

Reference:

Minga-Vallejo, R. E., Ramírez-Montoya, M. S. & Rodríguez-Conde, M. J. (2021). Methods for the evaluation of social learning (2017-2021): systematic literature review. In *Proceedings of the 9th International Conference on Technological Ecosystems for Enhancing Multiculturality* (TEEM 2021). University of Barcelona. Spain.

## Methods for the evaluation of social learning (2017-2021): systematic literature review

Methods for the evaluation of social learning (2017-2021)

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Providing learning opportunities, based on social interaction and shared knowledge in the pursuit of a common goal, is a transcendental aspect in the field of training. In this sense, in contemporary education, the analysis of social learning becomes relevant and, consequently, it is necessary to identify a strategy to show how its evaluation is being carried out. Hence, the purpose of this article was to identify the organizational methods that have been used for the evaluation of social learning. For this purpose, a systematic review was conducted based on sixty studies, located between 2017 and 2021, by searching the Scopus and WoS databases with the keywords: methods, evaluation and social learning. Three major themes were defined to establish seven research questions that guided the search for information: characteristics of the studies, methodological design and findings. The results show that the greatest scientific production on the subject is found in the United States; in addition, participatory methods and peer support are essential to strengthen social interaction; furthermore, greater innovation is identified, in terms of new knowledge and areas of opportunity are detected for research on methods involving new processes and new services for the evaluation of social learning; there is greater evidence of this evaluation in the educational context related to higher education and in the social context directed towards professional training; with respect to the organizational methods of evaluation, these are focused on shared experiences through networks, co-creation and shared research; finally, opportunities for future research are evident in the analysis of methods involving social capital and peer education.

**CCS CONCEPTS** •Social and professional topics•Social and professional topics~Professional topics•Social and professional topics~Professional topics~Computing education•Social and professional topics~Professional topics~Computing education~Student assessment

**Additional Keywords and Phrases:** Social learning, Evaluation, Social interaction, Higher education, Educational innovation.

**ACM Reference Format:**

Ruth-Elizabeth Minga-Vallejo, María-Soledad Ramírez-Montoya, and María-José Rodríguez-Conde. 2021. Methods for the evaluation of social learning (2017-2021): Systematic Literature Review. In *Proceedings of the 9th International Conference on Technological Ecosystems for Enhancing Multiculturality* (TEEM'2021) (Salamanca, Spain, October 27-29, 2021). ACM, New York, NY, USA, 9 pages.

## 1 INTRODUCTION

Educational processes for design, teaching, learning and evaluation find great support for their reinvention in the analysis of social learning experiences. As the development of online networks expands the collaboration of learning between different disciplines, countries and people, it is necessary to determine how the process of these

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collaborations is carried out within the framework of this social dynamic [1]; the participant must be active, collaborative and have a great interest in sharing knowledge [2]; therefore, the evaluation processes must seek the strategic learning of the participants [3]. The exploration of dynamics in interacting groups is important to enhance social learning and the joint construction of knowledge.

Interaction is an essential aspect to reinforce social learning processes. Dynamic interaction in communities or networks allows reinforcing social learning to build a shared understanding and the development of a common language, through which knowledge is shared and used that is built collaboratively, with the support of dialogue and social interaction [4, 5], in addition to interpersonal closeness and peer tutoring [6]; Also, by combining the analysis of interaction within social networks, knowledge construction is understood as a social process of reciprocal influence, where people are collaboratively involved in learning [7]. Interaction facilitates communication, generating potential opportunities for the construction of shared learning.

Participatory approaches can facilitate relevant dialogue in terms of social learning. From a participatory paradigm, communication, shared meanings and joint attention play a transcendent role in learning [8]; emphasizing interaction processes from the collective nature of the effort helps to understand the co-production of knowledge [9]; there are also challenges in the development of tools and resources for a sustainable evaluation, coherent with pedagogical principles at the service of the quality of learning and the educational process [10, 11, 12]. A participatory practice that favors opportunities for the joint construction of knowledge allows better connections among participants, which favors the social dimension of learning.

