



Building a socio-educational ecosystem from the community funds of knowledge and identity approach. An illustrative example in Catalonia, Spain

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ABSTRACT

This paper aims to illustrate the creation, implementation and impact of an educational project for a socio-educational ecosystem design from the “community funds of knowledge and identity” approach. By socio-educational ecosystem, we mean formal, non-formal and informal agents who co-design, implement and evaluate an educational project by the work carried out by a “study group”, a collaborative social setting between teachers, researchers and social actors. This goes beyond the traditional reduction and encapsulation of education as something that primarily takes place within school classrooms led by teachers. To illustrate the approach, a case is presented of an archaeological site that is conceived as a “community fund of knowledge and identity” within an socio-educational ecosystem. Our study shows how the site becomes a mediating resource that promotes connections between people and learning opportunities, generating shared forms of identity. Drawing on research and participant observation, semi-structured individual and group interviews, and focus group to students in the fifth year of primary school, families, teachers, other professionals, and researchers, the educational project is described in terms of its “governance” (how it is organised), the “impact” (what changes and effects are produced in terms of learning and community belonging), and the “sustainability” (factors that enable it to be sustained over time). This example is discussed in the context of socio-educational ecosystems and the emerging research on “community funds of knowledge and identity”.

1. Introduction

The main objective of this study is to describe the creation, implementation and impact of an educational project organized as a socio-educational ecosystem and drawing on the perspective of “community funds of knowledge and identity” (Esteban-Guitart et al., 2022). In doing so, the “governance” (its agency and leadership) (Civís & Díaz-Gibson, 2021), the “impact” in terms of community and learning (Esteban-Guitart et al., 2023), as well as the “sustainability” or the long-term viability of the project itself (Rajala et al., 2023) are considered as categories to guide the description of the project. As we argue throughout this paper, this is a relevant approach in considering ways of expanding the units of analysis (Damsa & Jornet, 2021) and of educational interventions to more closely connect school learning and societal/community issues.

In particular, three research questions are addressed. First, how the educational project, in the context of the socio-educational ecosystem study group, is structured (“governance”)? Second, what changes and effects are produced in terms of learning and community belonging (“impact”)? Third, which factors enable the project to be maintained over time (“sustainability”)?

The educational project considered here (henceforth, the “Discovering Gebut project”) was initiated in the 2017–2018 academic year by a public early childhood and primary education centre located in the municipality of Soses (Lleida, Catalonia, Spain). The project was initiated in response to an archaeological discovery of an Iberian town near the school. As we argue and illustrate throughout this article, through the project, this site becomes a “community funds of knowledge and identity,” leading to the development of the socio-educational ecosystem

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and the educational project, as we describe in greater detail later.

The paper is organized into five sections. First, the community funds of knowledge and identity approach in the context of cultural psychology is presented as a theoretical starting point. Second, the role of the study group in the socio-educational ecosystem that co-design the project is characterized. Third, the categories of “governance”, “impact” and “sustainability” are suggested as lenses to describe and understand the case considered. Fourth, the descriptive analysis carried out to illustrate the implementation of the community funds of knowledge and identity approach through the categories mentioned above is described. Finally, the case is discussed in the broader context of the Funds of Knowledge literature, and with regard to how it relates to the socio-educational ecosystem.

1.1. Knowledge and identity from the community funds of knowledge and identity approach

Psychology, in general, and educational psychology, in particular, have considered theoretical constructs such as intelligence, memory, interest, identity or knowledge mostly as individual psychological processes grounded in cognitive representations of people’s experiences. For example, Renninger (2009) defined identity as “the learners’ self-representation as a person who pursues particular content and the processes that inform the development of this self-representation” (p. 106). From this viewpoint, identity, or one’s self-representations to be more accurate, are considered to be both informed and regulated by cognitive and affective informed self-system within one’s own unique past and experience (Leary & Tangney, 2003; Xiaobao et al., 2023).

However, Vygotskian accounts have emphasized the social and cultural origins and characteristics of higher psychological functions (Daniels et al., 2007; Wertsch, 1985). According to Vygotsky’s (1978) general genetic law of cultural development, verbal thought, mediated perception, voluntary attention, deliberate memory, or the formation of concepts originate first on the social and cultural level (interpsychological), and later, on the individual one (intrapsychological). Vygotsky’s sociocultural theory views higher mental functions as processes that are socially mediated by tools and signs (mediational means) that represent modes of cultural behaviour and thinking (Vygotsky & Luria, 1993).

In that regard, it can be argued that human identity is a socially and culturally mediated process in nature that is grounded in particular settings for an activity in which participants are engaged (Holland & Lachicotte, 2007; Penuel & Wertsch, 1995; Veresov, 2020). Communities develop resources, through sociocultural history, for identity formation such as narratives about the past, cultural artefacts such as flags and ideologies, social institutions such as schools, or particular activities. Currently, these can exist physically and/or virtually (digitally). For example, Lüders et al. (2022) analyze how social media affordances (such as hashtags, retweets, comments, emojis, and likes) contribute to creating particular social, shared identities among online users.

In any case, we advocate for considering knowledge and identity, contrary to individual cognitive process, as a “sociocultural phenomenon” (Veresov, 2020) that exists within people’s transactions, and which are distributed across the material, social, and cultural resources available. For that purpose, the theoretical and educational perspective of the “funds of knowledge and identity” (Esteban-Guitart, 2024), and in particular the recently suggested term “community funds of knowledge and identity” are assumed (Esteban-Guitart et al., 2022).

