex equipment or new knowledge in the area of engineering.

According to Callejas (2005), he explains that there must always be the need to incorporate aspects related to social responsibility and ethical commitment, which promotes commitment and responsibility to human personnel and their environment.

The 21st century has become an era of progress, competitiveness and innovation.

It was McClelland (1973) who first studied the need to teach work-oriented competencies, and Barreto (2003) explains this aspect by indicating that each individual attends to the world in a particular way, so that the values, attitudes and characteristics that each person possesses influence the way he or she learns.

Many researchers, as mentioned by Lopez and Valenti (2000), explain that in order for

To form successful engineers, it is not only necessary to have an extensive and updated knowledge or know-how, but to transcend and go beyond, developing additionally the concept of Know-how, this means that not only with knowledge can one act appropriately, it is necessary to demonstrate that one also possesses aptitudes, ingenuity and capacity at the moment of applying this knowledge.

But there is more, within the equation required to train competent professionals, the concepts related to Knowing How to Be, which highlights how an individual should behave in diverse and even adverse circumstances, also with the Want to Do, which is linked to the motivations of the individual to perform work and finally with the Power to Do, which shows all the capabilities of an integral professional.

This means that this set of aptitudes and attitudes (five in total) are the competencies that every engineer must possess in order to be successful and are therefore highly required by employers (Martínez, 2005).

The successful implementation of concepts related to CBE in many universities around the world has led more and more institutions to develop plans following this scheme, which are now a fundamental part of their training plans, contributing considerably to the promotion and development of knowledge. This leads to highlight the concept of competencies, within the educational field, defined by Argudín (2012) as the set of social, affective behaviors, cognitive, psychological, sensory and motor skills that allow to adequately carry out a role, a performance, an activity or a task, highlighting the need to work on all the components mentioned above, when training professionals committed to work.

These theoretical aspects make it necessary to design and create curricula, particularly in engineering careers, that adapt to this new way of teaching and, therefore, change paradigms in relation to traditional educational techniques, in order to reach new conceptual frameworks and adapt them to the new realities, related to changes in technology and that affect the transmission of knowledge, which promote innovative skills in students.

This aspect is also addressed in the work presented by Guillén (2018), where the need to design an educational model relevant to each course of the IPI career at UCV is made clear, so that these can be submitted for consideration by the teachers in charge of teaching each of the courses.

The different competencies that seek to be learned in the Strategic Management course are directly related to the world of work and, as Argudín (2012) explains again, should be taught so that the student identifies and commits to what he/she produces or does, recognizes the process he/she performs and seeks ways to improve the whole environment. This is what is sought when using the concepts of CBE, transmitting all this knowledge in different ways; either directly, as for example with the mission, vision or analysis of the sectorial environment, or transversally taking into account leadership, search for understanding or the introduction of positive changes.

All these factors will always be related to all the modern computer elements, which support the student to develop the analysis and research of recent theoretical content, complementing the CBE and, in turn, helping to know and incorporate methodologies, study various topics, review libraries, references, research and written work, recognize and evaluate working conditions, hygiene, quality assurance and environmental impact, supported by equipment such as cameras or satellite maps, 3D printing and even investigate and create research for their benefit thanks to the amount of content available on the web.

To start with the design of the model, first the topics of the course are established, taken from the curriculum of the IPI program at UCV, Acosta et al (2005) and shown below:

Topic 1: Concept and Model of Strategic Management.

Topic 2: The Mission and Vision of the Business.

Topic 3: Analysis of the Sectorial Environment.

Topic 4: Resources and Capabilities Analysis.

Topic 5: Strategy Formulation.

Topic 6: Implementation of Strategies.

Each of these topics has a weighting within the course syllabus, which the student will the designated professor, given his or her personal work and academic experience, may eventually define based on the criteria of academic freedom offered by UCV to its faculty.

