



Satisfaction Index for the use of Open Educational Resources in the discipline History of Cuba through the Iadov technique

Índice de Satisfacción por el uso de Recursos Educativos Abiertos en la disciplina Historia de Cuba a través de la técnica Iadov

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Abstract

The use of Open Educational Resources is a topic of international novelty that has gained strength as the technological development of society advances and Information and Communications Technologies are incorporated into the teaching-learning process of the different disciplines. In the History of Cuba discipline program for the Computer Science Engineering major, the need is oriented to develop learning activities where students use computer tools in their self-management of knowledge. In the History Board at the University of Informatics Sciences, an investigation to design a didactic strategy for the use of Open Educational Resources as a means of the teaching-learning process of the History of Cuba discipline was developed. As part of the validation, a questionnaire was applied to seventeen teachers to determine the individual and group satisfaction index achieved based on the Iadov technique.

Resumen

La utilización de los Recursos Educativos Abiertos es un tema de actualidad internacional en la medida que avanza el desarrollo tecnológico de la sociedad y se incorporan las Tecnologías de la Información y las Comunicaciones al proceso de enseñanza-aprendizaje de las diferentes disciplinas. En el Programa de la disciplina Historia de Cuba, para la carrera Ingeniería en Ciencias Informáticas, se orienta la necesidad desarrollar actividades de aprendizaje donde los estudiantes utilicen herramientas informáticas en su autogestión del conocimiento. En la Dirección de Historia, de la Universidad de las Ciencias Informáticas, se desarrolló una investigación que diseñó una estrategia didáctica para la utilización de los Recursos Educativos Abiertos como medio del proceso de enseñanza-aprendizaje de la disciplina Historia de Cuba. Como parte de la validación se aplicó un cuestionario a diecisiete profesores para determinar el índice de satisfacción individual y grupal alcanzado basado en la técnica de Iadov.

Keywords:

Computing; Open Educational Resources; Teaching aids; Iadov technique; History of Cuba

Palabras clave:

Informática; Recursos Educativos Abiertos; Medio de enseñanza; Técnica de Iadov; Historia de Cuba

INTRODUCTION

The accelerated advance of Information and Communications Technology (ICT) has influenced the development of society and conditioned didactics, especially in the problems related to the use of teaching aids in the teaching-learning process, being the object of constant review and reformulation in the pedagogical field. Cubero, et al. (1985) and González (2010), when focusing on university education, point out that the improvement of Higher Education would be impossible to achieve if among other aspects, a space is not dedicated to thoroughly studying the issue related to the teaching aids that intervene in the teaching-learning process, as well as the role that teachers are called to play in relation to their use, based on current training processes.

On January 2017, the Ministry of Higher Education (MES) presented the Base Document for the Design of the “E” Study Plan, which recognizes: “The computerization of Cuban society is causing transformations in all sectors of society, particularly in education” Rodríguez (2018). At the same time, the criterion of prioritizing the use of teaching aids is maintained, which must be expressed fundamentally in the renewal of pedagogical practices that imply reformulating the role of the teacher and developing learning models different from the traditional ones, considering that it renews the concept of the teacher as the main source of knowledge, since it ceases to be the only reference that the student has for access to knowledge, in the solution of learning tasks: as a teaching aid, as a work and communication tool and as a source of knowledge.

Based on the proposals of Ramírez-Montoya et al. (2024), in line with the priorities of sustainable development, the training of professionals must be inclusive and accessible, targeting vulnerable populations to close the digital divide.

Thus, the influence of technologies, as a support to the teaching-learning process, has contributed to the active appropriation of knowledge by students. In these areas, the use of Open Educational Resources (OER) stands out as teaching aids incorporated into the teaching-learning process. According to the Organization for Economic Cooperation and Development (OECD), (2008) “The purpose of using OER in education is clearly to improve learning, particularly a type of learning that enables the development of individual and social capacities in order to understand and act.”

OER are used by several disciplines, including History of Cuban, where they are assumed as aids of the teaching-learning process. Their use constituted a challenge for teachers considering the demands of implementing actions and procedures in a didactic strategy that is coherent, contextualized and integrated with the rest of the process components. The objective of this research is to determine the satisfaction index for the Didactic Strategy to use Open Educational Resources as aids in the teaching-learning process of the History of Cuba discipline, through the IADOV Technique in teachers of this discipline at the University of Informatics Sciences.

