



Original article

Conceptual cartography of evaluation in Higher Education in the social formative model

Cartografía conceptual de la evaluación en la Educación Superior en el modelo socioformativo

Cartografia conceitual da avaliação no ensino superior no modelo socioformativo

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ABSTRACT

Educational processes require constant updating and innovation, evaluation in higher education requires analysis and feedback to adapt to current reality; constant efforts must be made to know, understand and improve it. The main objective is to offer a tool for approaching the notion of evaluation in the context of higher education, in the educational approach of socio formation; The purposes of this study are: to clarify the notion of socio formative evaluation, to identify elements that make up said concept, and to establish a proposal as an example of socio formative evaluation. The present study is in the literature review and supported by conceptual mapping; for which strategies such as search, organization and analysis of documents are applied. The results obtained expose the notion of evaluation from socio formation; categorization, characterization and differentiation of socio formative evaluation for a deeper understanding of it; socio formative evaluation division; they consider the socio-formative evaluation adequate to the Latin American context, its own characteristics and needs, considering the elements of the socio-formative evaluation identified: the individual facing the problems of his context, complex thinking, individual and cooperative skills, universal values , continuous improvement; Finally, aspects of linkage, methodology and exemplification of socio-formative evaluation processes for implementation are presented. Conceptualization and understanding of the evaluation processes that contributes in the search for quality training of the person.

Key Words: Higher Education; evaluation; training; person; socio formation.

RESUMEN

Los procesos educativos requieren de una constante actualización e innovación. La evaluación en la Educación Superior requiere análisis y retroalimentación para adaptarse a la realidad actual; se deben realizar constantes esfuerzos por conocer, comprender y mejorarla. El objetivo principal es ofrecer una herramienta para el acercamiento a la noción de evaluación en el contexto de la Educación Superior, en el enfoque educativo de la socioformación. Los propósitos del presente estudio son: aclarar la noción de evaluación socioformativa, identificar elementos que conforman dicho concepto, y establecer una propuesta a modo de ejemplo de evaluación socioformativa. El presente estudio está en la revisión bibliográfica y apoyado en la cartografía conceptual; para ello se aplican las estrategias como: búsqueda, organización y análisis de documentos. Los resultados obtenidos exponen la noción de la evaluación desde la socioformación; categorización, caracterización y diferenciación de la evaluación socioformativa para una comprensión más profunda de la misma; división de la evaluación socioformativa. Consideran a la evaluación socioformativa adecuada al contexto latinoamericano, características y necesidades propias, considerando los elementos de la evaluación socioformativa identificados: el individuo ante los problemas de su contexto, pensamiento complejo, destrezas individuales y cooperativas, valores universales, mejora continua. Finalmente, se presentan aspectos de vinculación, metodología y ejemplificación de los procesos de evaluación socioformativa para la puesta en práctica, conceptualización y comprensión de los procesos de evaluación que aportan en la búsqueda de una formación de la persona con calidad.

Palabras clave: Educación Superior; evaluación; formación; persona; socioformación.

RESUMO

Os processos educativos requerem constante atualização e inovação. A avaliação no Ensino Superior requer análise e feedback para se adaptar à realidade atual; esforços constantes devem ser feitos para conhecê-la, compreendê-la e melhorá-la. O objetivo principal é oferecer uma ferramenta para abordar a noção de avaliação no contexto do Ensino Superior, na abordagem educacional da socioformação. Os objetivos deste estudo são: esclarecer a noção de avaliação socioformativa, identificar elementos que compõem tal conceito e estabelecer uma proposta como exemplo de avaliação socioformativa. O presente estudo encontra-se na revisão de literatura e apoiado em mapeamento conceitual; Para isso, são aplicadas estratégias como: busca, organização e análise de documentos. Os resultados obtidos expõem a noção de avaliação a partir da socioformação; categorização, caracterização e diferenciação da avaliação socioformativa para uma compreensão mais profunda da mesma; divisão da avaliação socioformativa. Eles consideram a avaliação socioformativa adequada ao contexto latino-americano, suas próprias características e necessidades, considerando os elementos da avaliação socioformativa identificados: o indivíduo enfrentando os problemas de seu contexto, pensamento complexo, habilidades individuais e cooperativas, valores universais, melhoria contínua. Por fim, são apresentados aspectos de articulação, metodologia e exemplificação dos processos avaliativos socioformativos para a implementação, conceituação e compreensão dos processos avaliativos que contribuem na busca da formação de qualidade da pessoa.