The weighting established in Table 1 is based on the personal criteria of the author of this report who has more than 30 years of experience working in the field, and who is the author of the present research work public and private organizations, in addition to having taught the course on Management Strategic over a long period of time.

Table 1
Evaluation Basis of Theoretical Contents Related to SABER

EVALUATIVE BASIS	
Content by Subject / Competency Knowledge	Percentages (%) of Contents
Concept and Model of Strategic Management.	10
Business Mission and Vision.	10
Sectorial Environment Analysis.	20
Resources and Capabilities Analysis.	20
Formulation of Strategies.	20
Implementation of Strategies.	20

The program used for the design of the tables is that of a spreadsheet and gives the opportunity to make modifications in an easy and friendly way. The sheets could be nested within a single file, an aspect that would facilitate the teacher's management of the file, since they would be easily modified and a new group added each semester or school period, and in

case any information is required regarding performance, grades or other aspects, these can be located with relative ease within the file.

In order for the teacher to permanently recognize what is the objective to be achieved, it is necessary to in the specific case of the Saber competency (blue), Table 2 shows some key words related to this competency.

Table 2
Key Words Associated to the KNOWLEDGE Competence

COMPETENCE	KEYWORD COMPETITION
Knowledge	Knowledge about the topics. Programmatic contents. References bibliographic.

As previously indicated, the course program was developed based on the knowledge provided by the interviewees and respondents (field work), and then confirmed in a Focus Group conducted with a group of experts, during the process of IPI career design.

Each of the courses has an appropriately described set of indicators for each course competencies and for the course under study in particular there are nine. At this stage, again the researcher determines, using his or her expertise and knowledge, which competency he or she is each indicator is associated with it, with the intention of subsequently including it in the proposed evaluation scheme.

As can be seen in the table below, the following table already determined that aspects to be developed in the Saber competency, it is necessary to determine which indicator is going to be used to measure to be approached according to the competence developed, in order to facilitate the development of the evaluation guide instrument, which will be shown later on, will be based on according to the curriculum elaborated by Acosta et al (2005)

Table 3
List of Indicators

LIST OF INDICATORS	
Competency Indicator	Related Competency
Identifies indicators of quality and improvement of production and processes logistics. Recognizes international production and safety standards. Classifies techniques to minimize negative environmental impact.	Know- how
Identifies quality and maintenance improvement indicators. Identifies international maintenance and safety standards. Identifies techniques to minimize negative environmental impact.	Know- how
Identifies the needs of the environment (processes, productivity and logistics with quality applied to maintenance).	Know- how
Applies control and management techniques in production operations. within current productivity and environmental quality standards.	Know how to be
Applies techniques for control and management of maintenance operations. within current productivity and quality standards.	Know how to be
Applies industrial safety standards. Supervises personnel. Introduces changes for the improvement of the quality of life.	Know how to be
Manages negotiation tools, conflict resolution and decision making decisions.	Willingness to Do
Competitive. Leader. With a clear sense of purpose.	Willingness to Do
Anticipates problems, consequences and outcomes. Accepts, introduces and promotes changes.	Power of Attorney

It is important to note, this association may be subject to any changes that the teacher may make the colors assigned to each competency are as follows. The colors assigned to each competency are pink for Saber Hacer, purple for Saber Estar, green for Querer Hacer, and brown for for the Power to Do.

As can be seen in the table above, each indicator has a related competency associated with it for the practical purposes of being able to relate them later when making the template. evaluative. Then, in order to better understand what each of these implies, in Table 4, a set of keywords associated with each competency is specified.

Table 4.
Keywords Associated to the Competencies

COMPETENCIES	KEYWORDS
Know-how	Skills and Abilities. Analysis and Synthesis Capacity.
Knowing how to be	Attitudes in accordance with the environment. Search for information. Personal intuition. Shared learning.
Want to do	Motivation. Support. Collaboration. Companionship.
Power to do	Personal capacity to perform tasks. Personal mastery. Independence and Effectiveness.