METHOD

The first manifestation of Open Educational Resources arose in early 2001, when the Massachusetts Institute of Technology (MIT) and the University of Utah created the Open Course Ware Consortium (OCW) program, a consortium of higher education institutions and associated organizations that share, in the form of OCW, free and open digital publications of educational materials, with the support of the William and Flora Hewlett Foundation. UNESCO (2012) organized the first world forum to evaluate the OCW. The term OER was created there. The research assumes the definition of OER by Atkins et al. (2007): They are teaching, learning and research materials in any context, belonging to the public domain, published under an open license that allows access, use, reformulation, reuse and redistribution by third parties with minimal or no restrictions. (Atkins et al., 2007)

The use OER as teaching aids in the teaching-learning process of the discipline History of Cuba recognizes the definition of Díaz-Pendaz (2019). This author considers a teaching aid from the oral word of the teacher to the textbook; that the teacher uses sources of historical knowledge that constitute teaching media; in addition, he defines: Teaching aids are those sources of historical knowledge that constitute the support of the methods used for the direction of learning and education (...). The definition of method supports is important to understand that no teaching aid is used outside of a methodology for its use. (Díaz-Pendaz, 2019, p.83)

The implementation of OER as a teaching tool in the discipline History of Cuba reveals better pedagogical practices: interaction with quality educational resources, reliable for the information they present and arouse greater interest in participation by students. These findings are in agreement with Bonilla et. al (2010), who indicates that: “when a teacher uses OER, a number of opportunities are opened to innovate and propose changes in their educational practice” (p.7).

Based on the above elements, the OER is adopted for the research as an aid in the teaching-learning process of the discipline History of Cuba; it configures a new relationship: teacher-student, based on the influence that these exert on the system: teaching-learning developer process; it preserves historical content, it is presented in a technological transmission support, through which the information that is symbolized in it is revealed by codes that mediate the relationship between the subject and the object of the activity.

Espinoza Castro et al. (2024) argue that in the current educational context, technologies have been consolidated as an essential complementary resource. It is essential to recognize that these tools are aids to improve teaching-learning processes, not an end in themselves. Their value lies in enhancing pedagogical strategies and facilitating the acquisition of knowledge, skills and competencies in students.

The OER are intended to support the actions of Cuban History teachers and students on their subject of knowledge, at different times in the process of appropriation of historical content with the purpose of fulfilling the stated objectives.

In the design of the proposed strategy, the conceptual axis made it possible to take a general concept to establish basic notions that are developed from the theoretical framework of the research. It becomes an axis precisely because the entire construction of empirical and theoretical knowledge that allowed the elaboration of the didactic strategy revolved around these assumptions. In this case, Dialectic-Materialist was declared as the basis for the development of all research and the Historical-Cultural approach as the general position that allowed an interpretation of a phenomenon as complex as psychic development, which has a considerable influence on educational practice.

The theory of this approach that is taken as a reference is concretized in the theoretical framework based on the theory of the activity that is implemented in a didactic strategy for the use of OER as an aid in the teaching-learning process of the History of Cuba discipline, through actions and operations that explain how to proceed to develop the activity, in system with the rest of the components of the teaching-learning process that are integrated into the developing didactics.

The conception of the proposed teaching strategy also recognizes, as part of its structuring, an operational axis from which the conceptual axis is expressed. This axis is the activity: use of OER as a means of the teaching-learning process of the History of Cuba discipline. It is an activity because it contains all the structural elements determined by the needs, motives, objectives, conditions and means to achieve it, as well as the actions and operations that are its functional components. Sequentially, these previously mentioned components have a

specific object content, which differentiates them from the components of other types of activity.

In the developed teaching strategy, this activity is organized in actions, subordinated to conscious ends that depend on the conditions in which it is developed, giving rise to operations, integrated into four main phases of the strategy, which indicate the different moments in which the actions and operations will take place: diagnosis, planning, implementation and control, considering that the latter acts transversally in the three remaining phases.

To determine the Group Satisfaction Index (GSI) of Cuban History teachers towards the teaching strategy for the use of OER as an aid in the teaching-learning in the subject, the VA Iadov technique was used. An anonymous questionnaire was applied, in this case the proposed scientific result was submitted to the consideration of 17 Cuban History teachers from the History Department at the UCI who receive methodological training in the Department and use the services of the university network.

These teachers were selected taking into account the experiences developed in the teaching-learning process of the discipline they direct, for their positive attitude towards the use of OER as teaching aids, their knowledge of the proposed teaching strategy and their methodological and technological training. These characteristics offered better conditions for their assessment.

