Revisiting Education: On the Role of Imagination, Intuition, and Other "Gifts" for Open Scholars

Class, Barbara

How to cite

CLASS, Barbara. Revisiting Education: On the Role of Imagination, Intuition, and Other "Gifts" for Open Scholars. In: Frontiers in education, 2022, vol. 7, p. 846–882. doi: 10.3389/feduc.2022.846882

This publication URL: https://archive-ouverte.unige.ch/unige:163402
Publication DOI: 10.3389/feduc.2022.846882

frontiers | Frontiers in Education

ORIGINAL RESEARCH
published: 22 July 2022
doi: 10.3389/feduc.2022.846882

Revisiting Education: On the Role of Imagination, Intuition, and Other "Gifts" for Open Scholars

*Barbara Class**

TECFA, Faculty of Psychology and Educational Sciences, University of Geneva, Geneva, Switzerland

The knowledge society is not a final state; rather, it is a collective task that we all must work towards. This reflective report, conducted in a Scholarship of Teaching and Learning approach by a scholar who teaches research methods and has been reflecting on research method education for a number of years, is a contribution to this endeavor. Its purpose is to share praxis, in the Freiran sense, on Open Education and Open Science as public good and commons through a specific example of Open Educational Practice (OEP). The report's first finding involves documenting that OEP and providing some conceptual tools and suggestions for scholars who would like to move towards Openness. Its second finding, rooted in a previous SNSF research project, focuses on epistemology to raise awareness on the importance of philosophical and historical approaches to education. Without this knowledge, scholars find themselves closed in models that they replicate without consciously considering the values and methods they convey. The report's third finding is a model of the knowledge creation process that considers knowledge as commons and incorporates a theoretical framework of absences and emergences that encompasses ignorance, inspiration, imagination, creativity, and intuition. Einstein called these faculties "gifts," and we argue that scholars should learn to leverage them within an overall open framework.

Keywords: open education, absences, emergences, collective intelligence, epistemic sustainability commons, imagination, open educational practice

OPEN ACCESS

Edited by:
Diana Hernández Montoya, Universidad Estatal a Distancia, Costa Rica

Reviewed by:
Ana María Sandoval Poveda, Universidad Estatal a Distancia, Costa Rica
Mildred Acuña Sossa, Universidad Estatal a Distancia, Costa Rica

***Correspondence:**
Barbara Class
Barbara.Class@unige.ch

Specialty section:
This article was submitted to Digital Learning Innovations, a section of the journal Frontiers in Education

Received: *31 December 2021*
Accepted: *07 June 2022*
Published: *22 July 2022*

Citation:
Class B (2022) Revisiting Education: On the Role of Imagination, Intuition, and Other "Gifts" for Open Scholars. Front. Educ. 7:846882. doi: 10.3389/feduc.2022.846882

INTRODUCTION

The call for submissions reads "Open Education for Sustainable Development: Contributions from Emerging Technologies and Educational Innovation." This paper will address neither development nor technologies, for reasons that will be explained below. Instead, it will address education, the primary focus of Open Education, and research methods in education, for their contribution to education as an area of study.

The paper is conducted in a Scholarship of Teaching and Learning (SoTL) approach (Boyer, 1990) and aims to share reflections and practice in the area of Open Scholarship, leveraged through Open Educational Practices (OEP) (Cronin and Maclaren, 2018; Huang et al., 2020;

Werth and Williams, 2022). To prepare students for their role as full-fledged stakeholders in the knowledge society, it is important for them to experience OEP, make choices, take on responsibilities, and contribute to meaningful findings. For colleagues who would like to try out new ways of teaching and conducting research, this article provides conceptual tools and perhaps an inspiring example.

It is no secret that we live in a time of transition, as modern societies and economies shift towards knowledge societies and economies. Openness is one characteristic of knowledge societies, and the progress of Open Science in the last decade is an indicator that cannot be overlooked (e.g., Ramjoué, 2015; Beck et al., 2020). In the same vein, commoning, universal sharing, and empowerment help to build a collective intelligence that transcends individual languages, disciplines, and epistemologies (Innerarity, 2015b).

Openness has existed for several centuries, with the essential features of freedom and transparency (Baker, 2017). In scholarship, its origin can be traced to 1373 when the people of Florence requested public lectures on Dante. This movement led to the emergence of European universities in Paris, Bologna, Oxford, and Cambridge, which were founded in response to students' demands for lectures. Openness was driven by internationally mobile students and scholars and was based on a growing curiosity about and awareness of the value of education (Peter and Deimann, 2013). However, this did not last. Over the last 700 years (1300–2000), "we can see periods of freedom and transparency in the dissemination of knowledge animated by empowered learners alternating with periods of public and/or ecclesiastic control on knowledge" (Class, 2022, p. 650).

We will first give an overview of the key topics dealt with in this paper, including the knowledge society, the public good addressing specifically information and knowledge commons, and Open Education. We will then present the paper's theoretical framework, which consists of the epistemologies of absences and emergences (Santos, 2016) and experiential learning (Usher, 2018). We will discuss the SoTL approach adopted for this article in the method section before sharing our findings and recommendations. We will conclude by highlighting how this reflective report contributes to epistemic sustainability (Class, 2022) through an understanding of the knowledge creation process that takes into account ignorance and imagination as key players. To contribute to Open Education and Openness in general, we advocate for promoting education in line with Einstein's insights on inspiration, intuition, and other human gifts (Hayes, 2007).

LITERATURE REVIEW

Knowledge Society

A knowledge society is characterized by increased creativity in redefining norms, values, epistemologies, and research methods. Scholars in a knowledge society are tasked with putting together bits and pieces of data, information, knowledge, and ignorance to form the collective intelligence that is sought after (Innerarity, 2015a; Farmer, 2019). This idea can be traced back to open scholars like John Dewey, who discussed the importance of building social and collective intelligence from individual experiences and minds in order to achieve cultural advancement as a community (Dewey, 1937, cited by Farmer, 2019).

Because a knowledge society questions norms, values, and epistemologies, it is first and foremost a society that produces ignorance. Science and research are no longer considered definitive authorities, but, when they articulate new knowledge, sources of instability, and incertitude. A knowledge society is thus a society of ignorance that is aware of this fact and acts accordingly. That is why contemporary societies are in a continuous process of learning and consider learning as active experimenting. Certainties are scarce in any field, debate is the rule, and risk-taking and creativity are guiding principles. Knowledge is both revisitable and revisited; it is closely related to ignorance and involves an element of risk. The unknown (i.e., uncertain knowledge, forms of non-scientific knowledge, and ignorance) is considered as a pool of resources and opportunities instead of a deficit of knowledge.

In decision-making, ignorance is seen as an opportunity for creative action (Innerarity, 2015a). It is a form of the unknown that is unrelated to a temporary lack of information. This kind of ignorance has been generated by the progress of science: It grows in tandem with (and even faster than) scientific knowledge. Ignorance has thus an irreducible dimension that we must understand, accept, and use as a resource. Assessing whether unknown unknowns are relevant or not becomes the central question, as there is not any "superior knowledge" that will completely discover unknowns (Innerarity, 2015a, pp. 56–65).

In the introduction, we stated that we will not talk about development, despite the invitation to do so in the call for papers. Here, we briefly explain why. Our reasoning is based on the work of Santos (2021), who shows how the discipline of sociology emerged in Western societies in order to analyze the problems these societies were facing at the time of the industrial revolution (i.e., around 1760). Although the foundations of sociology had been laid by Ibn Khaldun (1332–1406), scholars did not acknowledge his methodological contribution and at best considered his writings as ethnographic testimonies. After World War II, this same discipline of sociology disseminated the concept of development. Problematized exclusively by Western-centered stakeholders, it resulted in placing "the majority of countries on the wrong side of history, the world of underdevelopment" (p. 291). The concept of development covers several aspects of the human being and human society, from the spiritual to the political to the economic. It also adopts an extractivist perspective toward the planet (Santos, 2016)—the limits of which we can see today, most importantly at the ecological level. We thus think that if we are to attain sustainability, we must base our understanding of the world on concepts—not yet defined, but in the process of being articulated (e.g. Arauz, 2022)—that are different from and independent of development.

The Public Good: Commons

Commons can be understood as resources managed collaboratively by a community that establishes rules and governance with the goal of preserving and sustaining these

resources (LePortailDesCommuns, no date). Defined in the Middle Ages on the basis of Aristotelian principles, it "referred to a good belonging to and attainable only by the community yet individually shared by its members." The public good is at the same time individual and pertains to the community. It is holistic in the sense that the sum of the individual goods "exceeds the goals of inter-individual transactions" (Dupré, 1993, p. 687).