Once each of the competencies defined in the course syllabus has been listed, it is time to the techniques to be used for the evaluation of the content of each one of the defined topics. Taking into consideration that the course has six topics and that each one according to will have different techniques and instruments, it is necessary to define the techniques and instruments to be used and which are related according to what is shown in the Table 5. It is important to point out that some of these instruments may be supported by the use of the virtual classroom or other electronic mechanism, if specified by the teacher, this aspect can be very useful at the time of the evaluation.

Table 5.
Weighting of Instruments by Topic

N°	SUBJECT/CONTENT	PERCENTAGE TOPIC (%)	TECHNIQUE	INSTRUMENT	PERCENTAGE TECHNIQUE (%)
1	Concept and Model of Strategic Management.	10	Test	Theoretical Evaluation	100
2	The Mission and Vision of the Business.	10	Test	Teamwork	60
				Expoure	40
3	Sector Environment Analysis.	20	Test	Teamwork	100
4	Analysis of Resources and Capacities.	20	Test	Teamwork	40
				Expoure	40
				Theoretical Evaluation	20
5	Formulation of Strategies.	20	Test	Teamwork	60
				Exhibits	40
6	Implementation of Strategies.	20	Test	Teamwork	60
				Workshop	40
		100			

Each instrument has a specific weighting according to the competency and subject being evaluated, so each percentage will depend on its importance in the specific subject. All the competencies should be assessed in each of these, so the design of the final instrument will be based on the following will be in charge of the teacher and will contain each one of the indicated elements, trying to respect the weighting indicated and indicated automatically in the spreadsheet.

Tables 6 and 7 show each of the instruments selected for the evaluation and the competency that relates to it, as well as its weighting with the total. In order to to facilitate the visualization of the instrument, a color scheme is used, which can be found in the following table related to each competency.

When it is established as a work methodology in the educational environment under the scheme EBC, the teacher has to identify with what he/she transmits in class, as Ruiz expresses it (2012), indicates that the teacher must fully identify with what he/she transmits in class who should always be more committed to the teaching-learning process. This the student's chances of success are increased and the student learns meaningfully and achieve the objectives. CBE, therefore, creates a series of new learning and among which we can mention the following:

- Ability to apply knowledge and adapt to changes in their environment.
- Ability to communicate and transmit ideas.
- Innovation and creativity.
- Decision making.
- Teamwork, conflict resolution and leadership skills.
- Ethical and environmental commitment.

Table 6.
Content of the Competition

INSTRUMENTS OF EVALUATION	COMPETENCE TO BE ASSESSED				
Instrument	Knowing	Knowing How	Knowing Being	Wanting to Do	Being able to Do
Theoretical evaluation	Knowledge about the content specific to Administration Strategic.	Ability to identify indicators for the improvement of the production, the maintenance and quality applying concepts of Strategic Management. Mastered instruments and standards aimed at increase the quality, the safety and respect for environment. Acknowledges the needs of the environment business.	Clarity to develop and associate concepts of the Administration Strategic related to the production and maintenance. It takes into account the industrial safety and the importance of study of the regulations in force.	Anticipate problems and provides solutions, based on the following aspects theoretical. Solve problems and solutions conflicts raised in a manner expeditiously. Act always with the readiness to learn more. Value the teachings of other e incorporates changes positive in its own way of thinking.	Orderly, consistent in the answers. Self-employed and competitive. Motivated achievement-oriented, proactive and committed to analyze in depth the results.
Percentage	80	5	5	5	5
Teamwork	Knowledge about the content specific to Administration Strategic.	Ability to express group which improvements in maintenance, production and quality are can develop, as well as as well as the instruments and standards aimed at to increase the quality of life. He explains to the team the importance of using financial criteria and opportunity technicians business development and creation of companies. See examples.	Identifies the needs of the related environment with the processes productive. See what are the objectives of the organization and related to the interests of the community. Develops cases practical.	Knows how to give instructions to the work team, modeling behaviors and negotiating in the form of positive and effective. Manages techniques of resolution of conflicts. Tolerant, empathetic, flexible, values its colleagues in equipment. Influence positively on the environment.	Communicates and exposes effectively. Introduces changes to improve the quality of life. Motivated to achievement, proactive and committed. Kind regards to the comments and accepts and promotes changes.
Percentage	30	30	10	20	10