The “community funds of knowledge and identity” approach is understood as a proposal that enables education to be concretised as both a public and common good based on the recognition and pedagogical use of the heritage, legacy or artistic, oral, natural or historical inheritance of a given territory (Esteban-Guitart et al., 2022). This approach is grounded in the funds of knowledge tradition (Gonzalez et al., 2005), Bronfenbrenner’s (1976, 1989) ecological-systemic model on human

development, as well as recent advances in the design and implementation of “local learning ecosystems” (Hannon et al., 2019). That is to say, the creation and articulation of socio-educational networks of collaboration between different actors enhance its potential in terms of favouring meaningful learning, allowing its appropriation and sense of belonging.

Specifically, “funds of knowledge” means any “historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being” (Moll et al., 1992, p. 133). This approach starts as a collaborative project between education, psychology and anthropology to qualitatively study and understand household and classroom sociocultural practices within working-class, Mexican communities in Tucson (Arizona, USA). The primary aim of this work is to design and implement innovations in teaching learning and schooling practices that draw upon the intellectual resources, competencies, and experiences found in local households. The basic assumption is that all families accumulate, grounded in their respective trajectories and quotidian activities, powerful resources (knowledge, ideas, skills) to survive and guarantee their well-being and quality of life. These may include funds of knowledge in fields such as agriculture and mining, multilingual skills, material and scientific knowledge, construction abilities, ranching and farming, economics, household management (childcare, cooking) or religious beliefs and practices. This assumption challenges deficit thinking in education, which presupposes that underrepresented students and families are characterized by intellectual, linguistic, social, economic, and cultural losses. On the contrary, families are re-presented based on the knowledge, resources, skills, and strengths they possess. In doing so, teachers visited some of their students’ households to empirically document their funds of knowledge, and to creatively link curriculum and teaching practice with those resources, experiences and capacities.

An important aspect of the approach is the creation of “study groups” composed of participating teachers and researchers. These working groups act as a mediating element that connects the funds of knowledge identified during home visits with the educational activities developed from them (Esteban-Guitart et al., 2018; Gonzalez et al., 2005). Indeed, it is within the context of these “study groups” that teachers appropriate the model of the funds of knowledge, prepare the household visits, and integrate the skills and knowledge identified through these visits with the pedagogical objectives and educational projects that are subsequently designed.

Several decades of research in the funds of knowledge tradition have shown benefits in facilitating more meaningful and contextualized learning experiences and, among other impacts, establishing new relationships between teachers and families based on mutual trust, collaboration and reciprocity (Llopart & Esteban-Guitart, 2018; Volman & Gilde, 2021; Whyte & Karabon, 2016). However, some limitations have also been documented. Visiting all families is not possible because the approach is time-consuming. Furthermore, the families’ funds of knowledge do not always cover and represent the expertise, interests, and capacities of students.

To complement the families’ funds of knowledge unity of analysis, it has been suggested the learners’ funds of identity be understood as social-subjective productions distributed among geographical spaces, cultural artefacts, social institutions, significant others and activities perceived as meaningful from the learners’ point of view (Esteban-Guitart, 2016, 2021; Esteban-Guitart & Moll, 2014; Hogg & Volman, 2020). Therefore, the construct of “funds of identity” denotes a kind of set of material, social and cultural resources or box of tools for identity-sense making (Esteban-Guitart & Moll, 2014). Methodologically, funds of identity are produced by “identity artefacts” (Subero et al., 2018), that is, textual, graphic or multimodal elicitations made by the learners themselves, such as a self-portrait, where an individual represents what defines him or her most and what is most relevant to him or her. Teachers use these identity tools to link curricula to students’ lives and lived experiences (Hogg & Volman, 2020). Very similar to funds of

Table 1
Comparison between funds of knowledge, funds of identity, and community funds of knowledge and identity.

	Funds of knowledge	Funds of identity	Community funds of knowledge and identity
Definition	Repertoire of knowledge, practices, skills, and resources available to a family.	Significant geographical, social, institutional, and cultural elements for the learner.	Oral, historical, social, cultural, and natural heritage possessed by a particular community that allows for contextualizing learning and fostering collective identities.
Unit of analysis	Families	Student	Community
Methodological approach	Study groups formed by teachers and researchers to accompany household visits and the process of creating educational activities based on the identified funds of knowledge.	Creation and pedagogical use of identity artefacts created by the learner.	Creation of a socio-educational ecosystem to co-design the educational project based on the identified community funds of knowledge and identity.

knowledge, learners' funds of identity are used to enhance learning processes to produce a more personalized, contextualized and meaning-based curriculum.

However, funds of identity have so far not been conceived as means to foster shared, collective or social identities. Instead, the notion focuses on individual students who produce identity artefacts for teachers to use for pedagogical purposes (linking mathematics to a personal hobby, for instance). It is important to remember here that funds of knowledge were first suggested as a community-oriented approach to connect families' repertoires of expertise with the school curriculum (Moll, 2019). In that regard, in the first formulations of the funds of knowledge approach, the families were considered the unit of analysis. This represents, to us, a reduction of the community to the adults' skills and practices (i.e., families) because other communitarian resources or agents such as the role of the municipality, or other learning opportunities distributed among a territory are not considered.