Palavras-chave: Ensino Superior; avaliação; Treinamento; pessoa; socioformação.

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INTRODUCTION

Educational processes represent a topic of constant discussion and study due to the demands and needs of society, which constantly evolves and changes; Technological development also accompanies this evolution, which represents a continuous challenge to exercise educational practice more effectively and efficiently.

One of the processes that requires analysis and feedback is exactly the one corresponding to the evaluation that has some lags in the traditional approach and that, on occasions, is treated lightly. The constant efforts of the actors of the educational practice to improve the methodological processes with innovative strategies according to the profiles of the students in today's society cannot be denied; however, efforts to know, understand and improve the evaluation must also continue.

The present documentary study aims to offer a tool for approaching the notion of learning evaluation in the context of Higher Education, framed in the educational approach of socio formation, which is the fundamental axis of training at the Indo American Technological University. (UTI), and that has been considered for the development of investigative strengths, skills and entrepreneurial skills and the effective contribution to the needs of the community, as an option to approach the horizon of educational excellence, in search of an accreditation and internationalization of training processes (UTI, 2019).

The analysis of the evaluation processes is important, according to Arribas (2017); it is a subject that in many cases generates controversy, for showing different personal and institutional subjective perceptions. It is understood that the evaluation requires the greatest responsibility on the part of the educational actors (students, teachers,

authorities, family context, among others), since it allows consolidating the efforts so that the educational process is significant and, in turn, the members of the educational community are professionally trained to get closer to educational quality.

As an initial reflection, it is necessary to assimilate and apply the evaluation in an adequate way, so that the teacher is not the enemy of himself, by focusing his efforts only on the teaching-learning processes, leaving aside the continuous evaluation processes. or exercising evaluative processes that do not collaborate with the effective development of the proposed objectives. Educational actors must constantly review their actions in practice to advance new approaches, according to the demands of society and its constant evolution, considering contexts and differences, both individual and group, ultimately strengthening the quality of the intellectual development process.

The study is carried out within the framework of the socio-formative model that has emerged in Ibero-America, based on socio-constructivism or social constructivism, with the contribution of social epistemology and complexity, to seek a close relationship between reality and science, being a feature that identifies against different cognitive activities (Morín, 2004). For Hernandez *et al.* (2015) and Quiriz-Badillo and Tobón-Tobón (2019), socio formation is consistent with the educational and social reality of the Latin American region in the education of the individual; In addition, it projects it to be an entity that contributes to the resolution of problems and the collaborative integration of society.

The main objective of this study is to offer a tool for approaching the notion of evaluation in the context of Higher Education, with an educational approach of socio formation; In addition, purposes for the work are proposed: clarify the notion of socio

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formative evaluation, identify elements that make up said concept and are articulated with teaching performance, and establish a proposal as an example of socio formative evaluation.

MATERIALS AND METHODS

The present study is of a documentary type, since it is based on the bibliographical review, supported by the elaboration of a conceptual cartography to achieve an efficient management of the results and the clear construction of the studied concept, based on eight minimum axes of analysis (Tobón -Tobón, 2013). The strategies suggested by Pinto and Galvéz (1996), cited by Hernández-Mosquera *et al.* (2016), such as the search, organization and analysis of documents, which allow an adequate approach to understanding the subject. The Google Scholar tool has also been used for this purpose, considering articles from repositories such as Redalyc and Scielo, as well as those corresponding to Universities and Government entities.

For the application of conceptual mapping, a deep analysis of the concept studied is carried out, relating previous knowledge with new knowledge, thanks to the theoretical review of updated information on the subject (Tobón-Tobón, 2013). The axes that guide the conceptual mapping analysis are described in Table 1.