These aspects entail more work for the teacher in all aspects of the teaching process course, due to the fact that when didactic plans are designed using novel schemes, methodologies and guidelines for teaching, demonstrating and explaining the competencies in addition to those of the traditionally used and in addition to the knowledge of specific contents, implying by

The more time needed to develop the evaluation instruments, the more time it will take to develop the instruments concentration and management of resources, especially when implementing it for the first time. In the same In this way, it is more laborious to qualify each one of the competencies; also, it is more time-consuming to time and dedication when correcting and grading.

Table 7.
Content of the Competition

INSTRUMENTS OF EVALUATION	COMPETENCY TO BE EVALUATED IN THE SELECTED INSTRUMENT				
	Technique	Know	How to Know	Know How to be	Want to do
Workshop	Knowledge Workshop on the content specific to Administration Strategic.	Ability to improve the maintenance, the production and quality applying concepts of Strategic Management. Uses instruments and standards that increase the quality of the staff's lives. See in practice criteria financial and technical time to develop concepts. Elaborated examples.	Works on the basis of the recognition of the needs of the environment and its relationship with the production processes. It explains which are the objectives of the organization and unites them with the interests of the community. Develop case studies.	Gives instructions, models and negotiates effectively in activities group. Manage techniques resolution of conflicts. Tolerant, empathetic, flexible, values talent human.	The following is communicated indeed, it gives consistent answers. Introduces changes to improve the contributed by the group, through changes significant. Anticipate problems and provides answers appropriate.
Percentage	40	15	20	15	10
Exhibitions	Knowledge on the Content specific to Administration Strategic.	Ability to introduce improvements in maintenance, production and quality produce the Strategic Management. Explains the instruments and standards that can to increase success in the organizations. Establishes the importance of using financial criteria and technicians to determine business opportunities and business creation. Explains examples and related to what is being states.	Identifies the needs of the environment related to the production processes. It shows how these influence on society. Do you know which are the objectives of the organization and related to the interests of the community. Mention examples according to related content in their exhibitions.	Gives instructions, models and negotiates effectively, is orderly and consistent as long as exposes. Manage techniques resolution of conflicts. Tolerant, empathetic, flexible, values talent human. Of course in the purpose of the that it exhibits.	Communicates, exposes and introduces Indeed changes for the better quality of life to through its exhibitions. Self-employed, competitive, leader. Motivated to achieve, proactive and committed, produces foils clear and high quality.
Percentage	40	10	20	15	15

It should be noted, however, that as the teacher becomes accustomed to using if you use the schematic and use it repeatedly, the work will be facilitated, and in the long run the satisfaction that the student is going to graduate more qualified to face the vicissitudes, of a competitive

world of work, by fostering aptitudes, attitudes, skills and abilities such as the following mentioned by Arriola, Sánchez, Romero, Ortega, Rodríguez and Gastelú et al (2012):

Learning how to learn, teachers from the beginning offer the tools to help students learn how to learn research and find solutions to real engineering problems.

Reading and writing skills, the curricula contemplate not only the assessment to through partial exams, but also through exhibitions, workshops, interventions in the virtual classroom, and practical evaluations.

Communication, which establishes the need to be able to express oneself appropriately at the moment of championing activities and conveying their leadership by applying appropriate communication techniques.

Adaptability, assuming changes and dealing with them, solving problems and searching for innovative solutions by working on real cases.

Self-management and teamwork, demonstrating clarity in goals and positivism, which will be the results are obtained when the participant works with his or her peers.