In a formative environment, it becomes necessary to analyze the social importance of learning. The incorporation of interaction and communication strategies makes it interesting to evaluate how students learn and collaborate within that learning space [13] as a result of the interaction that arises in the student's social contexts [14]; Therefore, to evaluate social learning in practice it is helpful to define a framework of dimensions and indicators consistent with the learning objectives in order to make the adjustments required by the group and to improve the social learning processes [15]; automated procedures for dialogue analysis [16] or discourse analytics [17] are used for the analysis of interaction in online environments. The evaluation of social learning experiences becomes a very valuable element for decision making in the training process.

On the other hand, in Scopus and WoS there are 11 review studies related to the topic, 7 articles are in Scopus and 3 in WoS, these address evaluation and social learning. In addition, they present a framework of dimensions and indicators on: virtual community of practice, social capital, participation, peer influences and supported decision making. Students are increasingly interested in interacting and working collaboratively within co-creation contexts [18]. Analysis of these domains can improve organizational frameworks for assessment as social learning develops. The objective of this study is to analyze through systematic literature review, between 2017-2020, the researches that have conducted an evaluation of social learning and to identify the methods being used for this evaluation. The differentiating value of this article is to provide information to researchers interested in the subject, based on the analysis of the studies reviewed and the detection of knowledge gaps, which may lead to new research proposals and decision making to enrich social learning experiences and consequently improve training processes. The differentiating value of this article is to provide information on the subject, based on the analysis of the studies reviewed and on the detection of knowledge gaps, which may lead to new research proposals and decision making to enrich social learning experiences that can improve training processes.

From a theoretical perspective, the main contribution of this study was to investigate organizational methods for the assessment of social learning, which broadens its understanding. On a practical level, this paper provides a detailed description of how the assessment of social learning can be implemented in a formative context and the positive effect this has on students. In addition, it is important to consider the limitations of this study; this research explored the methods for the organization of social learning assessment, but did not explore the scope of learning outcomes that students obtain through this assessment, hence this paper suggests some possibilities for future research.

## 2 RESEARCH APPROACH AND METHOD

The purpose of this research was to describe how social learning has been assessed in various courses or educational programs; for this purpose, the method used was the Systematic Literature Review (SLR) that provided a comprehensive summary of the literature, relevant to the Research Questions (RQ); in addition, the methodological recommendations presented by other studies [19, 20, 21, 22, 23] were followed, which allowed examining the articles found, according to the research protocol (Figure 1).

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**Figure 1:** Research protocol

### 2.1 Definition of Scope and Objective (Research Questions)

Seven Research Questions (RQ) were posed ([Table 1](#)) to identify the most relevant publications on this topic, during the 2017-2021-time frame. The RQ were categorized into three major themes and then, based on the theoretical support of this research, possible answers were determined.

**Table 1:** Research topics and questions

Topics	Research questions (RQ)	Possible answers
Characteristics of studies on methods for social learning assessment in the 2017-2021 range	RQ1: What is the geographical distribution of the authors?	Country of the first author of the articles
	RQ2: What are the most cited articles?	Most cited articles
	RQ3: Which are the journals with the most publications on social learning evaluation and what is their quartile?	Journals that have published the most in this line of research Q level of the journal in which the study is published
Trends in the methodological design of studies	RQ4: What are the methodological design trends identified in the studies?	Number of mixed-method articles Number of articles with qualitative research methods Number of articles with quantitative research methods
	RQ5: What type of innovation does the article provide?	New process <a href="#">[24]</a> New service New knowledge
Innovation findings and evaluation methods addressed in the studies	RQ6: In what contexts is the evaluation of social learning approached?	Educational (academic) <a href="#">[25]</a> Social Cultural
	RQ7: What are the methods to evaluate social learning used in studies?	Trend of methods for the evaluation of social learning

### 2.2 Search process

Scopus and Web of Science (WoS) were the databases selected for the search of documents. The search string used in the two databases was delimited with the keywords (method, evaluation, social learning), during the years 2017 to 2021, which are journal articles and English and Spanish language ([Table 2](#)).

**Table 2:** Search string

Scopus	Web of Science
( TITLE-ABS-KEY ( method ) AND TITLE-ABS-KEY ( evaluation ) AND TITLE-ABS-KEY ( "social learning" ) ) AND ( LIMIT-TO ( PUBYEAR , 2021 ) OR LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) OR LIMIT-TO ( PUBYEAR , 2018 ) OR LIMIT-TO ( PUBYEAR , 2017 ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) OR LIMIT-TO ( LANGUAGE , "Spanish" ) ) AND ( LIMIT-TO ( SRCTYPE , "j" ) )	TEMA: (method) AND TEMA: (evaluation) AND TEMA: ("social learning") Refinado por: IDIOMAS: ( ENGLISH OR SPANISH ) AND TIPOS DE DOCUMENTOS: ( ARTICLE ) AND AÑOS DE PUBLICACIÓN: ( 2021 OR 2020 OR 2019 OR 2018 OR 2017 ) Período de tiempo: Todos los años. Índices: SCI-EXPANDED, ESCI, A&HCI, SSCI.