Natural-resource commons have been studied extensively and from several perspectives (e.g., Ostrom, 1990; Haller et al., 2019, 2021). Collaboratively managed digital commons, the most well-known of which are Wikipedia or Linux, have revived this approach of managing goods (Bollier, 2014). Recently, it has been considered at the intergovernmental level with the concept of the digital public good (DigitalPublicGoodsAlliance, 2021). In defiance of private property laws, markets, and states, advocates for commons have shown that this is an efficient and effective way to move forward. Specific communities are responsible for and guarantors of certain resources they have committed to. Regardless of whether the resource is material or immaterial, the commons are defined by a set of social practices and cultures that transcend the collective management of the resource.

The guiding principle of commons is not the resource itself but the sustainability of the community that manages it and of the social rules, values, and ethics that are developed for this purpose. The underlying vision of commons is to serve humanity through social cooperation and mutual support. From a conceptual perspective, the focus of commons is on human, social, and civic concerns. These typically include, for example, openness and feedback, shared decision-making, diversity, society equity, and sociability in the commons (Bollier, 2004, p. 275).

Distinguishing information commons from knowledge commons seems obvious, as information is distinct from knowledge. Knowledge is a cognitive processing capability that results in empowerment and requires intellectual and/or physical effort from those who enact it. Information, by contrast, is formatted and structured data available in the world; it is instantiated only and only when a knowledge processing action takes place (David and Foray, 2003).

Information Commons

Information commons emerged in the 1950s and consist of an openly shared set of information and tools to handle information (Aigrain, 2005, p. 74). Information commons are composed of at least three layers: the physical layer, the logical layer, and the content layer. The physical layer consists of the electromagnetic spectrum, cables, wires, and fibers. The logical layer consists of software and technical protocols that allow expression to be carried over the physical layer. The content layer consists of information, expression, and culture (Benkler, 2001; Bollier, 2004, p. 276).

Information commons is a conceptual tool to raise awareness about collectively owned and managed resources (e.g., Internet, broadcast airwaves) and the claim for legal authority and social norms to control and manage those resources (Bollier, 2004, p. 280). This conceptual tool helps when discussing digital aspects of democratic culture in a knowledge society.

To move from information to knowledge commons, it is worth looking at learning commons. In past decades—particularly with the shift from teacher-centered to learner-centered pedagogies and to the digitalization of human activities—libraries created the concept of the learning commons. Learning commons are collaborative learning spaces that contain various technologies, resources, and services provided by diverse academic units (Blummer and Kenton, 2017, p. 331). Similar to maker spaces (another example of community-led knowledge commons), libraries are considered a "third place" (Blummer and Kenton, 2017, p. 333) where people can access knowledge through different means, resources, and interactions. This third place is also managed from the perspective of the public good, that is, shared decision-making, openness, and feedback. As a side note, it is interesting to underline the key role of librarians in the development of Open Science in academia today. Not only do librarians offer support for new practices related to Open Science, but they can also help design these practices (e.g., Class et al., 2021).

Knowledge Commons

Hess and Ostrom (2007) rely on the relationship established by Machlup (1983) between knowledge, information, and data. This relationship has similarities with David and Foray (2003) theory, discussed above, but incorporates data as a third element. In it, data are considered as raw bits of information, information as organized data in context, and knowledge as the assimilation of information and understanding of how to use it. Finally, knowledge "refers to all intelligible ideas, information, and data in whatever form in which it is expressed or obtained" (Hess and Ostrom, 2007, p. 7).

Hess and Ostrom (2007) caution that research on knowledge commons does not take into account the breadth and depth of the literature on natural-resource commons. Knowledge commons are analyzed both from the perspective of enclosure and the perspective of openness/inclusiveness (i.e., democracy and human rights). In the former, threats take the form of property legislation that prevents open access to knowledge. In the latter, which draws on Benkler (2001), the focus is on digital interoperability, Open Science, and networks to the detriment of the importance of sharing and using shared knowledge to support sustainable democratic societies (Hess and Ostrom, 2007, p. 13). What is needed is a framework that respects the fundamental properties of commons, including the sustainability of the community, shared, and collaboratively managed resources. As a reminder, Ostrom (1990)'s principles for the successful management of natural-resource commons are as follows: clearly defined community boundaries, congruence between rules and local conditions, collective choice arrangements, monitoring, graduated sanctions, conflict resolution mechanisms, local enforcement of local rules, and multiple layers of nested enterprises (Rozas et al., 2021). Inspired by research on natural-resource commons, a similar framework could organize research on knowledge commons. Indeed, research is emerging that attempts to apply the management of natural-resource commons to knowledge commons (e.g., Sanfilippo et al., 2018 see Figure 1 and Table 7 specifically; Stuermer et al., 2017).

Open Education

Education and Research in Education

In Western societies, education as a field of research is relatively young: about 100 years old (Van der Maren et al., 2019). For several decades, researchers argued about the status of education: is it a craft, an art or a science (Burkhardt and Schoenfeld, 2003)? This dispute can be clearly seen in the "paradigm war" among educational researchers (Reeves, 1999; Teddlie and Tashakkori, 2009), who wrangled over whether qualitative or experimental research should be the dominant approach in educational research. The field also underwent substantial changes after World War II (Laot and Rogers, 2015).

The International Bureau of Education (IBE) was founded in 1925 by leading figures in the New Education movement, such as Edouard Claparède, Pierre Bovet, Adolphe Ferrière, and Béatrice Ensor. These leaders advocated for learner-centered education rather than organizational, curricula- and teacher-centered education (Hofstetter and Schneuwly, 2013, p. 216). Some 20 years later, in 1945, UNESCO was created with the pacifist aim of working towards IBE's goal of building a better world through education. However, in 1957, UNESCO added an economic objective to its initial endeavor, recommending that countries put 5% of their GDP towards schooling in order to support development (Laot and Rogers, 2015). In addition, in the 1940s and 1950s, several supranational organizations either began to focus on education or were created to promote education and scientific research in education (e.g., the International Association for the Evaluation of Educational Achievement, OECD, NATO). These organizations attempted to stimulate economic progress through the education, training, and qualification of the working-class population. At the same time, philosophy and history of education, which were key components of university curricula in education, were replaced by scientific approaches borrowed from the natural sciences, for example, experimental methods (Rohstock, 2015).

Education as a scientific field has a responsibility with regard to research methods both for young and senior researchers. In the social sciences, research method education has been studied for more than a decade, beginning with the seminal work of Garner et al. (2009). Researchers have uncovered valuable insights for the praxis (e.g., Garner et al., 2009; Wagner et al., 2011, 2019; Earley, 2014; Kilburn et al., 2014; Lewthwaite and Nind, 2016; Nind and Lewthwaite, 2018), including the necessary mastery of Shulman (1987)'s pedagogical content knowledge (PCK) in the domain of research methods education (Nind, 2020). A recent call for the creation of new methods to study Open Education is also underlined (Ramirez-Montoya, 2020; Savin-Baden, Accepted). For these reasons, research methods might better be presented as a topic of ignorance (see the section below on the knowledge society), rather than from a deterministic perspective. In addition, the philosophy and history of education are essential parts of Content Knowledge (CK) in the domain of research methods education and need to be revisited with Openness and mastered as complex, dynamic, and diverse knowledge.

Education as a practice has been shown to require knowledge and competencies (Jonnaert et al., 2020), but concepts like imagination, creativity, inspiration, and intuition (Hayes, 2007) have been largely ignored in this field. To what extent could these constitute important building blocks for education? With reference to Einstein's insights, we share here an understanding of these important concepts. "The use of logic permits a person to move from point A to point B; by contrast, imagination can take the mind in any direction it chooses, without restraint" (Hayes, 2007, p. 150). Einstein said that "the intuitive mind is a sacred gift, while the rational mind is only its faithful servant," but "our society honors the servant and has forgotten the gift" (Waks, 2006; Culham, 2015;, p. 1). Intuition is a form of understanding that is rapid and spontaneous, without the need for conscious thought (Dörfler and Eden, 2014), which can weigh and integrate many factors in split seconds (Dijksterhuis, 2007). It can facilitate direct knowing (Sinclair, 2011), fast problem solving, decision-making, and creativity (Dane and Pratt, 2009) and can even be more accurate than reasoning in complex situations (Pretz, 2011; Sipman et al., 2021, p. 1). Unconventional approaches that engage body and mind and oriented toward finding solutions lead to engagement and deep learning and generate creativity, ingenuity, and inspiration (Nordstrom and Korpelainen, 2011).