This is the basis for the evaluation template, with which the teacher will be able to establish the grade reached by each participant. By way of example, Table 8 shows the development for the evaluation instrument teamwork, where the last line specifies the range of achievement of objectives notes.

Another very interesting aspect raised in the proposed model is the one related to the summary. The student will be able to use this evaluation form for the participant or performance report. Through it, the student will be able to recognize which are the achievements in each of the activities carried out and shown in the evaluation template. When working under a CBE scheme, the competencies should be related to the following If it is not 100%, identify the problems encountered, in order to that future evaluations may improve performance.

Table 8.
Evaluation Template. Teamwork Example

INSTRUMENTS OF EVALUATION		GENERAL EVALUATION TEMPLATE ACCORDING TO COMPETENCE				
Technique	COMPETENCE PERCENTAGE	Complies with the Objectives and Competencies Associated with the course (A)	Approaching Compliance with the Objectives and Competencies Associated with the course (B)	Complies with the Minimum Objectives and Competencies Associated with the course (C)	Complies with only Some Objectives and Competencies Associated with the course (D)	Does not meet the Objectives and Competencies Associated with the course (E)
	30	Resolves between 83% and 100% of the problems established	Resolves between 63% and 82% of the problems established theories.	Resolves between 46% and 62% of the problems established theories.	Resolves between 28% and 47% of the problems established theories.	Resolves 27% or less of the problems established theories
Teamwork	30	Always demonstrates ability to express group progress in the processes. Apply standards that improve the quality of people in a outstanding. Establish the importance of finances. Apply examples.	Almost always demonstrates ability to express group progress. Applies standards that help with quality. Establishes the importance of the finances. Apply examples.	Sometimes it expresses the need to look for progress. Not always applies rules that improve quality. Occasionally indicates the importance of finances. Exemplify on a regular basis.	It recognizes very little of the need for quality in organizations and its standards. No clearly understands the importance of the finances. Your examples before their peers are not well developed nor explained.	Does not recognize or understands the needs of the quality and finance in the organizations modern. It does not express the as they should demands are met of people. No knows and does not evaluate examples.
	10	Identify excellently needs of the environment related to processes. It has a clear vision of the objectives of the organizations and their relationship with the communities. Develops cases of the real life with great detail.	Generally identifies the needs of the environment associated with processes. It has a good vision of the objectives of the organizations and the communities. Develops and explains cases with good precision and enthusiasm.	Sometimes it does not identifies the needs of the environment associated with processes. It has a regular vision of the objectives organizational and communities. Develops and cases with regular accuracy	Almost always not identifies the needs of the related environment with the processes. It has a vague vision of the objectives of the organizations and the communities. Develops and explains cases with little precision and enthusiasm.	Never identifies the needs of the related environment with the processes. No has a vision of the objectives of the organizations and communities. No develops and explains real-life cases.
	20	Efficient in giving instructions, model the behavior of their peers. Resolves timely and promptly any drawback. It is tolerant, empathetic and flexible.	Good at giving instructions, helps to almost always model the conduct of their colleagues. Many sometimes solves problems. Tolerant, empathetic and flexible.	Poor efficiency in giving instructions, and model the behavior of its partners. No always solves the disadvantages. Tolerant, empathetic and flexible.	Does not know how to give instructions, no models the behavior of their peers. Resolves few disadvantages. Little tolerant of criticism, does not harmonize with the group.	It does not give instructions or is a role model. Source of problems. It is not tolerant and rejects criticism. No is suitable for working in groups.
	10	Brilliantly exposes and without a doubt the subject matter. Proposes strategies that exceed the objectives, related to the subject. Leader and committed to the it does.	It exposes leaving few doubts about the subject matter. Proposes strategies, related to the treated. It is almost always leader and committed with what it does.	Exhibits leaving some doubts on the subject treated. Sometimes proposes strategies related to the thematic. Not always is a leader and committed to the it does.	Exhibit poorly the subject matter. Never proposes strategies related to the issues. He is not a leader and the group does not follow or is confident in his work.	Does not state the subject treated. It does not propose strategies. See becomes a leader negative, the people reject it and seek new colleagues
	ACHIEVEMENT OF OBJECTIVES	17 – 20	13 – 16	10 – 12	6 – 9	0 – 5

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Table 9 below illustrates the results of the evaluation of a student, with the competences achieved (fictitious data)

Table 9.
Report of Notes.