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### 2.3 Definition of inclusion, exclusion and quality criteria

As inclusion criteria, journal articles were considered, in English and Spanish, period 2017-2021 and that, in the title, abstract and keywords included the terms "method", "evaluation" and "social learning". Exclusion criteria included articles that did not belong to the specified time frame and that corresponded to reviews, book chapters or those that did not address the evaluation of social learning. Three quality criteria were defined and papers were considered if they met at least two of these criteria: if the article reports an evaluation of social learning, if it mentions social learning experiences in a training process (course, MOOC, social networks, learning community...) and finally if the article is part of an empirical study.

### 2.4 Data selection and extraction

In Scopus 106 documents were identified and in WoS 69 were found. 62 duplicate articles were eliminated and removed from the Scopus registry. Exclusion criteria were applied and 10 reviews, 2 book chapters and 15 documents that did not deal with the evaluation of social learning were eliminated. Finally, using the quality criteria, the documents chosen were 60 (16 from Scopus and 44 from WoS), from which the following data were exported: Authors, title, year, journal title, DOI, abstract and keywords. The PRISMA flowchart [26] that was followed is shown below (Figure 2).

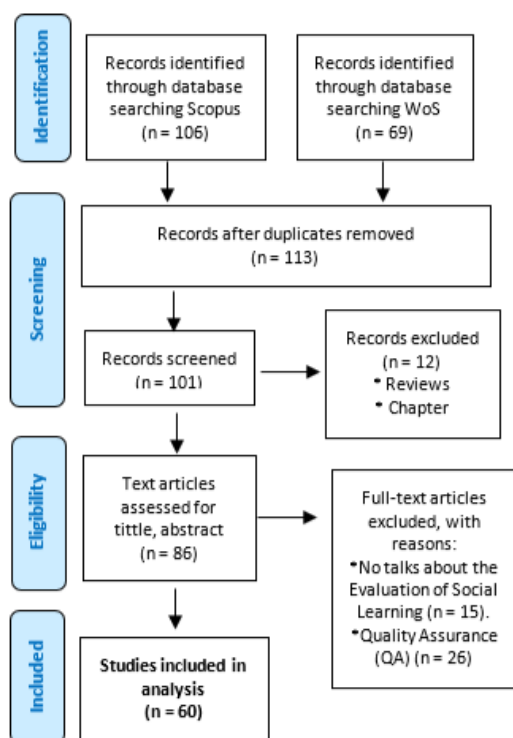


Figure 2: Record selection procedure

### 2.5 Data synthesis

The answers to the research questions were organized in an Excel form, the data were analyzed and, on this basis, the present research is constructed. The complete form, with the information from the 60 selected articles, can be found at the link: <https://doi.org/10.5281/zenodo.5064067>

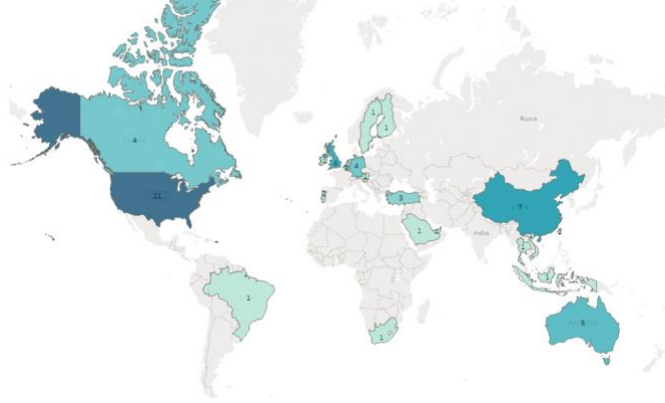
## 3 RESULTS

The articles are presented with an identification number (ID) in parentheses for citation in the results. Tableau was the tool of choice for data visualization and figure display.

RQ1: What is the geographical distribution of the authors?