Open Education

Open Educational Practices (OEP) offer the opportunity to explore unconventional educational approaches. OEP have been studied for 15 years (e.g., Cronin and Maclaren, 2018; Paskevicius and Irvine, 2019; Bali et al., 2020b; Huang et al., 2020; Clinton-Lisell, 2021; Werth and Williams, 2022), and research shows that five conditions are enabling: (i) Open Educational Resources (OER) as input and output; (ii) enabling technology to support a connected learning community where OEP can flourish; (iii) open teaching approaches that empower students to construct their own learning pathways; (iv) open collaboration to reach out to concerned communities for students to interact with stakeholders outside of academia; and (v) open assessment through peer evaluation, reflective practice, and evaluation by third parties (Huang et al., 2020). Six reasons to adopt OEP resonate with the five conditions and are foregrounded as follows: (i) sharing, that is, the freedom to create, share, and reuse knowledge; (2) transparency, that is, the capacity to trace the knowledge construction process and underlying values and transparency in the entire process from admission to certification; (iii) collaborative knowledge construction, that is, participate in the building of the collective intelligence; (iv) deconstructing power structures in the educational environment, that is, giving voice to everybody; (v) personalized learning, that is, learners have authority to determine their learning needs and learning path; and (vi) learner empowerment, that is, learners are involved as active full-fledged stakeholders in each step of the learning process from the choice of learning outcomes to the design of assessment (Werth and Williams, 2022).

This perspective of OEP is primarily oriented towards pedagogical aims. It is important to be aware that other dimensions are currently being researched. Framing OEP from a social justice perspective (Bali et al., 2020a,b) sounds particularly challenging but all the more relevant within educational

endeavours. It echoes other parts of this text that focus on decolonisation, absences and emergences. Authors discuss the impact of OEP and the extent to which they can be considered socially just. They particularly identify actors and contexts where OEP support social justice at cultural, economic and/or political levels and classify them on a continuum from transformative to negative in terms of impact (Bali et al., 2020b).

Keeping in mind this complex background and recalling the history of Open Education (e.g., Weller, 2014; Blessinger and Bliss, 2016; Weller et al., 2018; Bozkurt et al., 2019), the question remains: where should scholars put emphasis today? On the "Open" aspect? On the "Education" aspect? On "Open Education" as a construct and potential means of renewing education?

In this paper, we have deliberately positioned Open Education within the conceptual approach of the public good and commons. This is important to underline with regard to the three strategies used to define approaches to openness. The first strategy associates openness with historical periods or movements in which it thrived (e.g., Florence in 1373, open-source software movement); the second examines the philosophical and conceptual underpinnings of openness, such as the public good; and the third seeks ways to operationalize the concept of Open Education (e.g., with licenses that privilege copyleft over copyright). Constructs common to the three strategies include "the role of freedom, justice, respect, openness as attitude or culture, the absence of barriers, promotion of sharing, accessibility, transparency, collaboration, agency, self-direction, personalization, and ubiquitous ownership" with freedom and transparency as the two essential values from which the remaining derive (Baker, 2017, p. 131).

Again, despite the reference in the call for papers to emerging technologies, in this article we deliberately separate Open Education from technology. In Peter and Deimann (2013)'s history of Open Education, the authors emphasize the importance of dissociating the essentials of this construct from technology. For instance, in the Florence period mentioned above, books were socially perceived as a means of bypassing state and religious authority, which allowed the printing press to develop rapidly; in other words, the values preceded the technology. It can also be interpreted the other way round, that is, the technology enabled the book to become socially what it became. Technologies like printing, railways, computers, and Internet did and do play a role in Open Education, but this is the case throughout the continuum of education, up to and including "closed and controlled education." In the 1980s, technology started to be foregrounded as a vector of change. This idea is supported by leading economic organizations like WEF, the World Bank, or OECD, which advocate for change through technology and the capitalist economy. Today, this agenda is questioned and even described as "digital feudalism" (Morozov, 2016 cited by Deimann, 2020). In our opinion, therefore, technology should not be foregrounded as the exclusive vector of Openness. Moreover, focusing on Open and Human values, in complementarity with technology, seems to be a more sustainable avenue for future endeavors.

THEORETICAL FRAMEWORK

The primary theoretical framework adopted for this SoTL study is the sociology of absences and emergences. Experiential learning theory is used to conceptualize engagement through active learning. Both combined are deemed relevant to conduct research in the knowledge society because they provide a means of theorizing ignorance and experience.

Sociology of Absences

The sociology of absences aims to show that what "does not exist" is in fact actively produced as non-existent, that is, a non-credible alternative to what exists. This transgressive approach breaks with the positivist principle of reducing reality to what exists and to what can be analyzed using the methodological and analytical instruments of the modern social sciences. The sociology of absences aims precisely to consider what exists beyond this "abyssal line"—to make possible objects that are impossible and make present those that are absent. There is not a single and unique way not to exist. Not existing is the result of certain processes and logic applied to everything that does not fit into the linear temporality and whole of metonymic reasoning. The sociology of absences focuses on social experiments that have not been entirely colonized by metonymic reasoning. It seeks to explore what exists in the South that is independent from the constructed North/South dichotomy. It is about researching what exists beyond the abyssal line using non-modern mindsets and epistemologies (Santos, 2016, p. 251 and following). We consider it as a concrete intellectual tool to operationalize UNESCO (2021, p. 15) recommendation to open up to diverse knowledge: "Open dialog with other knowledge systems refers to the dialog between different knowledge holders, that recognizes the richness of diverse knowledge systems and epistemologies and diversity of knowledge producers."

Sociology of Emergences

While the sociology of absences broadens the range of social experiences that are already available, the sociology of emergences broadens the range of possible social experiences. This is where imagination comes into play. The sociologies of absences and emergences are deeply connected: The first builds on social experiences and the second on anchored social expectations.

The sociology of emergences aims to symbolically increase the importance of knowledge, practices, and actors in order to identify future trends and thereby make hope more probable than frustration. Such symbolic amplification is essentially a kind of sociological imagination that allows researchers to better investigate the conditions that make hope possible and better define the principles for action that will promote the fulfillment of those conditions. The sociology of emergences acts on possibilities (i.e., potentials) and capacities (e.g., legitimate authority, power) and focuses on care, without being deterministic.

Figure 1 (below) is a visual representation of the theoretical framework for this SoTL study, which should help readers

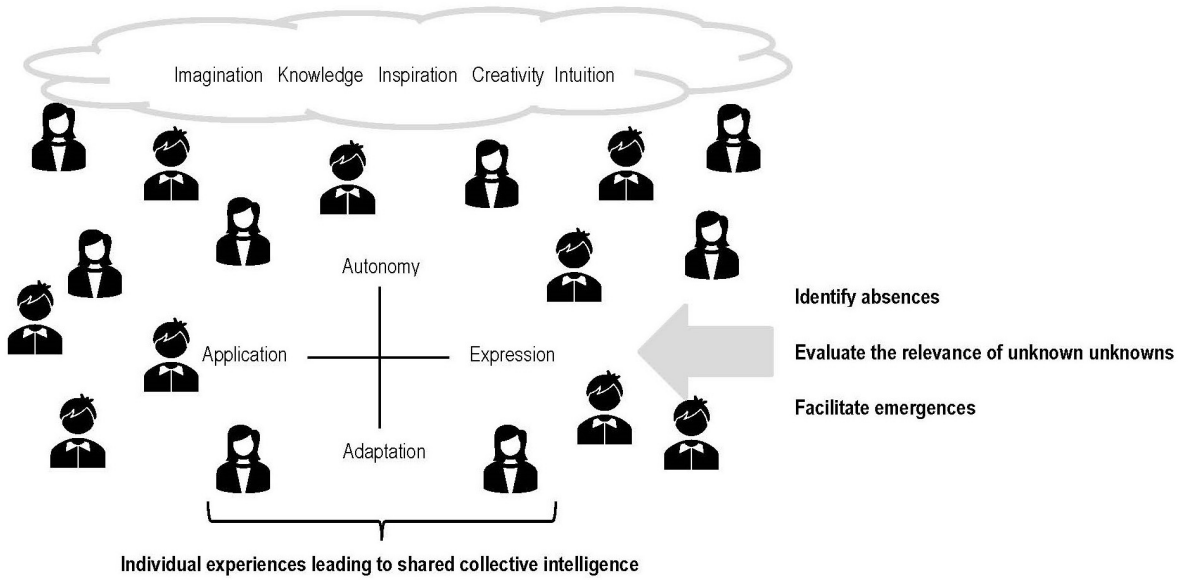

FIGURE 1 | Visual representation of the theoretical framework, drawing on Santos (2016) and the previous studies (Usher et al., 1997; Usher, 2018).

to synthesize and grasp the main concepts presented here. The framework flourishes from the concept of experiential learning. It is considered from the socio-cultural environment and organized on two continua Autonomy–Adaptation and Expression–Application. The first continuum expresses the degree of empowerment and the second the degree of creativity of individuals interacting with their environment (Usher et al., 1997, pp. 104–114). Individual experiences in identifying absences and facilitating emergences will contribute to larger, similar endeavors. Imagination, knowledge, inspiration, creativity, and intuition all guide scholars and other stakeholders toward collective intelligence.