INSTRUMENTS OF EVALUATION		GENERAL EVALUATION TEMPLATE ACCORDING TO COMPETENCE				
Technique	COMPETENCE PERCENTAGE	Complies with the Objectives and Competencies Associated with the course (A)	Approaching Compliance with the Objectives and Competencies Associated with the course (B)	Complies with the Minimum Objectives and Competencies Associated with the course ©	Complies with only Some Objectives and Competencies Associated with the course (D)	Does not meet the Objectives and Competencies Associated with the course (E)
		Teamwork	30	Resolves between 83% and 100% of the problems established.	Resolves between 63% and 82% of the problems established theories.	Resolves between 48% and 62% of the problems established theories.
30	Always demonstrates ability to express group progress in the processes. Apply standards that improve the quality of people in a outstanding. Establish the importance of finances. Apply examples.		Almost always demonstrates ability to express group progress. Applies standards that help with quality. Establishes the importance of the finances. Apply examples.	Sometimes it expresses the need to look for progress. Not always applies rules that improve quality. Occasionally indicates the importance of finances. Exemplify on a regular basis.	It recognizes very little of the need for quality in organizations and its standards. No clearly understands the importance of the finances. Your examples before their peers are not well developed nor explained.	Does not recognize or understands the needs of the quality and finance in the organizations modern. It does not express the as they should demands are met of people. No knows and does not evaluate examples.
10	Identify excellently needs of the environment related to processes. It has a clear vision of the objectives of the organizations and their relationship with the communities. Develops cases of the real life with great detail.		Generally identifies the needs of the environment associated with processes. It has a good vision of the objectives of the organizations and the communities. Develops and explains cases with good precision and enthusiasm.	Sometimes it does not identifies the needs of the environment associated with processes. It has a regular vision of the objectives organizational and communities. Develops and cases with regular accuracy.	Almost always not identifies the needs of the related environment with the processes. It has a vague vision of the objectives of the organizations and the communities. Develops and explains cases with little precision and enthusiasm.	Never identifies the needs of the related environment with the processes. No has a vision of the objectives of the organizations and communities. No develops and explains real-life cases.
20	Efficient in giving instructions, model the behavior of their peers. Resolves timely and promptly any drawback. It is tolerant, empathetic and flexible.		Good at giving instructions, helps to almost always model the conduct of their colleagues. Many sometimes solves problems. Tolerant, empathetic and flexible.	Poor efficiency in giving instructions, and model the behavior of its partners. No always solves the disadvantages. Tolerant, empathetic and flexible.	Does not know how to give instructions, no models the behavior of their peers. Resolves few disadvantages. Little tolerant of criticism, does not harmonize with the group.	It does not give instructions or is a role model. Source of problems. It is not tolerant and rejects criticism. No is suitable for working in groups.
10	Brilliantly exposes and without a doubt the subject matter. Proposes strategies that exceed the objectives, related to the subject. Leader and committed to the it does.		It exposes leaving few doubts about the subject matter. Proposes strategies, related to the treated. It is almost always leader and committed with what it does.	Exhibits leaving some doubts on the subject treated. Sometimes proposes strategies related to the thematic. Not always in a leader and committed to the it does.	Exhibit poorly the subject matter. Never proposes strategies related to the issues. He is not a leader and the group does not follow or is confident in his work.	Does not state the subject treated. It does not propose strategies. See becomes a leader negative, the people react it and seek new colleagues.
ACHIEVEMENT OF OBJECTIVES		17 – 20	13 – 16	10 – 12	6 – 9	0 – 5

This information sheet provides the teacher with an excellent overview of the performance of the subject and, in this way, to be able to emphasize it in future evaluations, especially in those competencies in which the group as a whole shows a higher level of problems. All this is possible with the use of the spreadsheet designed for this purpose.