The term "community funds of knowledge and identity" has been suggested to amplify the unit of analysis, beyond learners and families, by considering the community resources available as a potential tool for learning and collective identity-making (fostering a sense of community) (Esteban-Guitart et al., 2022). "Community funds of knowledge and identity" means any natural-geographical, cultural-artistic, social-institutional, historical, or oral legacy that, in a network involving schools and other social and community agents, offers potential learning opportunities by contextualizing teaching practices and with shared identifications/affiliations (Esteban-Guitart et al., 2023).

Indeed, community funds of knowledge and identity, such as a river in a village, undervalued oral traditions in a community or a historical building in a neighbourhood, are external factors of extra-cerebral organizations, products of historical, social and cultural life. This can be considered as being an "external brain", "third hemisphere" or "extra-cerebral organization" (del Rio, 2002), or "contextualized board", which can be used to mediate, contextualize, extend and link the school practices and collective/shared identities. In doing so, the approach is implemented through the creation of a "local learning ecosystem" (Hannon et al., 2019), or what in the introduction of this special issue is defined as a "socio-educational ecosystem".

In other words, while in the original approach of the funds of knowledge, it is the teachers and researchers who carry out the design and implementation of the educational project, in the case of the community funds of knowledge and identity perspective the study group is expanded to include other social and community agents (see Table 1).

1.2. The role of the study group in the socio-educational ecosystem

At this point, it is necessary to clarify that we understand socio-educational ecosystems as a set of social, educational and community agents (from formal, non-formal and informal settings) who co-design an educational project from a particular community funds of knowledge and identity (historic, artistic, cultural, oral, or natural legacy). This is achieved by building a network through the establishment of relationships based on mutual trust, cooperation and co-responsibility (Civís & Díaz-Gibson, 2021), considering community actors usually distanced from these proposals (Stoker, 2011).

Its fundamental characteristics include, among other aspects, being diverse and interdisciplinary, democratic, and flexible. Accordingly, the actions carried out are adjusted and personalized regarding the needs and possibilities of the school, students and surrounding organizations. In addition to achieving its goals, the success of the socio-educational ecosystem is understood by its continuity and the appreciation displayed by the community members (Díaz-Gibson et al., 2013).

It is in the context of a socio-educational ecosystem that the study group works, acting as a leading or motor group, that all the phases of the community funds of knowledge and identity approach are implemented. The study group is composed of members of the different agents involved in the socio-educational ecosystem. As a minimum, it is expected to be integrated into three areas or dimensions: theory (university), practice (school, social entities), and politics (local public governance institutions). The purpose of this group is to first identify a community fund of knowledge and identity and subsequently co-design an educational project and then implement and evaluate it. Therefore, this local socio-educational ecosystem incorporates a range of expertise from the community. This goes beyond the traditional consideration of the school, teacher, or teacher-content-student as a unit of analysis of educational psychology (Damsa & Jornet, 2021; Säljö, 2009).

1.3. The "governance", "impact", and "sustainability" of the educational project

The available literature on socio-educational ecosystems has identified various dimensions of analysis (see Penuel et al., 2020, for a literature review). In the model by Civís and Díaz-Gibson (2021), for example, the dimensions include "collaboration" (mutual trust, commitment, and work processes), "transversality" (participation of different socio-educational professionals), "horizontality" (power relations among participants in terms of equality), "co-responsibility" (conceiving education as a shared responsibility and collective vision), and "innovation" (commitment to transformation and educational change). These are factors associated with the governance of a socio-educational ecosystem. In this context, "governance" refers to the forms of organization, including the roles and functions of the agents involved (agency), as well as the forms of leadership (Díaz-Gibson et al., 2013).

Derived from the notion of community funds of knowledge and identity, two dimensions of analysis emerge. One refers to the project's impact on achieving curricular learning. The other is related to the generation of processes of belonging and collective identity (Esteban-Guitart et al., 2023). In this sense, the "impact" should be considered

Table 2
Categories and subcategories for educational project analysis.

Categories	Subcategories
Governance	Leadership Agency
Impact	Learning contributions Social cohesion
Sustainability	Maintenance conditions

based on these two dimensions, namely: the learning derived from the educational project, and the processes of belonging, adherence, and social identity potentially resulting from them.

Finally, by “sustainability” we refer to the social and material conditions that make socio-educational networks possible, as well as the design and implementation of educational projects based on the perspective of community funds of knowledge and identity, in particular (see Table 2). In this regard, the literature indicates that the school must be convinced that the nature of the partnership will support its teaching responsibilities and, therefore, will not deviate from its educational mission (Valli et al., 2016). Similarly, Kutsyuruba and Walker (2015) consider trust as a factor for sustaining shared actions over time. Thus, the central element here is derived from the following question: what are the necessary conditions to maintain a particular educational project over time?

2. The Discovering Gebut project as an illustrative example

To test the significance of and empirically illustrate the creation, implementation and impact of the educational project co-designed in the context of the study group, the case of the project Discovering Gebut is considered. This concrete example helps illustrate the community funds of knowledge and identity approach, in general, and the governance, impact and sustainability of the educational project, in particular.

From a qualitative case study perspective, our aim is not to conduct exhaustive, inductive research to generalize common features; nor is it to provide a content or discourse analysis of the case. Rather, our aim is to study a social unit in its natural, social and cultural setting to serve as an exemplary test for a model guided by particular research questions (Priya, 2020). In our case, we are referring to a community funds of knowledge and identity as a model to be illustrated.