Table 1- Minimum axes of the conceptual cartography

AXES	QUESTIONS
Axis 1. Notion	What is the key concept, etymology and origin?
Axis 2. Categorization	Within what larger process is the concept?
Axis 3. Characterization	What are the essential characteristics of the concept? What elements distinguish each of these characteristics?
Axis 4. Differentiation	From what other close concepts that are in the same category does the concept differ?
Axis 5. Division	What are the classes or types of the concept? What are the distinctive elements of each of these classes?
Axis 6. Link	What disciplines, approaches and theories is the concept related to?
Axis 7. Methodology	What are the methodological elements involved in approaching the concept?
Axis 8. Exemplification	What could be an example of the central concept?

Source: Tobón-Tobón (2013)

RESULTS

Notion of socioformative evaluation

The concept of evaluation as an action of evaluating comes from the French *value*: action and effect of evaluating, understood as 'determining the value of something' (Castro and Benito-Martínez, 2014). The evaluation can be understood in some ways, according to the objectives, needs or purposes with which it is planned, however, it is convenient to establish a central idea as a starting point; evaluation is conceived as a measurement carried out to control the fulfillment of a certain established goal, an accountability (Mora, 2004).

From a general perspective, the act of evaluating can be understood as "estimating,

appreciating, calculating the value of something" (Espinoza-Freire, 2017, p. 91), which brings us closer to the idea of valuing something that is compared with a previously established measure. By unifying this idea with learning, it is difficult to measure knowledge with a previous standard; This is where the complexity of evaluating learning is understood.

In the historical development of the concept, the definition proposed by Gairín, Garcia, Gisbert and Cela (2008) is proposed, cited in Arribas (2017, p. 383): "the process of collecting, analyzing and interpreting results in order to assess them and that entails decision-making"; with the same conception of evaluation is based on the results. This conception has evolved widely to be considered a process that must be planned and carried out continuously.

The idea of evaluation is analyzed from socioformation, as a systematic and planned process, which considers the student's previous knowledge and seeks feedback and improvement of their learning, through the accompaniment of the teacher, who exposes in detail the instruments that will be applied. in their evaluation, such as checklists, portfolios and socioformative rubrics.

The conception of the idea of socio-formative evaluation evolves until it is understood as a process of vital importance, which not only measures results in terms of learning, but also aims to train people capable of solving problems in their context, managing the necessary skills and abilities in the knowledge society, and performing self-assessment, co-assessment and hereo-assessment in an educational context supported by effective collaborative work (Hernández-Mosquera *et al.*, 2016). The socioformative evaluation seeks the development and improvement of the abilities, skills and abilities of the individual to function in and for society, through the identification of problems of the context to

solve them collaboratively (Cruz-Vega, 2019).

In the context of the COVID-19 pandemic, according to Casanova (2020) cited in Hernández (2020), opportunities have arisen for its application; thus, socioformation has been applied in virtual platforms that allow the communication of educational actors.

Categorization

Assimilating the evaluation in the current context, reference is made to the socioformative evaluation, which adjusts to the demands of Latin American society and the educational model of the UTI (UTI, 2019).

This model is part of socioformation, which consists, as detailed by Tobón-Tobón (2017), of:

[...] a training, community, didactic and evaluative approach focused on people, teams and organizations learning to solve problems to develop talent considering the social context based on the ethical project of life, entrepreneurship, collaborative work, thought complex, the co-creation of knowledge and metacognition (p. 18).

The socioformation approach is contextualized in the Latin American reality, representing a model of the region, which considers the characteristics and needs of the region, its socioeconomic levels and its struggle for development in all fields, as well as its environmental setting; this reveals a strength in this approach, since it is aligned with the evolution of the region and is not imported from other realities (Tobón-Tobón, 2017).

Álvarez-Gil (2021) also highlights the participation of the socio-formative approach in the knowledge society, taking aside the reforms and different evolutionary and organizational processes in Latin America to train individuals who identify and solve context problems.

Characterization

Berlanga-Ramírez and Juárez-Hernández (2020) indicate that socioformative evaluation considers two very important aspects that characterize it before traditional evaluation: feedback and meta-evaluation. To better understand the idea of these aforementioned aspects, Tobón-Tobón (2013) and Tobón-Tobón (2017) contribute, referring to feedback as the assessment of the abilities that students demonstrate in their learning process, until reaching the resolution of context problems; and, to meta-evaluation, as the metacognitive reflection of the evaluation process that will be applied.