As can be seen, the lower part shows the achievement of the objectives in the following areas the rating is both numerical and lettered.

Through the proposed evaluative model, establish the guidelines for a plan that will help you to the teacher the work to be done and to be able to easily parameterize the steps to be followed during the development of the course (subject), is its main objective. To achieve this, a

The following is a summary of the steps to follow in order to implement the the outline outlined in the Strategic Management course and which are based on Guillén's (2018) work:

Determine the percentage weights of the thematic content associated with the competency.

Know. Grouping the competency indicators defined in the program, according to the related competencies: Know How to Do, Know How to Be, Want to Do and Be Able to Do. It is each of these competencies by means of a template for each of these competencies colors.

Establish a table with the keywords related to each of the five key words. competencies, in order to facilitate subsequent grouping work.

Specify the evaluation instruments to be used in the course. These are may vary according to the contents, competencies and experiences of the teacher.

Next, establish which instrument(s) will be used in each of the following and then, establish the percentages that each of these will have in the theme respective.

Indicate which competencies will be developed with each of the instruments. This will the only exceptions are those related to Knowledge, since will depend on the subject where the instrument is established. On the it is important to place the percentages assigned to each of the five established competencies.

Design the evaluation template according to the competency. This is very important to the model is based on a detailed explanation of the different types of evaluative parameters according to the fulfillment of the objectives. This can come identified both numerically and alphabetically, which is very convenient.

The company's performance appraisals are a key factor in the world of work, where the competences demonstrated by the person are taken into account, generally are described by a letter.

Prepare the report card. The evaluation summary for the student, showing the relation of the competency achieved, which is extracted from the evaluation template, the achieved, both in numbers and in letters, and a ratio with respect to the rest of the course. In this way,

the student knows how he or she is doing with respect to and the teacher can identify which competencies are in need of further training more attention. Because it is elaborated in a spreadsheet, it can be sent by via e-mail or show it in the UCV virtual classroom.

Once these parameters have been set in the spreadsheet, the spreadsheet performs the following tasks the grade sheet for each participant is automatically generated. It is important to it should be noted that, when working with courses under the EBC scheme, it is not appropriate to manage enrollment of more than 40 students. In addition, the teacher will be required every semester to

The only complicated aspect of the system is to load the identification data of each one of them otherwise, the process is very simple because it is only necessary to fill out the following form successive sheets in each period and identify them, in the lower tab of the same.

As an additional recommendation, the course instructor must have a physical competency assessment at the time of applying each instrument, this in order to that, at the time of an activity, for example an exhibition, you can through the following table will guide you to enter the corresponding grade and then enter this data in the sheet the calculation program, which will be in charge of providing the results without any further complication.

Final Reflections

Due to the rapid adoption throughout the global education arena of the concept of Competency-Based Education (CBE) and, consequently, of the set of aspects of the related to it, such as: teaching methodologies, adoption of spaces and virtual, change of paradigms in the student - teacher relationship, development of examples and field visits and evaluative schemes, among others, the latter being the reason for the present research work, it is necessary to develop plans to address each of the areas of research.

These aspects in detail and serve as a basis for the implementation of courses, without leaving aspects to chance, unreliable and without a solid written (legal) basis.

For this reason, the design of the curricula cannot be limited to the mere description of the topics to be covered or competencies to be developed by the participant at the end of the course throughout the course, but should have programs where it is made clear, that techniques and instruments should be employed for each topic, as each has elements how the teacher should evaluate each one and finally, to specify in a specific way how the teacher should evaluate each one and finally, to specify in a the student, the grades achieved, highlighting where they are in the course, and

The company's failures are occurring, which competencies must be addressed with greater emphasis and the comparison with the rest of their peers, so that in this way, they will awaken their enthusiasm and desire to improve.