As described above, the Discovering Gebut project began in the academic year 2017–2018 at the Jaume Mirè public school for early childhood and primary education located in the municipality of Soses (Catalonia, Spain). The project centred on the excavation work at the Iberian site of Gebut (800–200 BCE), conducted by the Prehistoric Research Group of the University of Lleida. The community and pedagogical project involved various social and community entities from the area. The aim was to carry out pedagogical activities both within and outside the school, regarding the settlement and ways of life of the Iberians.

In particular, the socio-educational ecosystem described here involved the participation of the University of Lleida, the Association of Families of the School, the Soses City Council, the Pedagogical Resources Centre of Segrià, the Lleida Museum, and local community associations such as the “Cycling Club”. The spaces used included the archaeological site of Soses, located just 4 km from the Jaume Mirè educational centre, where activities take place before and after visiting the site, as well as other municipal facilities such as the Lleida Museum.

Overall, the objectives of the educational project co-designed were to: contextualize learning related to the curricular contents of environmental, social sciences and language areas; and foster links and relationships between the educational centre and its local environment, facilitating processes of community involvement and shared belonging based on the Iberian past of Gebut.

The project unfolds throughout each academic year under a specific strategy comprising a variety of activities. In the first years of implementation, activities were led by the archaeological team of the University of Lleida, providing explanations both in the classroom and at the archaeological site related to the historical heritage of the town. Additionally, activities took place at the Lleida Museum focusing on human bone structure or the organization of settlements and habits of the Iberian village. Collaboration with families included studying characteristics of historical periods or religions, as well as investigating the artisanal culinary traditions of different cultures present in the school context. These were showcased at a fair in the municipality where

students present their work and learning achievements during the academic year. Since the academic year 2021–2022, the project has focused on just one year, the fifth grade of primary with students of 10 to 11 years of age. The project became called “Guides of Gebut” as the main activity of the students was to present the heritage characteristics to a specific audience. In this sense, in the academic year 2022–2023, students became guides to the excavation site for a group from another school in the province of Lleida. The project spans the school year with various visits, mainly to the archaeological site of Soses, along with pedagogical work before and after the visit.

At a pedagogical level, the project is carried out and evaluated through a “lapbook,” a notebook that students create based on the content covered in each session. It is designed to allow them to interact with it (containing fold-outs, stickers, drawings, and organized information). Specifically, it begins with a timeline indicating the stages of history, showing where the Iberian settlement of Gebut is situated. From there, it documents what is addressed during the various project activities, which include the knowledge learned with the help of the group of archaeologists from the University of Lleida—what archaeologists need, the characteristics of the excavation and the Iberian settlement—and the lessons about artefacts, strata, lifestyles, and habits provided by the Lleida Museum. Overall, it provides students with a space to reflect on what they need to know to be guides for the site and to assess the completion of the tasks carried out.

2.1. Participants and data collection

To document the case, data were collected using three main instruments: researcher and participant observation, semi-structured individual and group interviews, and focus groups. In the first instance, a semi-structured interview was conducted with the tutor of the fifth-year primary school class. Given the nature of this type of interview, the research group had prepared certain questions to address the objectives of the study, thus guiding the dialogue, but leaving room for new contributions that would provide us with relevant information for the research. This was carried out at the beginning of the course to find out and unravel their perspective of the project from its inception to its current state. Specifically, the topics explored included the nature of the activities undertaken, their perception of benefits to the community, learning experiences, key factors for success and improvements that could be made, among others.

Once the project had been implemented, the rest of the qualitative data were collected and recorded. Thus, a brief interview was conducted with a family member of a Moroccan student. This focused on their perception towards the impact of the project from the family’s point of view, as well as on their active participation in the project. Similarly, we interviewed an archaeologist from the University of Lleida, covering, among other things, what participating with the school entailed for them, the activities that were developed and how it was organized. We also conducted interviews with two groups of students (six in total) in the fifth year of primary school (10 and 11 years old) about their learning throughout the project, focusing on the curricular content that they had worked on and the competencies that they had explored. Their

Table 3
Participants and methodological technique to collect data.

Participant	Methodological resource
Teacher-tutor	Semi-structured interview
Mother	Semi-structured interview
Archaeologist	Semi-structured interview
Six students aged 10 and 11 years old	Focus group
Headteacher	Semi-structured interview
Teacher	Interview made by students
Eight people from the socio-educational ecosystem study group	Online focus group

emotional perception of the process and the sense of connection between their immediate environment and the school were also emergent themes (see Table 3).

We then interviewed the headteacher of the school. Particularly in this case, we arranged for the six students who took part in the group interviews to raise some questions to their teachers. In this way, a greater voice of the students as active agents of research is promoted, elaborating questions that, as active participants in the project and with real lived experience of it, are genuinely interested in knowing. They asked about the student evaluation, the difficulties and studying they had to do, the contacts they needed to establish, how they felt, their favourite moments, the changes they thought of making as well as the new knowledge constructed.

Lastly, we met online with the study group for a focus group session. Representatives from the school, the Educational Resource Centre, the Museum of Lleida, researchers and archaeologists from the University of Lleida and members of the research group took part in it, making a total of eight people in the session. To guide the discussion, we drew up a series of questions relating to the way the project was structured, the contributions made at the community level and the factors identified as fundamental to building and maintaining this type of experience.