The evaluation in the socioformative model points to the integral development of people; in it, the tasks and various activities are not developed with a summative intention, although it is true that they collaborate in the registration of progress through numerical information, it is not the final objective, but the cognitive, metacognitive and socio-affective development of the student, relating closely to education with socio-age and with the person (Rodríguez-Peralta and Aniceto-Vargas, 2019).

In order to achieve a better understanding of evaluation from socioformation, its own characteristics are presented below, which allow it to be identified and at the same time adjust educational practice towards the proposed approach. Figure 1 shows the main characteristics with the elements that distinguish each one.



Fig. 1- Main characteristics of the socioformative evaluation

Adapted from Tobón-Tobón (2017)

Differences

According to Tobón-Tobón (2017), a differentiation can be established between socioformative evaluation and two evaluations that are considered close, such as behavioral evaluation and constructivist evaluation.

The same author characterizes conceptual evaluation as follows:

- Focused on behavior.
- Feedback positive results.
- Highlight mistakes made.
- It maintains a system of rewards and punishments.
- Determine a role model to achieve.

The characteristics of the constructivist evaluation indicated by Ausubel (1980) and Novak and Gowin (1988) are considered:

- Self-assessment of knowledge by students.
- Review of previous knowledge.
- The interests of the student are considered.

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- Meaning is sought in the development of knowledge.

- Students help improve their assessment.

Once the characteristics have been identified, the differentiation between them can be established, with the aim of pointing out the strengths and identifying the specific features of each one; detailed below in Table 2.

Table 2- Socioformative evaluation, behavioral evaluation and constructivist evaluation.

APPEARANCE	BEHAVIORAL ASSESSMENT	CONSTRUCTIVIST EVALUATION	SOCIOFORMATIVE EVALUATION
OBJECT	It is reviewed from different aspects, student behavior.	Knowledge: knowing how to be, knowing how to do, knowing how to know, knowing how to act.	The response to context problems is evaluated with the application of complex thinking.
FINISH	Evaluate the achievement of objectives.	Evaluate the development of knowledge.	Develop skills to solve context problems, ethical life project and continuous improvement.
METHODOLOGY	Behavior feedback. Rewards and punishments.	Review of previous knowledge. Review of student interests. Self-construction of knowledge.	Identification and response to context problems. Self and co-evaluation. Continuously improve. Effective collaborative work. Product communication.
ROLE OF THE TEACHER	Planner and executor of the evaluation.	Guide, companion, mediator of the process.	Accompany and support in the process of obtaining skills and abilities.
BASIC EPISTEMOLOGY	Positivism.	constructivism.	Complex thinking.

Adapted from Tobón-Tobón (2017)

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<https://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/2751>

Division-classes of socio formative evaluation

The socio formative evaluation is divided into:

- Progressive and permanent evaluation.
- Diagnostic evaluation.
- Formative evaluation.
- Summative evaluation.
- Assessment for accreditation and certification.

In socio formation, each class or type of evaluation described has a training approach related to comprehensive assessment, continuous improvement and the development of human talent. Therefore, in socio formation, formative evaluation is not a type of evaluation, but the essence of all evaluation. The formative evaluation seeks that the best students advance continuously and achieve excellence, based on the feedback of the achievements and the aspects that must be improved based on the levels of achievement from pre-formal to strategic (UTI, 2018).

Linkage of socio formative evaluation

Socio formative evaluation is based on complex thought, which is its epistemological basis. Complex thought is the basis of socio formation and refers to articulating ideas, perspectives or knowledge to understand phenomena in an integral way and act, consequently, with greater relevance and flexibility in the face of them. It is, therefore, to think and act considering that the facts of the world have connections, which contributes to overcoming the fragmentation and super-specialization of classical science. In socio-formative research, the instrument that makes the articulation of knowledge visible is the integrative knowledge project (CACES, 2020), which involves an ethical project of life, problem solving, collaborative

work, co-creation of knowledge and Meta cognition.

The objective of the Integrating Knowledge Project (PIS) is to foster in students and teachers an investigative spirit, which starts from the experience provided by carrying out collaborative work, evidencing the integration of knowledge related to each training project studied (Level -Cornejo *et al.*, 2019). Within complex thinking is critical analysis, systemic analysis and creativity (Tobón-Tobón, 2017).