RESULTS

The stated technique consists of the development and application of a questionnaire that basically includes five questions, three of which are closed and two are open, based on the criteria issued and relating them to the three closed questions that are arranged in an interleaved manner in the questionnaire as a data collection instrument, the questions corresponding to numbers four, six and nine being relationally convergent in the so-called Iadov logical table, in which values are subsequently assigned based on the answers given by the interviewed teachers.

The procedure to determine the satisfaction scale is to relate the response obtained to question number four, according to the criterion, which may be: YES, I DON'T KNOW, or NO, according to which the column in which the criterion is focused will be defined, and then associated with the response to question number six, where in a similar way it should be oriented by the column that corresponds to the expressed criterion, finally, the two previous responses are grouped with question nine, a criterion that corresponds to the rows on the left side of the table, being the response the number that belongs to the relationship intersection of the first two with the last response,

according to which the corresponding number is identified to correspond with the established satisfaction scale, which is shown below: (1) Clear satisfaction, (2) More satisfied than dissatisfied, (3) Not defined, (4) More dissatisfied than satisfied, (5) Clear dissatisfaction and (6) Contradictory

The survey, which contains closed questions that will be used for the analysis, is applied for the case study to a number of 17 Cuban History professors who belong to the History Department at the UCI. Figure 1

Figure 1. *Questionnaire corresponding to the Iadov technique (Source: own elaboration)*

Cuestionario correspondiente a la Técnica de Iadov.

Estimado profesor:

Lea atentamente las preguntas que a continuación relacionamos. Este cuestionario no se precisa que usted ponga su nombre (es anónimo). Los resultados obtenidos solo serán analizados con fines investigativos; por tal motivo, agradeceríamos su colaboración al responder honestamente lo que piensa, sobre lo que le preguntamos.

Muchas gracias

- 1) Caracterice, mediante una palabra la estrategia didáctica propuesta.
- 2) ¿Qué aspectos limitaron la aplicación de la estrategia didáctica?
- 3) ¿Qué aspectos la favorecieron?
- 4) ¿Está satisfecho con las posibilidades que le brinda la estrategia didáctica, como vía para utilizar los REA como medio del proceso de enseñanza-aprendizaje en la disciplina Historia de Cuba?
No ___ No sé ___ Si ___
- 7) ¿Cómo evalúa la estrategia didáctica concebida?
E ___ MB ___ B ___ R ___ M ___
- 8) ¿Considera que la estrategia didáctica utilizada contribuye al perfeccionamiento del proceso de enseñanza-aprendizaje en la disciplina Historia de Cuba?
Sí ___ No ___ ¿Por qué?
- 9) ¿Le gusta la forma en que se diseñó la estrategia didáctica propuesta?
 - a) Me gusta mucho ___
 - b) Me gusta más de lo que me disgusta ___
 - c) Me es indiferente ___
 - d) Me disgusta más de lo que me gusta ___
 - e) No me gusta ___
 - f) No puedo decir

The responses evaluation to three closed questions was interrelated to determine the level of satisfaction, using the so-called Iadov Logical Table. Table 1.

Table 1. *Iadov's Logical Table (Source: own elaboration)*

		P 4									Σ
		¿Está satisfecho con las posibilidades que le brinda la estrategia didáctica, como vía para utilizar los REA como medio del proceso de enseñanza-aprendizaje en la disciplina Historia de Cuba?									
		No	No sé			Sí					17
		(0)	(0)			(17)					
P 9	¿Le gusta la forma en que se diseñó la estrategia didáctica propuesta?	P 6									17
		Si pudiera elegir libremente la vía para determinar las acciones y las operaciones dirigidas a la utilización de los REA como medio del proceso de enseñanza-aprendizaje en la disciplina Historia de Cuba ¿elegiría una con las características similares a las que se ofrecen en la estrategia didáctica?									
		Sí	No sé	No	Sí	No sé	No	Sí	No sé	No	17
		(14)	(0)	(0)	(2)	(0)	(0)	(1)	(0)	(0)	
Me gusta mucho		1	2	6	2	2	6	6	6	6	13
		11	0	0	2	0	0	0	1	0	
Me gusta más de lo que me disgusta		2	2	3	2	3	3	6	3	6	3
		3	0	0	0	0	0	0	0	0	
Me es indiferente		3	3	3	3	3	3	3	3	3	0
		0	0	0	0	0	0	0	0	0	
Me disgusta más de lo que me gusta		6	3	6	3	4	4	3	4	4	1
		0	0	0	0	0	0	0	0	0	
No me gusta		6	6	6	6	4	4	6	4	5	0
		0	0	0	0	0	0	0	0	0	
No puedo decir		2	3	6	3	3	3	6	β	4	0
		0	0	0	0	0	0	0	0	0	

The individual results show clear satisfaction of 13 Cuban History teachers with the use of the teaching strategy, for 76.5%. From these results, the group satisfaction index is obtained, based on the following numerical scale that defines the different levels of satisfaction: The data are summarized in Table 2.