2.2. Analysis of the case

We narratively present the case based on the three research questions: How is the educational project structured (“governance”)? What changes and effects are produced in terms of learning and community belonging (“impact”)? And, which factors enable the project to be maintained over time (“sustainability”)? All these questions are answered according to the perceptions and voices of participants.

2.2.1. The governance of the educational project

We are faced with a proposal that is designed and implemented by a range of community agents with shared objectives, and it is in this work between different members that we find ideas related to governance. On the one hand, it is pointed out that some party needs to be in charge of the *leadership* of the project to be able to effectively develop pertinent actions from their positions. According to an educator from the Pedagogical Resource Centre involved in the project: “Governance also requires this. It has to have a leadership that generates autonomy and, then, with all the entities that can collaborate, it may support them with the specific things they need.”

As we see in this case, it is the school that is taking the lead in such a project. However, it is important to point out that this position is assumed by the school, as it presents a thoroughly communitarian vision. In other words, in no case is this leadership imposed; on the contrary, it is fully recognised and appreciated.

“If this project has a virtue, it is that it has started from the leadership and the needs of the school, but not from a school that is closed in on itself, but a school that wanted to be open within the community, right? So, I think that this local leadership means that this constellation of entities can provide support”

(Educator from the pedagogical resource centre).

In this line, it is worth stressing how the recognition is bidirectional, as the different actors also feel understood and valued, thus enabling the assembly of the different actors and ideas from the outset. As an educational technician from the museum asserts: “My word would be empathy, because I think the key to this project has been that everyone, from the very first moment, was eager to participate. I think that there was a spectacular connection between all the actors who took part.”

Nevertheless, in the view of the management team, certain aspects of leadership could be improved to foster better governance of the network. In this respect, the numerous school responsibilities hamper communication between the stakeholders.

“There is a somewhat weak organisational component in this sense because the school’s rhythm is so intense with everything, that sometimes we have it planned, but we don’t communicate it [...] We always do it a bit late, and everyone has to rush. I don’t know if you agree with me, and I recognise that it is true, that we still don’t get it right with this aspect of the organisation.”

(School head teacher).

On the other hand, it is revealed from the different data collected that the governance and structure developed demonstrate the *agency* of its members. In other words, it allows them to be actors with decision-making capacity and to feel ownership of the process generated. This is reflected, for instance, in the perceptions obtained over time about the project’s procedures, with members consciously stating the elements that improve and facilitate its functioning. According to the archaeologist involved:

“The process of learning and accumulation from one year to the next is helping us to make this project more and more agile and easier to bring together. I don’t know, at least this is my perspective, and I only have two years of experience with Gebut, but I think that from one year to the next we have noticed a certain agility in deciding how to approach it and how to make the students engage with it.”

At this point, it is important to state that the appropriation or agency is by no means exclusively individual, but rather collective. This is reflected in the words of the headmistress, who occupies the role of acknowledged leader, commenting on the absence of any instrumentalization by its members: “One of our strengths is that no one has tried to take over the project. Because here at the school we are really happy and proud, and so we proclaim it, but in no way is it an individual merit.”

Continuing in this vein, it is worth highlighting the need for this collective vision, to guarantee the enrichment of the proposal. This allows different people to be invited to support common goals, which implies individual and collective agency. The construction of such synergies and capacity for both individual and collective contribution is made possible by the reciprocal recognition that the actors have for each other. As already mentioned in the previous testimony, the relevance of an open attitude towards contributions is expressed; however, it is then clarified that participants feel they have the space and legitimacy to do so.

“Hence, I think the stars have aligned, because everyone I think, and this is to their credit, because everyone has managed to create the space for everyone to be able to make this contribution of maximums. But feeling very good and feeling very well-valued. I think this is another important element.”

(Educator from the pedagogical resource centre).

Concomitantly, the development of the project allows its members to learn more about the ecosystem and its relationships. This is of great value because it allows them to make decisions based on this new knowledge, thus promoting better networking between entities (such as the school and the museum):

“But the Gebut project was a before and after for us. We were already doing projects in which we were collaborating mainly with training courses [...] Well, it [The Gebut project] served us a bit to later establish the guidelines for how to engage with the school. Based on this project, we have developed it, we have given it shape, haven’t we? And we have made a type of contract with the schools, based on a project called ‘Schools that are friends of the Museum’. In other words, the whole project we did with all of you was a learning process that helped us to organize how we had to approach schools when it came to working on projects.”

(Museum educational technician).

Ultimately, this dimension also emphasises a better understanding of

the respective stakeholders' organizations, fostering their agency in terms of their internal management and possibilities.

2.2.2. The impact of the project

Within the framework of this second analytical category, we indicate the contributions that the Gebut project has made at different levels. First of all, we will focus on the effects of the development and implementation of this proposal in community terms, that is, on *social cohesion*. In this way, it is identified as a relevant project between schools, families and the environment, as it allows the alliance between different members of the locality based on an element of common heritage. An archaeologist expresses this idea:

"I think that, not only in Soses with Gebut, but with all archaeological sites, when we work with schools, it is when the children bring their families and this creates this communion between the site and the people who manage it, research it, and disseminate it, and the population."

(Archaeologist and researcher).

