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TÍTULO: Determinación de la prefactibilidad en la aplicación de una estrategia pedagógica para la formación de la competencia Emprender en la educación preuniversitaria como contribución a la formación integral del estudiante.

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RESUMEN: La exigencia de hacer viable una estrategia pedagógica, transita por determinar los parámetros de prefactibilidad y supone un examen preliminar de la estrategia y su contexto para determinar si es oportuna, pertinente y realizable. En la pedagogía son limitados los usos de instrumentos de cálculos que evalúen la prefactibilidad de aplicación de las estrategias pedagógicas, favoreciendo la espontaneidad y limitando su efectividad. La determinación de este indicador conforma valoraciones críticas que tributan al éxito de la ejecución; teniendo en cuenta estos elementos, los autores proponen la adaptación y desarrollo de un método matricial que materializa esta intención.

PALABRAS CLAVES: prefactibilidad, pertinencia, oportunidad, Matriz BAFI.

TITLE: Determination of prefeasibility in the application of the pedagogical strategy for the formation of the Entrepreneurship competence in senior high education as a contribution to the integral formation of the student.

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ABSTRACT: The requirement to make feasible a pedagogical strategy to determine prefeasibility parameters, supposes a preliminary examination of a strategy and its context to determine if it is timely, pertinent and feasible. In the pedagogy are limited the use of calculation tools that assess the prefeasibility of application of pedagogical strategies favoring spontaneity and limiting its effectiveness. The determination of this indicator conforms critical assessments that tax the success of the execution, taking into account these elements the authors propose the adaptation and development of a matrix method that materializes this intention.

KEY WORDS: prefeasibility, relevance, opportunity, BAFI Matrix.

INTRODUCTION.

Strategies cannot renounce their factual contextualization, relating it to relevance and opportunity. The first certifies the elementary criterion for the elaboration and development of a strategy, by establishing the degree of necessity and preponderance of the project and establishes the agreement and suitability for the environment in which it will be applied.

The opportunity represents the convenience of a context demonstrated in the concurrence of a space and an appropriate cyclotransitory-temporal to achieve a utility or to achieve the objectives, it is the dynamics expressed in terms that are propitious to execute an action.

Different authors define opportunity and relevance (David, 2011), (Sierra Figueredo, Pernas Gómez et al., 2009); they perform theoretical-conceptual approaches in the strategic framework (Teng and Tzeng 1994), (Leyva, Hechavarría et al., 2018) while the administrative sciences have made progress in the estimation of objectivity and strategy execution (Barrios 2011), (Burneo-Valarezo, Delgado Vítore et al., 2016).

In Pedagogy, the use of calculation tools is limited to assess the prefeasibility of application of pedagogical strategies, favoring spontaneity and limiting its effectiveness. The determination of this indicator shapes critical assessments that pay for the success of the execution, taking these elements into account. The authors propose the adaptation and development of the BAFI matrix method, (Fernández, Goyanes et al., 2009), with the purpose of determining prefeasibility based on the timeliness and relevance of the proposed actions.

This matrix method integrates the relationships between the different parameters and the weighting of the values reached by these indicators in the different quadrants, which allowed the authors to achieve greater precision in the calculation and determination of the strategic moment by evaluating the prefeasibility from the opportunity- relevance. The original methodology was transformed to adapt it, although its teleological algorithmic essence remained.

DEVELOPMENT.

In order to justify the possibility of applying this strategy, the determination of the potentialities and problems that resulted from the methodological triangulation was made based on the previous situational diagnosis of senior high education in "10 de Octubre" municipality; at the same time, the external elements and their influence in the application of this pedagogical tool for the formation of the Entrepreneurship competence of the learners.

The potentialities and problems resulting from the application of methodological triangulation, listed in the case of problems 1 to 9 and grouped with the derivatives of the instrumental dimension in a single problem, are used as integral elements of analysis. Planning, organization, execution and control as members of the same process, the resulting potentialities are listed from 1 to 5.