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To determine the geographical location of the authors ([Figure 3](#)), the first author of the article was considered, the United States being the country with the highest scientific production in relation to the evaluation of social learning, with 11 papers, e.g., ID (24), (33), (50); China and the United Kingdom with 7 papers in each country.



**Figure 3: Geographical location of the first author**

RQ2: What are the most cited articles?

The articles with the highest number of citations (39 to 25 citations) are shown in [Table 3](#). The paper with ID (30) has the highest number of citations, 39.

**Table 3: Most cited articles**

ID number	Title	Number of citations
(30)	Adaptive social impact management for conservation and environmental management	39
(39)	Cooperative Device-to-Device Communications: Social Networking Perspectives	34
(12)	Gaining insight into interdisciplinary research and education programmes: A framework for evaluation	31
(47)	Developing a novel peer support intervention to promote resilience after stroke	27
(20)	How to embrace uncertainty in participatory climate change risk management—A roadmap	25

Among the key words of the most cited papers are: collaboration, program evaluation, participatory methods (12) and (20), peer support (47), social interaction (30) and (39), which shows the relevance of the information provided by these studies for the present research topic.

RQ3: Which are the journals with the most publications on social learning evaluation and what is their quartile?

[Table 4](#) shows the journals that have published more than one article, most of which are quartile 1. Journals with only one publication are not reported.

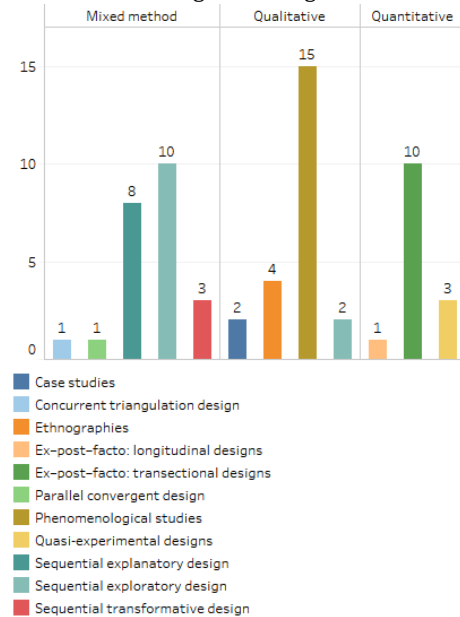
**Table 4: Journals with the most articles and their quartile**

ID number	Source title	SJR 2020	Quartile
(54), (55)	Child and Family Social Work	0.91	Q1
(36), (49)	Ecosystem Services	2.05	Q1
(35), (59)	Educational Studies	0.52	Q2
(19), (41)	Educational Technology Research and Development	1.35	Q1
(15), (21)	IEEE Transactions on Learning Technologies	1.38	Q1
(14), (48)	Sustainability	0.61	Q1
(3), (17)	Sustainability Science	1.66	Q1

RQ4: What are the methodological design trends identified in the studies?

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In the methodological trend (Figure 4), the studies follow the mixed research method and the qualitative method, with 23 studies each; and, the quantitative method in smaller numbers, with 14 studies. Regarding the mixed method, preferentially, they have used a sequential exploratory design, 10 studies, e.g., ID (3), (12) and a sequential explanatory design, 8 studies, e.g., ID (37), (57). The use of the qualitative method is also evident (where 15 phenomenological studies stand out, e.g., ID (38), (43). As for the articles that followed the quantitative method, a transactional design is distinguished in 10 studies: Ex-post-facto.

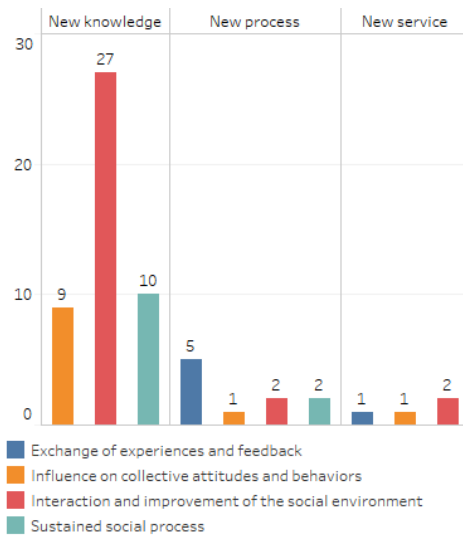


**Figure 4: Methodological trend**

RQ5: What type of innovation does the article provide?