Along the same lines, the significance of the project for the whole community is presented, exemplifying once again this union of the community and its different social and cultural legacies, and adding the nuance that the students find it especially appealing to participate actively in the project. The keyword here is the "connection", which is expressed by the teacher and tutor as follows: "Everyone wants to be the protagonist of their learning because it is so meaningful, it connects them to the group, to the families, to the village, to the culture.... And there are so many connections that are linked."

The underlying reasons for this sense of belonging, which is shaped and strengthened throughout the project, are also identified. The cultural and social backgrounds of the members of the community are revealed, and interpersonal relationships are established based on a common position:

"From the beginning, this project has helped us to see everything that we have in common, whether it is with families whose children were born here but whose parents come from Morocco or something else. Well, this project has helped us to see the common points of our cultures more than our differences because, after all, we are all from the Mediterranean."

(Teacher and tutor).

Furthermore, the project, and more specifically the heritage that enables it, is described as a catalyst for the articulation of the different cultural and personal perspectives of the community. The educational technician at the museum expresses this idea as follows: "That is to say, it is a brutal connector, especially with people from the Maghrebi community. There is not a child, person or woman who has not... they say 'No, no, I used this mill' and all the children, 'My grandmother so and so...' In other words, it is one of those pieces that I say is a connector."

In addition, we identify the impact of *learning contributions* that have occurred as a result of the educational project. The school is committed to weaving the Sustainable Development Goals (SDGs) into the teaching-learning process. Consequently, within the framework of the project itself, they use specific SDGs to promote learning about equal opportunities and sustainability.

Alongside the above, the Gebut experience is considered to have distinct implications in terms of equity, as it ensures that all learners are involved in diverse contexts and with different actors. In other words, students are offered a range of opportunities linked to other professionals -not only teachers- and institutions -not only their school- in which they all participate, regardless of their personal or family characteristics.

Therefore, the articulation of the project allows both the recognition of the historical and community legacy, as well as its understanding and

interpretation, emphasising reliable means of obtaining this knowledge: "Obviously, heritage is important, but we must not only focus on heritage, we must also take into account the need to understand why things are the way they are, that is, we must also understand how we come to know our past through research." (Archaeologist and associate researcher).

Following the line of formal learning required in the project's programming, the knowledge, competencies and criteria regarding curriculum and evaluation are defined and developed according to the current Spanish Education Law. In particular, the tutor and teacher emphasize the work on the stages of history and how the project allows them to work on this topic properly.

Precisely, the latter is expressed not only by the adult agents but also by the students. They recognise the academic learning accomplished outside the classroom and its connection to the local context:

"We went to the archaeological archive [museum], and it was also very interesting there because we learnt, apart from what we had already learnt about the Iberians, we learnt new things. That there were many cultures and where they could be found, it was very interesting."

(Boy from the group class).

In addition, students perceive the improvement of certain specific competencies (personal and social) that are to be actively promoted within the school framework. Indeed, they report that their participation in situations that have required working with their peers and public exposure has helped them to enhance their communication and intra and interpersonal relationship skills: "I have learned to be more self-confident, because when it comes to explaining it, I have been more confident, and I have also learned to work more as a team, to feel more at ease in a group." (Boy from the group class).

Lastly, concerning this category, we identify unforeseen or unexpected learnings of a spontaneous nature. Thus, the process in which these different agents have been involved, along with their respective entities, has allowed and facilitated the promotion of other initiatives or proposals. The educational technician at the museum, for example, explained how the project contributed, as a collateral effect, to the cultural week to test a videogame in augmented reality with the school.

2.2.3. The sustainability of the project

Regarding the last dimension of analysis, sustainability, the *conditions required for the maintenance* and continuity of this type of educational project are described. It is specified that the role of each one of the agents involved is essential, clarifying that, without the favourable positioning to the challenges of the project, it would not have been possible to assume the commitments that underlie this process.

Nonetheless, it is stated that the school and its inclination to create such a project is primordial, insisting that other territories may have similar contextual characteristics, but, without this main node, the necessary steps and actions will not be taken. In that regard, the active role of the school can be considered both as a present and future condition in terms of sustaining the project.

It is also described as a value of and for the project, the fact that such a team of agents is configured with different profiles and backgrounds, combining their different skills and knowledge to ensure the achievement of the project. In this sense, a representative sample of agents of the local socio-educational ecosystem is considered a condition for maintaining the project.

"This is precisely the value that projects have when there is multidisciplinary or interdisciplinarity. The different agents from the field of teaching and pedagogy can collaborate with people who come from the field of research, this allows the contents that you transmit not only to be solid, but also, it may seem silly, but I think it is not, to be transmitted with passion."

(Archaeologist and associate researcher).

Beyond focusing on the human resources and their characteristics which made this possible, attention was also drawn to the need for the work to be structured collaboratively, allowing questions and doubts that arise individually to be discussed and resolved. This means that democratic governance and explicit leadership are conditions for the sustainability of the project.

There is another factor that allows for the projection of the proposal. This refers to the existence of a firm and intentional framework or paradigm, which structures the project and guarantees its coherence:

“I would add this element that, perhaps, the novelty that I see is having participated in this process of reflecting and training and that they were able to incorporate it very well into this project, and that the result has also been the fruit of this educational intentionality that they were able to bring to it.”

(Educator from the pedagogical resource centre).