The appreciation of the environment is obtained from the examination of the strategic problémico scheme (Batista Hernández, Valcárcel Izquierdo et al., 2017), which places the following as external indicators facilitators in the application of this strategy:

- The social demand, characterized by requiring and demanding of students of senior high Education entrepreneurs.
- The updating of the Cuban Economic Model based on the Guidelines for the period 2016-2021 approved by the VII Party Congress and later in July, by the National Assembly of People's Power (ANPP).

The following are identified as conditioning obstacles:

- Lack of administrative legal regulations that justify the development of Entrepreneurship competence in students of senior high Education.
- No implementation of training by competition in the Cuban education system in general and senior high education.

The internal potentialities and the problems that affect the application of the strategy were obtained from the result of the methodological triangulation that took into account four dimensions that are identified in preuniversity education: Dimension, instrumental, cognitive, attitudinal and axiological, and the results obtained through the four instruments applied to characterize the current state of the development of the Entrepreneurship competence in the integral formation of students of senior high education, which is the identified variable (Hernández, Intriago et al., 2018).

In order to arrive at the inventory of problems, potentialities and external obstacles in the return to the variable, development of the Entrepreneurship competence in the integral formation of the students of senior high education, the following are used as a decision rule:

- If the item or question of the instrument involves a positive analysis between 80% and 100% of the measurements made, then the indicator is considered as a potentiality.
- If the subsection or question of the instrument involves a positive analysis between 50% and 79% of the measurements made; then, the indicator is considered to be in the process of development.
- If the item or question of the instrument involves a positive analysis in less than 50% of the measurements made, then the indicator is considered a problem.

From this analysis, the following are concluded as potentialities:

1. Good development of learning knowledge, skills and values in students.
2. Good use of tools and technologies for the management of information by students.
3. Good leadership development and decision making, from the teaching-learning process of students, despite not having cooperative strategy.
4. Good development of teamwork from the teaching-learning process of students, when they are allowed.
5. It is valued as good the optimism of the students before the study and the future in the continuity of studies, an important part in their integral formation.

Internal problems of senior high education from the analysis of its dimensions.

Instrumental dimension:

- Low planning, organization, execution and control of negotiation projects with students from the teaching-learning process.

Cognitive dimension:

- Poor interpretation and understanding of the social reality and the environment where students live and develop.
- Few opportunities to establish judgments and reasoning in the overall general culture from the knowledge, skills and values of the students.

Attitudinal dimension:

- Under the development of creativity from the teaching-learning process of students, which appeals to reproductive strategies of acquired knowledge, which diminishes their initiatives.
- Poor development of critical thinking, holistic vision, from the teaching-learning process of students.

Axiological dimension:

- Under development of resilience in the confrontation of academic problems by students, revealed in the turns of analysis of exams and in those of reflection and debate.
- Under development of the responsibility value before the teaching and extradocentes tasks.
- Poor development of the preponderance of social interest, equity and respect for differences by students working in groups within the class.
- Under development of environmental care value by students.

Table 1. BAFI matrix. Determination of the prefeasibility in the application of the pedagogical strategy for the formation of the Entrepreneurship competence.