Regarding the type of innovation for the evaluation of social learning (Figure 5), in 27 studies, the innovation is related to new knowledge, directed towards interaction and improvement of the social environment, in terms of mechanisms to foster: commitment to change, collaboration, interaction with practice as a result of social participation, some examples, ID (7), (40), (60); co-production of knowledge (30); establishing a common dialogue (37), (38), (57). On the other hand, when the type of innovation is related to a new process, there are 5 studies that address, for example, the exchange of experiences and feedback to define the characteristics and strategies of social learning (3), (15), (27), (36) and social influence through mass communications (24). Finally, if the innovation is directed towards a new service, for example, in 2 studies (13) and (23) there is evidence of interaction and improvement of the social environment through the use of social networks and digital technology for socially structured participation.

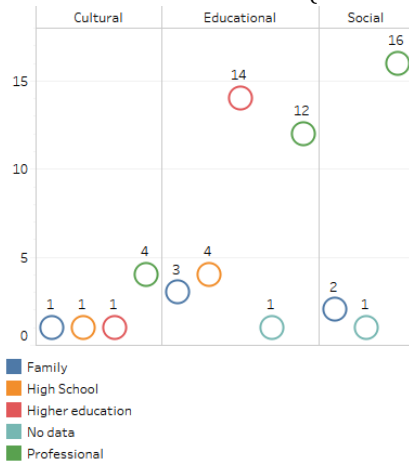
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**Figure 5: Type of innovation**

RQ6: In what contexts is the evaluation of social learning addressed?

The evaluation of social learning (Figure 6) is addressed in 16 studies in the social context related to vocational training, some examples, ID (3), (18), (24). In the educational context, 34 articles are presented of these, 14 are directed to higher education training, e.g. (4), (59), (60) and 12 to vocational training (25), (33), (50). In the cultural context there is less evidence (7 articles), of these, 4 are related to the professional context, thus (17), (53).



**Figure 6: Contexts for the evaluation of social learning**

RQ7: What are the methods for assessing social learning used in the studies?

In 18 studies, methods for organizing the evaluation of social learning (Figure 7) relied, in particular, on the development of networks, which fostered participatory experiences with a common vision of like-mindedness, e.g., article (2) and shared interests in (38). Co-creation and shared research practices, e.g., knowledge construction through interaction (40) and (52). Group affiliation and commitment, e.g., integration processes (4) and commitment to change as a product of social interaction (7). In addition, 12 other studies considered methods based on observational learning, where the behavior of social group members is identified enhancing the acquisition of new knowledge through observation and imitation or modeled behaviors, e.g., in articles (43) and (55). There are also 10 studies that address methods related to active and experiential learning, for example (12) and (32); as well as 10 studies that promote a method based on the community of practice model (1) and (20), among others.

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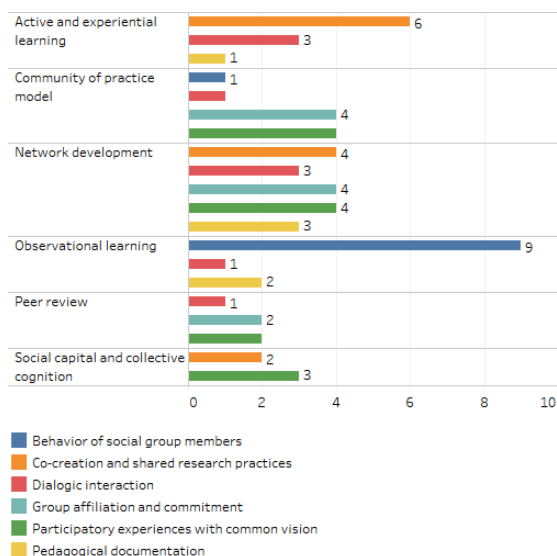


Figure 7: Methods for evaluation social learning

## 4 DISCUSSION

The next subsections provide instructions on how to insert figures, tables, and equations in your document. In order to know how the evaluation of social learning is developed, it is convenient to review the state of the art, based on the most relevant publications on the subject. The greatest production on the evaluation of social learning is evidenced in the United States (Figure 3); social interaction being one of the most analyzed elements among the most cited articles, as shown in Table 3. Social relationships and connections are a form of social capital that contributes to knowledge as they foster the ability to ask questions; hence, the impact of social interaction and knowing who to ask and who to trust can be as relevant as personal information, which adds value to the sense of companionship when having demanding tasks and learning challenges [4, 5], hence, it is important to address the dynamic interrelationship that occurs in the learner's social environments [13]. The studies show opportunities for further research into new ways of assessing social learning.