Once the project has been implemented and recognised by its neighbours, the community imprint of the project becomes evident. This is recognised as a condition for the project to keep evolving and being valued as heritage and a connector of the community:

“I believe that the love for the site will not stop in the town. I think that the work you have done over the years working with the children, and all this, doing this work in depth with the town council and the archaeologists is important.”

(Educator from the pedagogical resource centre).

Lastly, it is noted that, in general, the political-cultural context that surrounds this type of action does not support or help to establish innovative practices such as the one presented; on the contrary, it forces their consolidation to depend on the effort and will of the people involved. This appears as a dangerous element for the consolidation of the proposal. In other words, making the project depend upon the voluntarism of certain committed individuals can be a risk to the sustainability of the project.

Thus, although the consolidation of the project over the years is highlighted due to its benefits in contextualizing learning and the socio-educational network created, some difficulties or limitations have been identified (see Table 4). In addition to the need for social support (people) and material support (resources) to implement the project, a significant amount of time is required to organize the work, interact, and carry out the activities (see Table 4). Therefore, participants in the socio-educational ecosystem, especially the management team, express the need to focus the project on a single academic year, which has already been implemented, to ensure the project’s continuity and make it more manageable.

Furthermore, another aspect identified for improving its continuity is the need to use a more comprehensive portfolio at the pedagogical level than the previously described lapbook. Additionally, there is a pronounced need for a “connector” person with the specific role of creating, maintaining, and developing relationships among the various agents involved in the project.

Table 4
Some strengths, weaknesses and areas for improving the project according to participants.

Strengths	Weaknesses	Areas for improving
The project has become consolidated over time.	Political and organizational support is needed to ensure that the development of the project does not depend on the voluntary actions of a small group of people. Requires time to organize and carry out activities.	Establishing a liaison figure to facilitate relationships between the various social, educational, and community agents involved. Focusing the project on a single academic year level.
It allows contextualized learning through the pedagogical use of a community resource, the archaeological site of Soses.		
It involves a broad network of social, educational, and community agents.	Difficulty in implementing the project in all grades of the educational centre. Requires time to organize and carry out activities. Requires support to facilitate travel between the educational centre and the other sites.	Using artefacts (portfolios) to document different learning evidence over time.

3. Discussion

The purpose of this study was to document and illustrate the design, implementation and impact of a socio-educational ecosystem from the community funds of knowledge and identity approach. In particular, the governance (how this socio-educational ecosystem is structured), impact (what changes and effects are produced in terms of learning and community belonging) and sustainability (factors that enable it to be maintained over time) were considered as analytical categories.

With regard to this first dimension of governance, we observe how the actors share a common understanding of how the project and its successful implementation were the result of a collective effort, rather than individual merit. In particular, there is a strong emphasis on the idea of connection and proximity that develops between actors through the taking on of different roles and an open perspective on contributions (Civís & Longás, 2015). In this way, we understand that socio-educational responses to the diversity of society effectively require the involvement of different community actors not previously considered (Stoker, 2011), as in this case, members usually far removed from everyday school life, such as the archaeologists or the town council staff.

Indeed, the idea of a school that seeks to be open to the community is very much shared among the members, as the school takes the lead in structuring the socio-educational project. Therefore, the educational objectives and the purpose of the project as such are framed in the core of its community and its territory, and the teaching-learning process is understood as being irreducible to the institutional structure. On the contrary, this perspective promotes the democratization of decisions within the community (Díaz-Gibson et al., 2013).

In line with the latter, we can see how this process of joint action has allowed the autonomy of its members (and their respective organizations) so that they feel, on the one hand, legitimized and valued to contribute and search for responses towards socio-educational purposes; and, on the other hand, enabled to move forward and become aware of the elements that can be improved to collaborate with the entities. This is the case, for example, of the museum, which has not only been able to facilitate its spaces and resources to support contextualized and meaningful learning for students but has also indicated how its participation in this process has favoured a better understanding of its structure and organization. Overall, coinciding with Gairín-Sallán et al. (2022), actors consider it relevant to be recognised for their contributions and to have delimited spaces to be able to do so, this being unavoidable in the structure and therefore the governance of the ecosystem.

The implementation of this socio-educational project has also had consequences for the connection between members of the same community. In this sense, its capacity to bring together and encourage the participation of families, neighbours, professionals and the educational centre has been noted. This means that the project certainly makes it possible to establish links between members in a community where diversity is on the agenda. Consequently, we point out that there is an enhancement in social cohesion, as it is noted that the members can value and identify themselves through the territory. An indicator of this

is the creation of a community association dedicated to the preservation and promotion of the archaeological area as a result of the project that has been carried out there.

Likewise, the agents of the study group value this legacy or archaeological heritage as a “connecting factor”, capable of catalysing the relationships and interactions of the community. This reflects the perspective of “community funds of knowledge and identity”, understanding the Iberian archaeological site of the locality as a culturally accumulated product of social history. In this sense, it is situated in the “third hemisphere” (del Rio, 2002), as an extra-cerebral organization (Luria, 1966), to organize, expand, amplify, and link learning and social identity affiliations (Nigrini & Esteban-Guitart, 2023).