Socio formative evaluation methodology

The author Reyes (2020) cites the contributions of Tobón-Tobón (2017), in which six basic concrete axes are established that must be planned for the implementation of online socio-formative evaluation: learning outcomes or understood as expected learning; problem of context and product to elaborate; evaluation instruments; assessment of the process through self-assessment, co-assessment and hetero-assessment; opportunities for improvement through feedback; and socialization of the learning achieved.

- Title. It is suggestive and understands the problem of the context and the product.
- Expected learning. It corresponds to the planned learning outcomes.
- Context and product problem. The context problem is a situation of need around the reality of student learning. The product is learning and constitutes a result of action against the problems of the real context.
- Instruments. They are specific critical and systemic analysis tools that support people's performance by improving learning products.
- Evaluation activities. They are collaborative actions that allow assessing the problem, the product and show the expected learning.

- Feedback. It provides feedback information about the achievements to improve from the applied instrument.
- Continuous improvement. Accompaniment of improvement to the product based on the expected domain level. Continuous improvement is achieved with continuous feedback.
- Socialization. Share the learning achieved in the process and obtain the learning product. This dialogue of knowledge is carried out among peers, in the family, community and society in general with the purpose of contributing to the improvement of living conditions (Tobón-Tobón, 2017, p. 37).

Exemplification

Example of socio formative evaluation

Next, an example of socio formative evaluation planning is described, based on the methodology described above.

Learning assessment training project

Title. The evaluation of learning in real contexts

Expected learning. Plan the evaluation from the purposes, procedures, instruments and processes of evaluation of learning in the classroom.

Context problem. In the classroom, student self-assessment and co-assessment are not reinforced.

Product. Socio formative evaluation plan. This product presents a diagnostic analysis, noting the low quality of the evaluations, and based on the diagnosis and the proposed objectives, actions are designed for a comprehensive evaluation, considering the

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types of internal evaluation: self-evaluation, hetero-evaluation, and co-evaluation.

Instrument. Analytical rubric to assess qualitatively and quantitatively the design of the socio formative evaluation plan.

The rubric contains the following indicators:

- Analysis of the context problem.
- Proposed resolution of the problem rose.
- Use of technology.
- Ethical life project, in terms of axiological value in solving the central problem.
- Application of APA standards in its latest edition.
- Semantic and syntactic structure of academic texts in the content of the report.
- The proficiency levels used for this rubric are:

- Deficient (pre formal)

- Regular (responsive)

- good (resolvable)

- Very good (autonomous)

- Excellent (strategic)

Evaluation activities. The proposed activities are:

1. Analysis of prior knowledge regarding the design of the evaluation plan.

Activities:

- Design the evaluation plan based on the situational diagnosis.
- Self-assess the case based on an example provided by the teacher.

2. Understanding of the instructions for preparing the evaluation plan.

Activities:

- Ask students to read the instructions aloud.
- Ask, among all, critical questions about the instructions.
- Improve the instructions from the exposed contributions.
- Review an example of socio formative evaluation planning developed by other authors and understands its structure.

3. Analysis and understanding of the rubric to self-assess and co-assess the assessment plan.

Activities:

- Read aloud the instructions, prompts, and rubric descriptors.
- Ask and answer questions around each indicator and its descriptors to understand and improve them.
- Do a self-assessment and co-assessment essay with the rubric, applying it to the assessment of a formal letter in a simulated way.
- Look for improvements to the rubric based on the critical contributions of the students.
- Make a simulated test of evaluation of a letter with the agreed rubric.

4. Preparation of the evaluation plan to improve student performance.

Activities:

- Search for the necessary information to prepare the evaluation plan.
- Investigate why self-assessment has not been strengthened, co-assessment in the continuous improvement process.

- Analyze experiences on socio-formative evaluation in the region and propose an answer or solution to the problem.

5. Self-assessment of the assessment plan by each student.

Activities:

- Apply the rubric in the self-assessment of the report.
- Identify the achievements and aspects to improve.

6. Co-evaluation of the formal letter between peers.

Activities:

- Advise students on how to conduct peer assessment.
- Seek that student evaluate each other to improve the evaluation plan through mutual support.