MATERIALS AND METHODS

Open Education impacts our scholarly praxis. Praxis is to be understood in the Freiran sense (Freire, 1994) of reflexion and action deeply entangled and aimed at transforming the world by leveraging (epistemic) justice. Adopting a critical perspective conducted through a SoTL study (Boyer, 1990) was motivated to explore some of this impact. **Table 1** outlines the study's guiding research question and the resulting process used to reach findings (Hubball and Clarke, 2010, p. 4).

FINDINGS

> "*I believe in intuition and inspiration. Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution. It is, strictly speaking, a real factor in scientific research.*"—Einstein.

Findings With Regard to Open Educational Practices

The first finding of this study consists of an example of a contribution to the knowledge society by one higher education research methods teacher (the author) through an Open Educational Practice (**Table 2**).

First, I assessed my Open Education capacities with a recent practice-oriented inventory (Universidad-Internacional-de-La-Rioja, no date). This inventory addresses key questions with regard to OEP and offers a summary in the form of a synthetic table together with recommendations for further improvements. **Table 2** captures each dimension—from design to assessment through to content and teaching—and the three levels: foreign to OEP, starting to engage, and advanced.

Reaching the advanced level depicted in **Table 2** (blue font) requires professional development from the teacher, that is, interest, commitment, and work. In my case, this development has been conducted on a personal-initiative basis through an extremely interesting course on Open Education developed from previously existing Open Educational Resources (OpenMed, 2015). I participated in this 40-h course offered within a Moroccan project (Univ-Ouverte@Maroc, 2021) during the 5 weeks that partly ran in parallel with the research method course I was teaching and that is reported below as an example of OEP. Although I was already an Open educator in many respects, this course was an excellent occasion not only to learn and read more and advance my reflection but also further my praxis. In particular, it was after taking this inventory that I began involving external stakeholders in assessing students' work (Achour Rahmani et al., 2021).

Huang et al. (2020) have identified five conditions for effective OEP, which are shown in the left column of **Table 3**. The right column explains how each condition has been scenarized

TABLE 1 | SoTL approach used in this study.

SoTL research context	Central SoTL research question	Methodological approach	Data	General outcome
Freedom and transparency are guiding principles for scholars engaging in Open Education. Sustainability, sharing, contributing and collaborative management of resources are at the heart of the public good. Open scholars try to make the public good and commons a reality in higher education contexts.	How can Open Educational Practices look like in qualitative research methods education?	Reflection is informed by research conducted on Open Education and Open Science. Action was guided by previously gathered interview and focus group data, previous personal experience of qualitative research methods teaching, and outputs from the literature.	Interview data with one francophone research methods teacher and one focus group with two anglophone research methods scholars from a previous SNSF project.[1] Analysis of the scenario of the 2021 qualitative research methods course[2] (**Table 3**).	Invite scholars to reflect on: (i) education and Open Education; (ii) the roots of any research method used; (iii) the role of imagination in the knowledge creation process. Share the teaching and learning experience as an Open Educational Practice that can be inspiring. Contribute to the discussion on the Open paradigm shift.

[1] *https://data.snf.ch/grants/grant/190634. Please note that no analysis is performed here. We simply report the passages on the epistemology of the interview and focus group because they align with Rohstock (2015), discussed above.*
[2] *The scenario, in French, is available from: https://tecfa.unige.ch/perso/class/ScenarioDetailles2014-2020/.*

TABLE 2 | Summary table to situate the scholar's Open Educational Practices.

A. Open Learning Design	B. Open Content	C. Open Teaching	D. Open Assessment
A3. Open Designer	B3. OER expert user	C3. Open teacher	D3. Open evaluator
A2. Collaborative designer	B2. Familiar with OER	C2. Engaging teacher	D2. Innovative evaluator
A1. Individual designer	B1. New to OER	C1. Traditional teacher	D1. Traditional evaluator

Recommendations to improve your teaching openness.

TABLE 3 | Implementation of the five OEP conditions in a qualitative research method course at the master's level.

Five conditions identified for OEP	Implementation in the research methods course
Open Educational Resource (OER) – input and output	Use as input: the "textbook" of the course (Class and Schneider, no date) is an OER that was started in 2014 on the EduTechWiki and to which several groups of students have contributed. Use as output: the article that reports on the work conducted throughout the course is available on Zenodo (Achour Rahmani et al., 2021) for future use and as a meaningful learning contribution.
Enabling technology to support a connected learning community where the OEP can flourish	Moodle LMS was used to store all official information related to the course, such as grading. A Mattermost environment was used to support learning conceived as a conversation (Laurillard, 2002) with ongoing discussion/production/feedback/new production loops.
Open teaching for self-regulated students' pathways	Students first worked in pairs on a single component of the research cycle (e.g., literature review, research question, method, etc.). Later, the components were adjusted to align into a coherent research design.
Open collaboration to participate in open communities	This dimension was not prioritized and should be improved. Students had access to two discussion communities: one made up of their peers and teaching staff, and the other solely of their peers. Access to a broader community was lacking and should be granted.
Open assessment—peer and community-based	Students reviewed each other's work when combining the separate research components into a coherent whole. Two external evaluators – a librarian and a research methods teacher – were asked to assess the final product.

and implemented within a 2-ECTS qualitative research method course offered at the master's level.

In future editions of the course, it will be important to discuss qualitative research methods that are epistemologically aligned with knowledge society paradigm shift. For instance, Reader et al. (2021, p. 1) ask questions to which we do not have answers yet but are important to raise in order to investigate new, unknown dimensions. Examples of the questions asked by the authors—one of whom is a research methods teacher—include "Where do the mythical, mystical and spiritual end and the rational, objective and empirical begin?" and "How do we find our bearings in the midst of this complexity and where do we search for resources that are trustworthy and reliable?" Introducing this kind of questioning will balance the pedagogical and social justice aspects of the OEP (Bali et al., 2020b).

Interview Findings

The study's second finding focuses on epistemology and is based on one interview with a francophone research methods teacher in the area of education and one focus group with anglophone scholars who have been studying research methods education for many years.

The francophone teacher explained that in her university, there used to be a course entitled *Epistemology of research*

in education, which was compulsory for all students. When the teacher who used to offer this course retired, her position—Chair of knowledge sociology—was discontinued, as the institution chose to prioritize other directions for research. Her course continued to be offered for some years before it was also discontinued. The interviewed teacher noted that she has observed a narrowing of epistemological questions at the institutional level, resulting in both teachers and students lacking fundamental knowledge. She underlined two current unproductive attitudes: first, that epistemology goes without saying and as such it is not necessary to teach it; second, that all researchers are able to teach epistemology. Restoring a broad mindset on these key questions of how knowledge is produced and utilized seems timely with the Open paradigm.

The focus group with anglophone scholars was organized in order to compare research findings to their own research findings in an anglophone context. We will focus on one salient aspect of this focus group that concerns epistemology. First, the group noticed that epistemology was not a major topic in their research interviews, nor one that was spontaneously brought up: "This is the kind of things [epistemology] that people learn when they are doing their formal research methods training and then just kind of move on from. It sort of all becomes so embedded that they do not use those words and framing to talk about it." They also found that talking about practice and observing actual classroom teaching were sometimes quite different because research method teachers lacked a pedagogical vocabulary. As a result, scholars of the focus group ended up acting as information brokers to help their interviewees articulate their pedagogical practices[1].