Furthermore, apart from these community and identity aspects, the contributions of the Discovering Gebut project are described in relation to the learning outcomes generated. In this sense, the socio-educational ecosystem has established a set of learning opportunities for all students, within the framework of the SDGs and the national education system. This means that not only the appropriation of basic knowledge of the curricular content is guaranteed, but also participation in different practices and spaces along with various members of the community. This way of relating to their environment from a socio-educational perspective is likely to help students engage in learning with meaning and personal and social value, which allows them to take part in their context from a critical and sustainable perspective (Iglesias & Esteban-Guitart, 2020). For instance, in the students’ reflections on their learning, the idea of improvement in group work, self-confidence and intercultural awareness materializes.

At the same time, as the head teacher reports, they are aware of the existence of inequality among students, which is why from their position they intend to facilitate a proposal that ensures participation within these spaces and resources that are usually reserved for extracurricular occasions. According to Hannon et al. (2019), this can be considered an ecosystem that promotes equity. Certainly, one of the elements underlying the current educational scenario is precisely the educational recognition of non-formal spaces and practices, as well as the differences in learning that these entail for students.

As far as the sustainability of the educational project is concerned, we find that, in fact, beyond the achievement of the objectives, its success is understood in terms of its continuity and the appreciation of the agents involved (Díaz-Gibson et al., 2013). Within the framework of the experience described above, what really stands out are two ideas. Firstly, keeping alive an activity that encompasses this local heritage, not only by the school as the main node but also by the rest of the agents and members of the community. Specifically, they indicate the existence of an “imprint”, which we link to the idea of identity appropriation and personal and social recognition. Secondly, trust (Kutsyuruba & Walker, 2015) emerges as a fundamental element for sustainability, as the participating agents consider the project to be by everyone and for everyone. Moreover, the recognition of commonalities within a diverse educational community is seen as a factor that supports its long-term involvement in the project. Likewise, the participating school believes that student participation generates educational learning, a condition for trust and sustainability (Valli et al., 2016).

Regarding the conditions identified in the analysis, it is feasible to propose a series of elements which allow the generation of communitarian educational projects like this. Thus, the following are described as perceived requirements for success: a) a favourable and shared predisposition to take on the challenges of the project; b) interdisciplinarity of the agents; c) collaborative work; d) a theoretical-reflexive framework that nurtures the proposal; and e) community appropriation and appreciation of the project. A number of these elements have, of course, been described in the literature as factors that facilitate the management of educational projects or local educational ecosystems in general (Penuel et al., 2020). In that regard, Gairín-Sallán et al. (2022) describe the importance of the participation of different institutions, the interaction and mutual learning between the various members -of different

ages and profiles- and the collaboration between stakeholders to effectively create these local ecosystems. Thus, we concur in considering the importance of interactions between different community agents with plural profiles, from different organizations, who structure themselves based on collaboration. However, we also disclose that these are not just conditions for generating the ecosystem, but also form part of the factors enabling it to be sustained.

Nevertheless, it is relevant to mention the existence of an explicit criticism of the lack of resources invested by broader policy to support these initiatives, arguing that the systemic framework in which they are embedded - outside the team’s will - undermines their consolidation. In other words, projects such as this require material and time to be developed.

In terms of contributions, this experience can contribute to the long history of funds of knowledge tradition by enriching the scope and unit of analysis. In other words, community funds of knowledge and identity are focused not on learners and/or families but rather on the spread of community learning opportunities. Furthermore, the study group is enriched from student-researchers (funds of knowledge) to social, educational and community agents (community funds of knowledge and identity) obtaining potentially a more robust social and cultural capital for designing and implementing the educational project.

Finally, community funds of knowledge and identity approach appears as a model to incorporate the socio-educational ecosystem in the praxis of education. In that regard, the study group, in the context of a socio-educational ecosystem, is suggested here as a social space where the project is not only defined but also implemented and evaluated.

However, further research is needed to understand more deeply the social, material and cultural conditions needed to implement communitarian projects such as those described here. In particular, it is hypothesized that this work in a socio-educational ecosystem needs a kind of ecological leadership model (Toh et al., 2014) understood as a whole vision of education to incorporate other actors, expertise, and roles to enrich the school as well as the community nurturing based on collaboration and a collective way of thinking. This should be developed in future theoretical and empirical studies.

4. Conclusion

In conclusion, the dimensions of governance, impact and sustainability have been documented through this study. Our analyses suggest that governance needs leadership, leadership needs a communitarian vision, and leadership has to generate trust, reciprocity, autonomy and agency. Regarding the impact, the community funds of knowledge and identity (the archaeological site of Gebut in this case) acts as a material and symbolic medium to facilitate social cohesion and common identification, a sense of belonging and sharing. It acts as a connector among participants and social, educational and community spaces. Furthermore, it facilitated learning of SDGs, and interpersonal communicative skills, based on contextualization teaching and learning process, linking the curriculum of history with the archaeological site, for instance. Finally, trust among the participants and in the educational project is presented as a key element for sustainability. Similarly, it is necessary to clarify the role, expertise and interest of any agents involved. The importance of school is stressed to lead the project and energeise the socio-educational network created, acting as a “pedagogical leadership and organiser”, and reinforcing the collective work. For this, the work needs a shared framework to guarantee its coherence, and the community funds of knowledge and identity approach can act as a theoretical and methodological tool to provide this.

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CRedit authorship contribution statement

Paula Boned Ribas: Writing – original draft, Methodology, Data curation. **Edgar Iglesias Vidal:** Data curation, Conceptualization. **Antonia Sierralta Covarrubias:** Formal analysis. **Moisès Esteban-Guitart:** Writing – review & editing, Project administration, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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