The latter must be permanently reinforced, since the world of work is highly competitive. competitive, the best are the ones that can reach the highest positions or achieve the success in the undertakings that are undertaken, so that awakening that spark of competitiveness is very important and the present research work, with the form of the delivery of qualifications contributes to achieving this objective.

Creating, developing, researching, opening new paths of teaching and research, not only for the are an easy task in the Venezuela of the 21st century, it is a hard work that very few undertake and this type of work not only contributes to the national scientific development, but also to the contribute to more researchers in the area of CBE to raise new perspectives in the field. and more people will be able to develop their work following this approach philosophy.

The research work shown and based in many respects on the one presented for publication by Guillén (2018), breaks new ground as it addresses other instruments, combining techniques and presents new challenges for teachers working in this field scope.

References

- Acosta, P., Esculpi, M., González, M., Guillén, A., Itriago, M., Najul, M., Retamozo, J., Sánchez, R., and Willis E. (2005). Process Engineering Career Creation Project Industrial. UCV. Caracas.
- Alcalá, A. (2008). Proposal of an Andragogic Learning Model for Participants of Older Adults in National Open Universities. [promotion work for to qualify for tenure]. National Open University.
- Argudín, Y. (2012). Competency-Based Education. Nociones y Antecedentes. Trillas. Mexico D.F. pp 14 - 23.
- Arriola, M., Sánchez, G., Romero, M., Ortega, R., Rodríguez, R., Gastelú, A. (2008). Development of competencies in the instructional process. Trillas. México D.F. pp 31-36.
- Barreto, P. (2003). Curriculum Theory and Practice. Fondo Editorial UPEL - FEDUPEL.
- Callejas, M. (2005) A new added value for companies. Social Responsibility Corporate. <http://www.sector3.net/portal1/nuevovalor/añadido.asp>. Retrieved from January 2020.
- Campos, A. (2009). Mixed Research Methods: Integration of Research. Qualitative and Quantitative Research. Magisterio Cooperative.
- Guillén, A (2018). [manuscript submitted for publication] Design of a model of evaluation under the EBC scheme of a course in the degree program of Mechanical Engineering Industrial Processes of FIUCV. Case: Maintenance Management. Universidad Central de Venezuela.

- Jimenez, S. (2014). (2014, June 18). Phenomenology and Hermeneutic Turn. Paper. San Joaquín de Turmero. UBA.
- López, J. and Valenti, P. (2000). Technological education in the XXI Century. Polivalencia N°8. Fundación Politécnica Magazine. Polytechnic University of Valencia. España.
- Martínez, M. (2005). Competency-based education: A methodology that is the aim is to narrow the existing gap between higher education and the educational and productive sectors. University of Carabobo. Valencia. https://juancarlos.webcindario.com/La_educacion_basada_en_competencias_Magda_Cejas_.pdf. Accessed October 2018.
- Márquez, M. (2015). Research Essays. Refereed Books and Journals Series. Volume 1 Number 3. DIEP - UBA.
- McClelland, D. (1973). (2015, September 28) Testing for competence rather than intelligence. American Psychologist. <http://www.apa.org/journals/amp.html>.
- Acosta, P., Medina, V., Peraza, R. (2005). Pensum Curso Administración Estratégica. Project submitted to the Ministry of Higher Education.
- Ruiz, M. (2012). Cómo evaluar el dominio de competencias. Trillas. Mexico D.F. pp 38 - 39.
- Sandín, M. (2003). Qualitative Research in Education. McGraw Hill Interamericana of Spain.
- Villegas, C. (2015). Transit from the Linear Conception to a Transcomplex Conception of the STS Studies. Memorias IV Jornadas de Investigación UBA 2015. Calameo.