[1]It would be interesting to investigate the extent to which the teachers who are the research participants of the anglophone scholars, possess epistemological knowledge and concepts to articulate it.

Modeling the Knowledge Creation Process

The previous sections of this paper—specifically, those that link knowledge commons to a theoretical framework of absences and emergences to address ignorance in a knowledge society—form the core of the study's third finding. Within research method education, axiology, ontology, and epistemology are important to understand, as they constitute the breeding ground of research methods. It is fundamental to the work of research method teachers to question the methods inherited by modern societies, with a view to helping researchers to unveil research objects, that is, emergence process. Up to now, huge efforts have been made towards achieving the Open Access part of Open Science. It is now time to investigate the many remaining facets of Open Science and Open Education: for instance, what science means, making sense of the Open paradigm, reaching out to a variety of knowledge systems (UNESCO, 2021), and working together to build a collective intelligence.

To sum up this third finding, we have provided a visual representation (**Figure 2**) that builds on Class et al. (2021, Figure 8).

To properly understand the core process (depicted in the center circle), it is important to underline that the process is not linear and that each individual element loops on itself. Data are considered as raw bits of information that turn into information when structured. Information is organized data in context that becomes knowledge when it is assimilated by actors who understood how to use it. Knowledge is a cognitive processing capacity that leads to both empowerment and ignorance when fully explored with diverse epistemologies. Ignorance is a form of available knowledge that needs to be recognized as such and that involves imagination. Imagination is a way of broadening the range of possible knowledge and experiences, particularly through

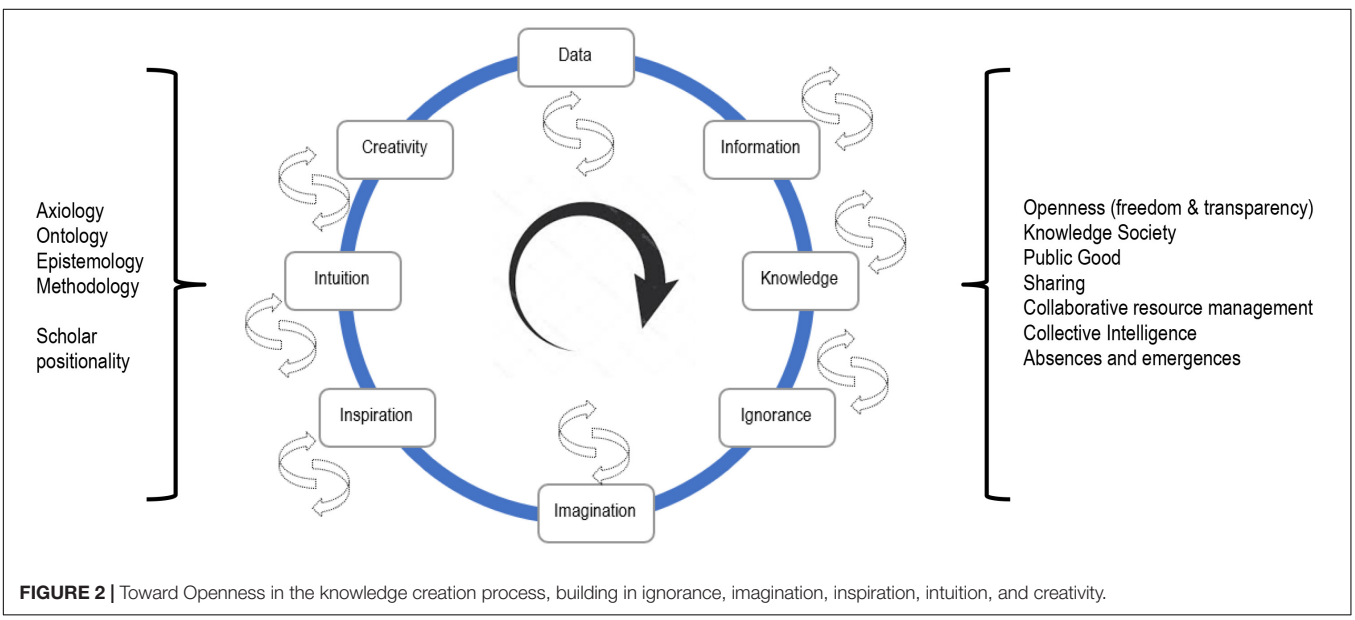

FIGURE 2 | Toward Openness in the knowledge creation process, building in ignorance, imagination, inspiration, intuition, and creativity.

inspiration, intuition, and creativity, which are "gifts" that need to be recovered.

The backdrop framework for this process (depicted on the sides) is twofold and relies on knowledge creation processes seen from the scientific-creation perspective (left) and the social perspective (right), as well as on a variety of key elements such as Openness, the knowledge society, and collective intelligence.

SUGGESTIONS FOR THE ADOPTION AND ADAPTATION OF OPEN PRACTICES

As with a design-based study that produces design principles (McKenney and Reeves, 2019), and following reviewers' comments, scholars can find here some conceptual tools and suggestions for potential adaptation. Indeed, one feature of OEP is making practices transparent so that others can adopt and adapt them and share them again as renewed practice. The breadth and depth of the practices will evolve with time.

Conceptual and positioning tools:

➢ *PCK (Shulman, 1987) and TPACK (Koehler et al., 2013) frameworks*

These frameworks help scholars to unpack the different types of knowledge that are involved in an area of study. Taking time to identify the pedagogical, content, technological, and combined types of knowledge (e.g., technological and pedagogical) is part of basic educational work. Conducting this work with colleagues and stakeholders from the discipline is worth the huge effort it demands. In addition to the current body of knowledge, scholars can draw on competencies frameworks, professional bodies' frameworks, knowledge that reside in communities, etc.

➢ *Inventory by Universidad-Internacional-de-La-Rioja (no date)*

This is a powerful starter tool for evaluating a teacher's OEP proficiency. Teachers can answer the inventory and then analyze the recommendations, find open courses to improve, read, etc., according to their needs. We recommend that this be done with some colleagues for community spirit, as this will help provide support when crossing thresholds (Meyer et al., 2010). Changing one's praxis touches on professional identity and requires teachers to have support.

➢ *Frameworks for developing inspiration, creativity, and imagination*

We do not yet know of any framework in this area, but tools are emerging. For instance, Henriksen et al. (2016) define creativity as a goal-driven process of developing solutions that are novel, effective, and whole. Henriksen (2018) lists seven core transdisciplinary skills involved in creativity: (1) observing; (2) patterning; (3) abstracting; (4) embodied thinking; (5) modeling; (6) play; and (7) synthesis. Taking time to reflect and apply these skills might be a good start. With regard to intuition, Figure 3 from Sipman et al. (2021) represents an interesting flow and the bibliography of the article is rich and can be an excellent resource.

As Einstein said, intuition, imagination, etc., are gifts. It is important to learn to include them in our scholarship, and so it is each scholar's responsibility to find creative ways to do it.

➢ *UNESCO (2021) recommendations for Open Science*

Teachers should read the recommendations carefully, evaluate what their country/institution already offers (e.g. roadmaps, services) and evaluate how they want to/are invited to change their practice. They can examine the relationship between Open Science and Open Education and seek coaching if they need it. A very inspiring example to scaffold a deep approach to Openness is that led by Ecuador under the name of buen vivir and buen conocer (Arauz, 2022).

➢ *Self-assessment tool for institutional open education practices*

This tool (Morgan et al., 2021) enables practitioners to understand where their institution stands in terms of Openness. Change agents may also want to approach decision-makers inviting them to reflect on the four following dimensions - advocacy, policy, leadership and institutional culture – mandate, reputation, centralization/decentralization – as a starting point for future action.

Suggestions:

➢ *Adopt a critical perspective and question the methods you are using.*

Whether in teaching or in research, we are usually "reproducing" models from different origins. Question your schema, methods, and practices. Where do they come from? Are you deliberately using them and do you agree with their values, epistemologies, etc.? In other words, avoid reproducing approaches "within institutional positivism" (Piron, 2019; Godrie et al., 2020) and question and document yourself until you reach schema, methods, and practices you are aligned with. This takes time, usually months or years.

➢ *Involve learners, communities, and stakeholders in the design of your course.*

Involve learners and other actors in a participatory way from the beginning (e.g., Funk, 2021) and have them choose the learning outcomes that best suit each of them. Depending on how you teach, it might be difficult to change your posture; the Eduvista scale, designed for introducing technology in one's teaching, might be helpful in this respect (Eduvista, 2010–2014).