	EXTERNAL FACILITATORS			Total	EST.	weighting	EXT.		Total	EST.	weighting	weighting of the area
	No.	1	2				1	2				
POTENTIALITIES	1	1	1	2,0	22,5	1,0	0,6	0,6	1,2	23,5	0,6	0,8
	2	1	0,9	1,9	21,3	1,0	0,5	0,5	1,0	19,6	0,5	0,7
	3	0,8	0,9	1,7	19,1	0,9	0,4	0,5	0,9	17,6	0,5	0,7
	4	0,8	0,8	1,6	18,0	0,8	0,6	0,6	1,2	23,5	0,6	0,7
	5	0,9	0,8	1,7	19,1	0,9	0,3	0,5	0,8	15,7	0,4	0,6
SubTotal		4,5	4,4	8,9	100,0	4,5	2,4	2,7	5,1	100,0	2,6	3,5
5	EST	50,6	49,4	100,0		MFO	47,1	52,9	100,0		MFA	MF
9	weighting	0,9	0,9	1,8		0,9	0,5	0,5	1,0		0,5	0,7
PROBLEMS	1	0,3	0,5	0,8	7,1	0,4	0,8	0,7	1,5	11,9	0,8	0,6
	2	0,7	0,6	1,3	11,6	0,7	0,8	0,8	1,6	12,7	0,8	0,7
	3	0,8	0,8	1,6	14,3	0,8	0,7	0,7	1,4	11,1	0,7	0,8
	4	0,8	0,7	1,5	13,4	0,8	0,8	0,7	1,5	11,9	0,8	0,8
	5	0,6	0,8	1,4	12,5	0,7	0,7	0,6	1,3	10,3	0,7	0,7
	6	0,5	0,5	1,0	8,9	0,5	0,5	0,6	1,1	8,7	0,6	0,5
	7	0,5	0,5	1,0	8,9	0,5	0,8	0,8	1,6	12,7	0,8	0,7
	8	0,7	0,7	1,4	12,5	0,7	0,7	0,7	1,4	11,1	0,7	0,7
	9	0,6	0,6	1,2	10,7	0,6	0,6	0,6	1,2	9,5	0,6	0,6
SubTotal		6	6	11,2	100,0	5,6	6,4	6,2	12,6	100,0	6,3	6,0
	EST	49,1	50,9	100,0		MDO	50,8	49,2	100,0		MDA	MD
	weighting	0,6	0,6	1,2		0,6	0,7	0,7	1,4		0,7	0,7
	weighting of the area	0,8	0,8	1,5	MO	0,8	0,8	0,6	0,0	MA	0,6	

Table 2. Evaluating scale by colors.

POWER ZONE
PROTECTION ZONE
BRAKE OR SELF - LOCKING ZONE
CRITICAL ZONE

Analysis of the results of the prefeasibility calculation matrix (relevance-opportunity).

To achieve greater objectivity in the evaluation of the experts on the correspondence of the fields, the evaluation criteria and the results, the rules of the diffuse compensatory logic were used, which bases its algorithm on the relation of the observed as a differential position, when taking randomized multivalent contextualized values from 0 to 1 and contrast it to determine the degree to which the condition exists and impacts positively or negatively.

For this reason, the 0 and the 1 are both associated to the certainty and the accuracy of what is affirmed or denied and the 0.5 to the maximum vagueness and uncertainty, while there are intermediate values that list the greater or minor with absolute extremes.

The evaluation determined by a set of values belonging to the Fuzzy Logic (Espín Andrade and Vanti 2005) is the following:

- 0 Absolutely no impact.
- 0.1 Almost Absolutely without impact.
- 0.2 Very little impact.
- 0.3 Little impact.
- 0.4 Weak impact.
- 0.5 Medium impact.
- 0.6 Moderate impact.
- 0.7 Good impact.
- 0.8 Fair impact.

- 0.9 High impact.
- 1 Very high impact.

As a result of the application of the Matrix of calculation of relevance-opportunity (Prefeasibility), it is obtained that the appropriation and good development of the learning of the knowledge, abilities and values in the students constitute element of greater incidence-weight, of the potentialities for the implementation of the strategy, with weighting of 1 that expresses the maximum possible indication to reach (of very high impact).

From the use of the facilitating elements and capacity to counteract the external obstacles that have a negative impact on the strategic implementation, it reaches the assessment of 0.6 in the relative weighting with the obstacles and 0.8 in the weighting of the area, considering it to be very effective.