Feedback. The evaluation plan is evaluated and achievements and aspects to improve are formulated. This information enhances the student's performance to achieve the mastery level planned in the assessment plan.

Continuous improvement. Students must improve the final learning product based on the observations of their peers, family and community. The student has opportunities to improve the product.

Socialization. The socio-formative evaluation plan product is shared among peers, the family and society in general. The group of students can select an evaluation plan and propose to the institution its possible application throughout the educational community.

DISCUSSION

In educational processes, the idea of evaluation provided by Gairín *et al.* (2008), focused on the review of the final results, subtracting the importance of the formative evaluation in the process. This is one of the reasons why there are deficiencies in the evaluation process, carried out to measure what the students have achieved and *compare* with a previously established standard; On the other hand, it is important to consider what Espinoza-Freire (2017) stated, since, despite the fact that his conception of evaluation suggests quantification, he expresses that what the student has done should be valued. Given all this, socio-training collaborates in the conception of a broader idea that is not only focused on the result, but also establishes follow-up, during the process, in order to achieve comprehensive training, correcting the development of skills and not only of concepts; finally, the socioformative evaluation guides the identification of solutions to context problems, so that the objective is not a qualification but personal and social development (Hernández-Mosquera *et al.*, 2016).

Educational evaluation in a global context has been characterized by establishing standards and levels of development in people, however, it must be understood that the same needs and opportunities for growth will not necessarily be presented in different cultures; The categorization of socio-formative evaluation as *Latin American* is an essential contribution to the reality that develops, since it considers the characteristics and problems of the context, making it conducive to the formation of people who learn with and for their community (Tobón-Tobón, 2017).

In the socio formative evaluation, according to Tobón-Tobón (2017), the aspects that support constructivism are also considered, and they are evaluated in the process

considering contributions from Ausubel (1980) and Novak and Gowin (1988), such as self-evaluation, previous knowledge, the interests and needs of the student, the contribution of the student in the evaluation process; all of them important elements in the socio formative process and in its evaluation.

The contributions presented in the results and highlighted in the discussion guide this work towards the following conclusions.

An adequate conceptualization, understanding and application of the evaluation processes are extremely important for the continuous improvement of the person's training; educational actors must assume the true responsibility that implies being factors that change lives. The educational practice has been developed together with a complex and, at times, controversial evaluation process, which invites to systematize it and carry it out in an integral way so that it supports the progress of human beings, and that little by little the idea of evaluate only to qualify.

An essential element that socio formation presents for the evaluation process is feedback, which is sometimes overlooked or underestimated by the teacher. This process supports the improvement of both the student and the teacher, and its beginning corresponds to the understanding of feedback to solve the needs in teaching and learning; not feedback of the qualification, but a process that seeks to correct deficiencies or specific needs that arise in the process, which commits to carry out constant evaluation processes, not only of the result, but also of the day to day of the educational process. It is therefore necessary to establish clear guidelines so that the evaluation accompanies the process without being stigmatizing, so that it does not become a sentence but rather a fundamental step in training.

The socio formative evaluation is appropriate to the Latin American context, since it considers the characteristics and needs of the region; taking into account the reality of the context closest to people is convenient to improve the educational impact and the link with society. The elements of socio formation applied in the evaluation collaborate in the integral development of human beings who will be trained with skills and tools corresponding to the needs of their context, with an entrepreneurial spirit, who apply social values and who collaborate in the preservation of the environment in a collaborative.

From the analysis of the elements of the socio formative evaluation, it can be assessed that it verifies the way in which the individual responds to the problems of their context, applying complex thinking, putting into practice individual and cooperative skills, applying universal values, and with a commitment to continuous improvement for training according to community needs. The socio formative model proposes education for community action, with the identification and solution of nearby and impact problems.

Given the results presented and analyzed in this article, it is necessary to deepen the study of the elements of socio formation, seeking a systematization of processes in the classroom, so that they become real in practice, from the relationships between teachers; Therefore, the authors propose to continue in the line of investigation of the evaluation that constantly requires study, even more so when it is related to complex thinking and the different elements of the socio formative model.

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Conflict of interests

The authors declare no conflict of interest.

Authors contribution

All authors managed the information, reviewed the writing of the manuscript and approved the version finally submitted.



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