➢ *Read scholars with experience in Openness.*

Educators who have practiced Openness are numerous. Among the most well-known are John Dewey, Maria Montessori, Paulo Freire, Ivan Illich, and Jacques Rancière.

➢ *Keep up to date with the literature on Open education.*

The literature on Open Educational Practices, Open Educational Resources, and more generally on Open Education is increasing as funded research in this area becomes more common. Try to find inspiring theories, examples, and case studies in this wealth of literature (e.g., Weller, 2014, 2020;

Inamorato dos Santos et al., 2016, 2017; Inamorato dos Santos, 2019; Jung, 2019; Bali et al., 2020a; Burgos, 2020; Farrow and Mathers, 2020; Farrow et al., 2020; García-Holgado et al., 2020; Pitt et al., 2020; Burgos and Berrada, 2021; Burgos et al., 2021; Class, 2021; Stracke et al., 2021; Tlili et al., 2021).

DISCUSSION AND CONCLUSION

In this reflective paper, we share three findings. The first is at the level of practice: we share an Open Educational Practice (Anderson, 2009; Cronin and Maclaren, 2018; Bali et al., 2020a; Huang et al., 2020; Werth and Williams, 2022) in research methods teaching at the master's level. More generally speaking, this practice opens up discussion for broader suggestions and conceptual tools for scholars willing to adopt Open Scholarship practices.

The second is at the level of reflection and concerns the history and philosophy of education. The findings from the interview and focus group (which encompass samples from both the French- and English-speaking worlds) echo the literature, specifically Rohstock (2015) observation that after World War II, supranational organizations dedicated to education replaced philosophy and history of education with so-called scientific approaches inspired from natural sciences. Reintroducing the former approaches is both called for and timely in the knowledge society.

The third is at the level of theory of knowledge. It concerns Openness in the knowledge creation process, considers knowledge as a common, and links it with scientific (i.e., epistemology, positionality) and social perspectives (i.e., collective intelligence) (Santos, 2016), incorporating factors such as ignorance (Innerarity, 2015a), inspiration, creativity, and imagination (Hayes, 2007).

We think that Open Education is a full-fledged construct that scholars, communities, and other stakeholders must learn about in depth. The public-health crisis has already forced societies to envisage life differently and prepared the ground to weave sustainable Open practices into education. As Peters et al. (2020, p. 1) write: "Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers, and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it."

The literature shows that over and over again, education and scholarship have been locked into the same roles, actions, and dichotomies—that is, openness vs control, qualitative vs quantitative, free vs paywall, etc.,—endorsed by different actors throughout history (e.g., the state, supranational organizations). Rather than taking a binary approach, that is, on/off (Baker, 2017, p. 132), would not it be more productive to acknowledge that openness coexists with closed/controlled education? A more sustainable approach might be to weave into the fabric of higher education the strong threads of Open Scholarship that have existed at least since the Middle Ages, in a way such that they can thrive in future. Imagination, inspiration, intuition, and creativity should be part of this fabric (Hayes, 2007) to support humanity and its ecosystem[2] (Pelluchon, 2021).

DATA AVAILABILITY STATEMENT

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found below: https://doi.org/10.26037/yareta:h7f5kymcnzco5l3xttmfooxwya.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

FUNDING

Some data have been collected within the SNSF grant https://data.snf.ch/grants/grant/190634, Open Education for Research Methodology Teaching across the Mediterranean, and this work is certainly a continuation of work conducted within that project.

ACKNOWLEDGMENTS

The author would like to acknowledge the participants mentioned in the interview and focus group: the francophone research methods teacher is Maryvonne Charmillot; and Melanie Nind and Deborah Collins are the researchers of the anglophone focus group. The author deeply thank them for our insightful conversations and for their open attitudes—that is, being named in the transcripts.

[2] In our efforts to build a collective intelligence, we might just discover something similar to a universal underlying *golden ratio* (https://en.wikipedia.org/wiki/Golden_ratio) *of Education and Openness*!

REFERENCES

Achour Rahmani, R., Basset, G., Buffet, L., Class, B., Cousin, S., Cretard, T., et al. (2021). *L'accès libre de la science ouverte et son impact sur les étudiant-es dans deux hautes écoles suisses*. Geneva: Université de Genève.

Aigrain, P. (2005). *Cause Commune: L'information entre Bien Commun et Propriété*. Paris: Fayard.

Anderson, T. (2009). *Open Scholarship Open Access Week*. Athabasca: Athabasca University.

Arauz, A. (2022). "Buen Conocer: socially oriented policies at the Ministry of Knowledge of Ecuador," in *Proceedings of the Open Education Global 2022*, Nantes.

Baker, F. W. (2017). An alternative approach: openness in education over the last 100 years. *TechTrends* 61, 130–140. doi: 10.1007/s11528-016-0095-7

Bali, M., Cronin, C., and Jhangiani, R. S. (2020b). Framing open educational practices from a social justice perspective. *J. Interact. Media Educ.* 2020:10. doi: 10.5334/jime.565

Bali, M., Cronin, C., Czerniewicz, L., DeRosa, R., and Jhangiani, R. (eds) (2020a). *Open at the Margins. Critical Perspectives on Open Education.* Montreal, QC: Rebus Community.

Beck, S., Bergenholtz, C., Bogers, M., Brasseur, T.-M., Conradsen, M. L., Di Marco, D., et al. (2020). The Open Innovation in Science research field: a collaborative conceptualisation approach. *Ind. Innov.* 29, 136–185. doi: 10.1080/13662716.2020.1792274

Benkler, Y. (2001). *Property, Commons, and the First Amendment: Towards a Core Common Infrastructure*. Available online at: https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/paper-benkler2.pdf (accessed June 18, 2022).

Blessinger, P., and Bliss, T. J. (eds) (2016). *Open Education. International Perspectives in Higher Education*. Cambridge: Open Book Publishers. doi: 10.11647/OBP.0103

Blummer, B., and Kenton, J. M. (2017). Learning Commons in Academic Libraries: Discussing Themes in the Literature from 2001 to the Present. *New Rev. Acad. Librariansh.* 23, 329–352. doi: 10.1080/13614533.2017.1366925

Bollier, D. (2004). Why we must talk about the information commons. *Law Libr. J.* 96, 267–282.

Bollier, D. (2014). *Think like a commoner: A short introduction to the life of the commons*. Gabriola, BC: New Society Publishers.

Boyer, E. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.

Bozkurt, A., Koseoglu, S., and Singh, L. (2019). An analysis of peer reviewed publications on openness in education in half a century: Trends and patterns in the open hemisphere. *Australas. J. Educ. Technol.* 35, 78–97. doi: 10.14742/ajet.4252

Burgos, D., and Berrada, K. (2021). Technology-enhanced learning, open science and global education. *Sustainability*. Available online at: https://www.mdpi.com/si/sustainability/Technology_Enhanced_Learning_Open_Science_Global_Education

Burgos, D. (ed.) (2020). *Radical Solutions and Open Science?: An Open Approach to Boost Higher Education*. Berlin: Springer Singapore, doi: 10.1007/978-981-15-4276-3

Burgos, D., Tlili, A., and Tabacco, A. (2021). "Education in a Crisis Context: Summary, Insights and Future," in *Radical Solutions for Education in a Crisis Context: COVID-19 as an Opportunity for Global Learning*, eds D. Burgos, A. Tlili, and A. Tabacco (Berlin: Springer Singapore), 3–10. doi: 10.1007/978-981-15-7869-4_23

Burkhardt, H., and Schoenfeld, A. H. (2003). Improving Educational Research:Toward a More Useful, More Influential, and Better-Funded Enterprise. *Educ. Res.* 32, 3–14. doi: 10.3102/0013189X032009003

Class, B. (2021). *Open Education*. Available Online at: https://edutechwiki.unige.ch/en/Open_Education (accessed June 18, 2022).

Class, B. (2022). "Open Education: Towards Epistemic Sustainability," in *International Conference on Computer Supported Education*, eds M. Cukurova, N. Rummel, D. Gillet, B. McLaren, and J. Uhomoibhi (Geneva: UNIGE), 646–653. doi: 10.5220/0000160000003182

Class, B., de Bruyne, M., Wuillemin, C., Donzé, D., and Claivaz, J.-B. (2021). Towards open science for the qualitative researcher: from a positivist to an open interpretation. *Int. J. Qual. Methods* 20, 1–15. doi: 10.1177/16094069211034641

Class, B., and Schneider, D. (no date). *Manuel de Recherche en Technologie Éducative*. Available online at: http://edutechwiki.unige.ch/fr/Manuel_de_recherche_en_technologie_%C3%A9ducative (accessed June 18, 2022).