Table 2. Individual satisfaction of respondents (Source: own elaboration)

Scale	Meaning	Individual satisfaction	%
+ 1	Clear satisfaction	13 A	76.5
+ 0.5	More satisfied than dissatisfied	3 B	17.6
0	Undefined and contradictory	0 C	0
-1	More dissatisfied than satisfied	1 D	5.9
-0.5	Clear dissatisfaction	0 E	0
	Total	17 N	100

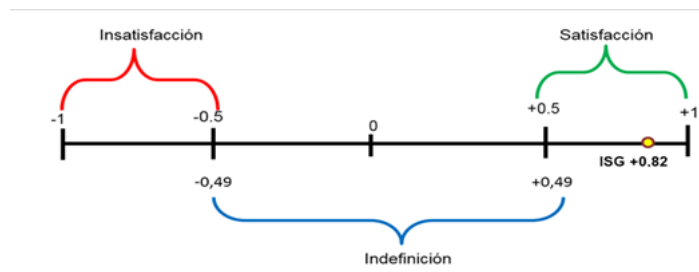
For the corresponding calculation of the group satisfaction index (ISG), the formula is applied: $ISG = \frac{(+1)A + B(+0.5) + C(0) + D(-0.5) + E(-1)}{N}$

This index basically reports on the range of values between +1 and -1. Values between -1 and -0.5 indicate dissatisfaction; those between -0.49 and +0.49 show contradiction, and those between +0.5 and +1 indicate satisfaction. In the formula, A, B, C, D, E are equivalent to the number of Cuban History teachers associated with the level of the satisfaction scale, and N is the total number of respondents, thus obtaining:

$$ISG = \frac{13(+1) + 3(+0.5) + 0(0) + 1(-0.5) + 0(-1)}{17} = +0.82$$

The data obtained (+0.82) is interpreted as a positive assessment by Cuban History teachers of the proposed teaching strategy, since the resulting value is in the range between 0.5 and 1, which represents an indicator of satisfaction. The value obtained is represented graphically in the following axis: Figure 2.

Figure 2. Location of the Group Satisfaction Index according to the rating scale (Source: own elaboration)



The open questions formulated in the aforementioned questionnaire confirmed the favorable tendency of Cuban History teachers towards the proposal; however, it was considered very important to express the main concerns, recommendations and general evaluations that they expressed about the teaching strategy: 82.4% evaluated it as necessary (criterion of relevance of the strategy). Another seven, for 41.1%, also qualified it as practical, important, innovative and contextualized. 94.1% indicated that it contributes to the improvement of the teaching-learning process in the subject History of Cuba, while 58.2%, 10 teachers, when expressing the aspects that limit the application of the teaching strategy, exposed difficulties related to the updating of the Learning Objects repository.

Cuban History teachers point out that the strategy guides the teaching to be followed in order to use OER in conjunction with the rest of the components of the teaching-learning process of the subject. 64.7% answered “a lot” and 29.4% said “quite a bit.” These results are contrasted with those obtained in the individual satisfaction index and with the answers derived from question seven, through which they had to evaluate the content of the conceived teaching strategy. In this case, the highest values correspond to the evaluative criteria of excellent, for 70.5%, and very good, for 23.5%.

CONCLUSIONS

The proposed technique was a useful instrument to determine the satisfaction with the Didactic Strategy for the use of Open Educational Resources as a means of the teaching-learning process of the discipline History of Cuba, in the Cuban History teachers at UCI.

Quantitatively, the applied procedure made it possible to obtain the ISG: zero point eighty-two (+0.82) and is interpreted as a positive assessment by Cuban History teachers for the proposed teaching strategy.

It is pertinent to consider the results of the open questions that affect the level of satisfaction in order to improve the teaching strategy based on the limitations expressed with the Learning Objects repository update. Research actions can also be developed that enable the development of OER by students with the guidance of teachers, to solve a problem arising from teaching practice and that affects satisfaction levels.

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