In an educational process, the use of active methodologies and emerging technologies has generated transcendent spaces for collaboration among participants, and the evaluation of these social spaces is important. In this study, both mixed research methods and the qualitative method are the methodological trends presented in the analyzed articles (Figure 4). To encourage and promote the active role and development of communication, social relationships and collaborative work, it is interesting to analyze the information collected from the complementarity of quantitative and qualitative techniques [12], characteristic of the mixed approach [15]. In order to know how interactions develop, it is necessary to evaluate them, which provides information to improve training processes.

Interaction can improve support among group members, generating shared learning experiences. According to the results of Figure 5, the innovation [24] for the evaluation of social learning focuses on new knowledge about interaction processes, highlighting essential aspects for improving the social environment such as: commitment to change, collaboration, interaction with practice as a result of social participation; co-production of knowledge; establishment of a common dialogue. Hence, to analyze socially constructed learning it is convenient to address the depth and nuances when quantifying dialogue [6], it is also necessary to look at interaction and co-production processes as opportunities to facilitate participation, communication and shared dialogue for the integration of knowledge [7, 8]. Formative spaces where shared dialogue and the development of connections in knowledge construction emerge make an important difference in strengthening social learning.

Today's society continually poses challenges and opportunities for training. The results in Figure 6 show how the evaluation of social learning is framed in the social context in terms of professional training; studies are also found directed towards an educational context for training, mainly in the field of higher education. In the dynamics of social configurations and contexts [25], learning networks intervene on the development of connections, community learning on the development of identity and team learning on formal learning structures and it is there where the importance of knowledge creation and exchange for social learning [13], as well as interaction through online



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environments [14,15] is reflected. Training experiences within the framework of social learning theory have the potential to respond to current training demands, creating conditions for collective knowledge.

The evidence of social learning evaluation revolves around shared experiences, both in cognitive and relational processes. The methods to organize the evaluation of social learning (Figure 7) were based on the development of networks, from participatory experiences with a common vision; on co-creation practices and shared research for the construction of knowledge through interaction; on group affiliation and commitment to integration and change processes as a product of social interaction. In a training program, social dynamics can be understood through the analysis of interaction, learning and social networks [6]; and thus, to determine the context and meaning of messages written in online training spaces, content analysis is recommended as one of the methods necessary to understand the social construction of knowledge [1]. Analyzing shared learning experiences allows a deeper understanding of the social dynamics and its evaluation processes.

## 5 CONCLUSIONS

In the evaluation of training programs and in the search for shared knowledge, social learning opportunities highlight that participatory methods and peer support are fundamental to strengthen social interaction. Scientific contributions on methods for the evaluation of social learning in the United States and opportunities for future research in Latin American countries, which have less scientific production on this topic, are identified. The studies highlight the complementary use of qualitative and quantitative methods, since one of the most used tendencies is the mixed methodology. In addition, the results reveal greater innovation on the subject, in terms of new knowledge, however, opportunities are detected to deepen research on methods involving new processes and new services for the evaluation of social learning; this search can be based on the information available in educational and social contexts directed towards training in higher education and vocational training, respectively. With respect to organizational methods for the assessment of social learning, the focus is on shared experiences through networks, co-creation and shared research, and it is necessary to consider the analysis of methods involving social capital and peer education as an opportunity for future research.

## ACKNOWLEDGMENTS

The present investigation is part of the Doctorate Program on Education in the Knowledge Society, of the Research Institute of Educational Sciences (IUCE - <http://iuce.usal.es>) of the University of Salamanca (Spain). The Universidad Técnica Particular de Loja (UTPL) is also thanked for the support of this research. In addition, this work is the result of project funding by CONACYT-SENER (Mexico) through the 'Binational Laboratory for Intelligent Management of Energetic Sustainability and Technological Formation' project (Ref.266632). The authors wish to acknowledge the financial and technical support of Writing Lab, Institute for the Future of Education, Tecnológico de Monterrey, Mexico, in the production of this work.

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