Clinton-Lisell, V. (2021). Open pedagogy: a systematic review of empirical findings. *J. Learn. Dev.* 8, 255–268.

Cronin, C. M. G., and Maclaren, I. (2018). Conceptualising OEP: a review of theoretical and empirical literature in open educational practices. *Open Praxis* 10, 127–143. doi: 10.5944/openpraxis.10.2.825

Culham, T. (2015). Reuniting Virtue and Knowledge. *J. Philos. Educ.* 49, 294–310. doi: 10.1111/1467-9752.12142

Dane, E., and Pratt, M. G. (2009). "Conceptualizing and Measuring Intuition: A Review of Recent Trends," in *International Review of Industrial and Organizational Psychology*, eds G. P. Hodgkinson, and J. K. Ford (Hoboken, NJ: Wiley), 1–40. doi: 10.1002/9780470745267.ch1

David, P. A., and Foray, D. (2003). Economic fundamentals of the knowledge society. *Policy Fut. Educ.* 1, 20–49. doi: 10.2304/pfie.2003.1.1.7

Deimann, M. (2020). "The (Post-)Digital University," in *Redesigning Organizations: Concepts for the Connected Society*, ed. D. Feldner (Berlin: Springer International Publishing), 357–364. doi: 10.1007/978-3-030-27957-8_27

Dewey, J. (1937). *Democracy and Education: An Introduction to the Philosophy of Education*. London: Macmillan.

DigitalPublicGoodsAlliance (2021). *Digital Public Goods Standard*. Available online at: https://digitalpublicgoods.net/standard/ (accessed June 18, 2022).

Dijksterhuis, A. (2007). *Het slimme onbewuste: Denken met gevoel [the smart unconscious: Thinking with affect]*. Amsterdam: Bert Bakker.

Dörfler, V., and Eden, C. (2014). "Research on intuition using intuition," in *Handbook of research methods on intuition*, ed. M. Sinclair (Cheltenham: Edward Elgar), 264–276. doi: 10.4337/9781782545996.00031

Dupré, L. (1993). The common good and the open society. *Rev. Polit.* 55, 687–712. doi: 10.1017/S0034670500018052

Earley, M. (2014). A synthesis of the literature on research methods education. *Teach. High. Educ.* 19, 242–253. doi: 10.1080/13562517.2013.860105

Eduvista (2010–2014). *Innovation Maturity Model*. Available online at: http://files.eun.org/fcl/eduvista/eduvista-tool-2p1.pdf (accessed May 25, 2014).

Farmer, L. (2019). "Cross-Cultural Aspects of Collective Intelligence Online," in *Handbook of Research on Cross-Cultural Online Learning in Higher Education*, eds J. Keengwe and K. Kungu (Hershey, PA: IGI Global). doi: 10.4018/978-1-5225-8286-1.ch001

Farrow, R., Iniesto, F., Weller, M., and Pitt, R. (2020). *The GO-GN Research Methods Handbook*. Milton Keynes: Open Education Research Hub.

Farrow, R., and Mathers, B. (2020). Conceptualising Research Methodology for Doctoral Researchers in Open Education (with penguins). *Int. J. Manage. Appl. Res.* 7, 349–359. doi: 10.18646/2056.73.20-025

Freire, P. (1994). *Pedagogy of the oppressed*. Anderson, IN: Continuum.

Funk, J. (2021). Caring in Practice, Caring for Knowledge. *J. Interact. Media Educ.* 2021:11. doi: 10.5334/jime.648

García-Holgado, A., García-Peñalvo, F. J., Vázquez-Ingelmo, A., Nascimbeni, F., Padilla-Zea, N., Burgos, D., et al. (2020). *Handbook of successful open teaching practices*. Anderson, IN: OpenGame Consortium.

Garner, M., Wagner, M., and Kawulich, B. (eds) (2009). *Teaching Research Methods in the Social Sciences*. Milton Park: Routledge, doi: 10.4324/9781315611921

Godrie, B., Boucher, M., Bissonnette, S., Chaput, P., Flores, J., Dupéré, S., et al. (2020). Epistemic injustices and participatory research: A research agenda at the crossroads of university and community. *Gateways Int. J. Commun. Res. Engage.* 13:1. doi: 10.5130/ijcre.v13i1.6703

Haller, T., Breu, T., De Moor, T., Rohr, C., and Znoj, H. (eds) (2019). *The Commons in a Glocal World: Global Connections and Local Responses*. Milton Park: Routledge, doi: 10.4324/9781351050982

Haller, T., Liechti, K., Stuber, M., Viallon, F.-X., and Wunderli, R. (eds) (2021). *Balancing the Commons in Switzerland: Institutional Transformations and Sustainable Innovations*. Milton Park: Routledge, doi: 10.4324/9781003043263

Hayes, D. (2007). What Einstein can teach us about education. *Education* 35, 143–154. doi: 10.1080/03004270701311986

Henriksen, D. (2018). *The 7 Transdisciplinary Cognitive Skills for Creative Education*. Berlin: Springer. doi: 10.1007/978-3-319-59545-0

Henriksen, D., Mishra, P., and Fisser, P. (2016). Infusing Creativity and Technology in 21st Century Education: A Systemic View for Change. *J. Educ. Technol. Soc.* 19, 27–37.

Hess, C., and Ostrom, E. (2007). "Introduction: An Overview of the Knowledge Commons," in *Understanding Knowledge as a Commons - From Theory to Practice*, eds C. Hess and E. Ostrom (Cambridge: Cambridge University Press). doi: 10.7551/mitpress/6980.001.0001

Hofstetter, R., and Schneuwly, B. (2013). The International Bureau of Education (1925–1968): a platform for designing a 'chart of world aspirations for education'. *Eur. Educ. Res. J.* 12, 215–230. doi: 10.2304/eerj.2013.12.2.215

Huang, R., Tlili, A., Chang, T.-W., Zhang, X., Nascimbeni, F., and Burgos, D. (2020). Disrupted classes, undisrupted learning during COVID-19 outbreak in China: application of open educational practices and resources. *Smart Learn. Environ.* 7:19. doi: 10.1186/s40561-020-00125-8

Hubball, H., and Clarke, A. (2010). Diverse Methodological Approaches and Considerations for SoTL in Higher Education. *Can. J. Scholarsh. Teach. Learn.* 1:4, doi: 10.5206/cjsotl-rcacea.2010.1.2

Inamorato dos Santos, A., Punie, Y., and Castaño Muñoz, J. (2016). *Opening up education. A support framework for higher education institutions*. Available online at: https://publications.jrc.ec.europa.eu/repository/handle/JRC101436 (accessed June 18, 2022).

Inamorato dos Santos, A. (2019). *Practical Guidelines on Open Education for Academics Modernising higher education via open educational practices (based on the OpenEdu Framework)*. Available online at: https://publications.jrc.ec.europa.eu/repository/handle/JRC115663 (accessed June 18, 2022).

Inamorato dos Santos, A., Nascimbeni, F., Bacsich, P., Atenas, J., Aceto, S., Burgos, D., et al. (2017). *Policy Approaches to Open Education.* Available online at: https://publications.jrc.ec.europa.eu/repository/bitstream/JRC107713/jrc107713_jrc107713_policy_approaches_to_open_education.pdf (accessed June 18, 2022).

Innerarity, D. (2015b). *Démocratie et société de la connaissance*. Grenoble: Presses universitaires de Grenoble.

Innerarity, D. (2015a). "La société de la connaissance et l'ignorance," in *Démocratie et société de la connaissance*, D. Innerarity, and S. Champeau (Grenoble: Presses universitaires de Grenoble).

Jonnaert, P., Depover, C., and Malu, R. (2020). *Curriculum et situations: Un cadre méthodologique pour le développement de programmes éducatifs contextualisés*. Brussels: De Boeck.