Among the problems, they are located with greater relevance when relating to external elements: the few opportunities to establish judgments and reasoning in the overall general culture from the knowledge, skills and values of the students; and the low development of creativity from the teaching-learning process of students, which appeals to reproductive strategies of acquired knowledge, which diminishes their initiatives. These problems respond to the cognitive and attitudinal dimensions. With weights of 0.8, evaluated from their inability to take advantage of the facilitating elements, and with 0.8 and 0.7 from their interaction with the obstacles that reinforces the negative valuation values (Good impact and Fair impact).

From the analysis of the quadrants, it can be deduced that the ratio of potentialities and facilitating factors reaches a total average weight of 0.9 (high impact); so that, it exceeds the values of the relationship of potentialities with obstacles, 0.5, exceeds the ratio of problems with the facilitating factors that is 0.6 and the correlation of problems and obstacles that was 0.7.

The internal balance of the system (IB) is one of the most important information as a guide to determine the relevance and timeliness of the application of the strategy, because it reflects the objective and subjective internal conditions of senior high education to assume the process of transformation to apply the strategy. It is obtained with the average of the results of the

potentialities on the one hand and the problems on the other hand (respectively the average of the potentialities is reached, (A / p) and that of the problems, M / pr). Their relationship indicates the level of equilibrium between two types of variables (Brown and Duguid, 2017).

Internal Balance (IB) = (Average of the potentialities is reached, (Ap) + Average of the problems (Apr)) / 2.

$$\mathbf{IB= (Ap + Apr) / 2 \quad IB= (0.7 + 0.7) / 2.}$$

$$\mathbf{IB= 0.7}$$

This result points to the capacity of the potentials to take advantage of the external facilitators and to oppose the obstacles that reveal a value of 75% of the optimum, expression of an advantageous status for the development of the Entrepreneurship competence in senior high education.

External balance (EB) = the average of the external facilitators (Aex) - The average of the obstacles in the environment $(Aobt.)$.

$$\mathbf{EB= Aex-Aobt.}$$

$$\mathbf{EB= 0.8 - 0.6 = 0.2}$$

This indicator expresses that in the current conditions the facilitating premises of the implementation of the pedagogical strategy for the development of the Entrepreneurship competence in senior high education has a high prevalence, overcoming the obstacles without discarding the negative values observed, which constitutes a threat.

Opportunity and relevance of the strategy based on the balance between the external balance and the internal balance of the strategy that indicates a favorable outcome where the facilitating factors predominate in relation to environmental obstacles (0.2).

Strategic Equilibrium (SE) was calculated based on the results of internal and external balance sheets that provide the prefeasibility and relevance of the application of the strategy:

$$\mathbf{SE = (EB + IB) / 2.}$$

$$\mathbf{SE = (0.7+ 0.2) / 2 = 0.45}$$

Table 3. Graduality of the evaluation of colors.



From this analysis, from the BAFI methodology, which states that when the resulting values exceed 0 are considered strong values, it demonstrates the transformative need of the current status, a consequence that justifies the application of the pedagogical strategy for the development of the Entrepreneurship competence as contribution to the comprehensive education of the student of senior high Education.

CONCLUSIONS.

After examining and contrasting the results of the BAFI matrix, the authors arrive at the following conclusions:

1. That it is necessary to apply validation mechanisms that justify the feasibility of implementing pedagogical strategies as a guarantee of their effectiveness.
2. That the result obtained by the BAFI Matrix method demonstrates the viability of applying the strategy for the development of the Entrepreneurship competence as a contribution to the integral development of the student of senior high education in “10 de octubre” municipality, Havana, Cuba.
3. The appropriation and good development of the learning of knowledge, skills and values in the students of senior high education, constitutes the element of greater incidence-weight, of the potentialities for the implementation of the strategy for the development of the pedagogical Entrepreneurship competence.

4. Among the problems or weaknesses are located with greater relevance to relate to external elements: the few opportunities to establish judgments and reasoning in the overall culture from the knowledge, skills and values of students; and the low development of creativity from the teaching-learning process of students, which appeals to reproductive strategies of acquired knowledge, which diminishes their initiatives and creativity.

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