Jung, I. (ed.) (2019). *Open and Distance Education Theory Revisited*. Berlin: Springer. doi: 10.1007/978-981-13-7740-2

Kilburn, D., Nind, M., and Wiles, R. (2014). Learning as Researchers and Teachers: The Development of a Pedagogical Culture for Social Science Research Methods? *Br. J. Educ. Stud.* 62, 191–207. doi: 10.1080/00071005.2014.918576

Koehler, M. J., Mishra, P., and Cain, W. (2013). What Is Technological Pedagogical Content Knowledge (TPACK)? *J. Educ.* 193, 13–19. doi: 10.1177/002205741319300303

Laot, F., and Rogers, R. (2015). "Question éducative et recherche dans l'après Seconde Guerre mondiale," in *Les Sciences de l'éducation. Emergence d'un champ de recherche dans l'après-guerre*, eds F. Laot and R. Rogers (Rennes: Presses universitaires de Rennes). doi: 10.4000/books.pur.94440

Laurillard, D. (2002). *Rethinking University Teaching. A conversational framework for the effective use of learning technologies*. Milton Park: Routledge. doi: 10.4324/9780203304846

LePortailDesCommuns (no date). *Qu'est-ce qu'un bien commun?* Grenoble: LePortailDesCommuns.

Lewthwaite, S., and Nind, M. (2016). Teaching Research Methods in the Social Sciences: Expert Perspectives on Pedagogy and Practice. *Br. J. Educ. Stud. Cont. Educ.* 64, 413–430. doi: 10.1080/00071005.2016.1197882

Machlup, F. (1983). "Semantic Quirks in Studies of Information," in *The Study of Information: Interdisciplinary Message*, eds F. Machlup and U. Mansfield (Hoboken, NJ: Wiley).

McKenney, S., and Reeves, T. (2019). *Conducting Educational Design Research*, 2nd Edn. Milton Park: Routledge, doi: 10.4324/9781315105642

Meyer, J., Land, R., and Baillie, C. (2010). *Threshold Concepts and Transformational Learning*, Vol. 42. Rotterdam: Sense Publishers. doi: 10.1163/9789460912078

Morgan, T., Childs, E., Hendricks, C., Harrison, M., DeVries, I., and Jhangiani, R. (2021). How are we doing with open education practice initiatives? Applying an institutional self-assessment tool in five higher education institutions. *Int. Rev. Res. Open Distrib. Learn.* 22, 125–140. doi: 10.19173/irrodl.v22i4.5745

Morozov, E. (2016). *Tech titans are busy privatising our data*. Available online at: https://www.theguardian.com/commentisfree/2016/apr/24/the-new-feudalism-silicon-valley-overlords-advertising-necessary-evil (accessed June 18, 2022).

Nind, M. (2020). A new application for the concept of pedagogical content knowledge: teaching advanced social science research methods. *Oxf. Rev. Educ.* 46, 185–201. doi: 10.1080/03054985.2019.1644996

Nind, M., and Lewthwaite, S. (2018). Methods that teach: developing pedagogic research methods, developing pedagogy. *Int. J. Res. Method Educ.* 41, 398–410. doi: 10.1080/1743727X.2018.1427057

Nordstrom, K., and Korpelainen, P. (2011). Creativity and inspiration for problem solving in engineering education. *Teach. High. Educ.* 16, 439–450. doi: 10.1080/13562517.2011.560379

OpenMed (2015). *Opening up Education in South-Mediterranean countries*. Available online at: https://openmedproject.eu/ (accessed June 18, 2022).

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press, doi: 10.1017/CBO9780511807763

Paskevicius, M., and Irvine, V. (2019). Open Education and Learning Design: Open Pedagogy in Praxis. *J. Interact. Media Educ.* 1:10. doi: 10.5334/jime.512

Pelluchon, C. (2021). *Les Lumières à l'âge du vivant*. Paris: Seuil.

Peter, S., and Deimann, M. (2013). On the role of openness in education: A historical reconstruction. *Open Praxis* 5, 7–14. doi: 10.5944/openpraxis.5.1.23

Peters, M. A., Rizvi, F., McCulloch, G., Gibbs, P., Gorur, R., Hong, M., et al. (2020). Reimagining the new pedagogical possibilities for universities post-Covid-19. *Educ. Philos. Theory* 54, 717–760. doi: 10.1080/00131857.2020.1777655

Piron, F. (2019). "L'amoralité du positivisme institutionnel. L'épistémologie du lien comme résistance," in *Et si la recherche scientifique ne pouvait pas être neutre?*, eds L. Brière, M. Lieutenant-Gosselin, and F. Piron (Paris: Éditions science et bien commun).

Pitt, R., Jordan, K., de los Arcos, B., Farrow, R., and Weller, M. (2020). Supporting open educational practices through open textbooks. *Dis. Educ.* 41, 303–318. doi: 10.1080/01587919.2020.1757411

Pretz, J. (2011). "Types of intuition: Inferential and holistic," in *Handbook of intuition research*, ed. M. Sinclair (Cheltenham: Edward Elgar), 17–27.

Ramirez-Montoya, M. S. (2020). Challenges for open education with educational innovation: a systematic literature review. *Sustainability* 12:7053. doi: 10.3390/su12177053

Ramjoué, C. (2015). Towards Open Science: The vision of the European Commission. *Inf. Serv. Use* 35, 167–170. doi: 10.3233/ISU-150777

Reader, J., Jandriæ, P., Peters, M. A., Barnett, R., Garbowski, M., Lipińska, V., et al. (2021). Enchantment - Disenchantment-Re-Enchantment: Postdigital Relationships between Science, Philosophy, and Religion. *Postdigit. Sci. Educ.* 3, 934–965. doi: 10.1007/s42438-020-00133-4

Reeves, T. C. (1999). *A research agenda for interactive learning in the new millennium*. New York, NY: Ed Media and Innovate Learning.

Rohstock, A. (2015). "Pour une recherche scientifique en éducation? Une idée internationale et son appropriation locale en Allemagne de l'Ouest au moment de la guerre froide," in *Les Sciences de l'éducation. Emergence d'un champ de recherche dans l'après-guerre*, eds F. Laot and R. Rogers (Rennes: Presses universitaires de Rennes). doi: 10.4000/books.pur.94449

Rozas, D., Tenorio-Fornés, A., Díaz-Molina, S., and Hassan, S. (2021). When Ostrom Meets Blockchain: Exploring the Potentials of Blockchain for Commons Governance. *Sage Open* 11:21582440211002526. doi: 10.1177/21582440211002526

Sanfilippo, M., Frischmann, B., and Standburg, K. (2018). Privacy as Commons: Case Evaluation Through the Governing Knowledge Commons Framework. *J. Inf. Policy* 8, 116–166. doi: 10.5325/jinfopoli.8.1.0116

Santos, B. D. S. (2016). *Epistémologies du Sud?: mouvements citoyens et polémique sur la science*. Bilbao: Desclée de Brouwer.

Santos, B. D. S. (2021). *Decolonising the University?: the Challenge of Deep Cognitive Justice*. Cambridge: Cambridge Scholars Publishing.

Savin-Baden, M. (Accepted). The death of data interpretation and throwing sheep in a postdigital age. *Educ. Ouverte Libre Open Educ.*

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educ. Rev.* 57, 1–22. doi: 10.17763/haer.57.1.j463w79r56455411

Sinclair, M. (2011). "An integrated framework of intuition," in *Handbook of intuition research*, ed. M. Sinclair (Cheltenham: Edward Elgar). doi: 10.4337/9780857936370

Sipman, G., Martens, R., Thölke, J., and McKenney, S. (2021). Professional development focused on intuition can enhance teacher pedagogical tact. *Teach. Teach. Educ.* 106:103442. doi: 10.1016/j.tate.2021.103442

Stracke, C., Bozkurt, A., Burgos, D., Mason, J., Ossiannilsson, E., Sharma, R. C., et al. (2021). *Global Study on Open Education and Open Science: Practices, use Cases and Potentials During the COVID-19 Pandemic and Beyond.* Open Education Global. doi: 10.5281/zenodo.5546183

Stuermer, M., Abu-Tayeh, G., and Myrach, T. (2017). Digital sustainability: basic conditions for sustainable digital artifacts and their ecosystems. *Sustainability Science* 12, 247–262. doi: 10.1007/s11625-016-0412-2

Teddlie, C., and Tashakkori, A. (2009). *Foundations of Mixed Methods Research. Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks, CA: Sage. doi: 10.4135/9781483348858.n9

Tlili, A., Burgos, D., Huang, R., Mishra, S., Sharma, R. C., and Bozkurt, A. (2021). An Analysis of Peer-Reviewed Publications on Open Educational Practices (OEP) from 2007 to 2020: A Bibliometric Mapping Analysis. *Sustainability* 13:10798. doi: 10.3390/su131910798

UNESCO (2021). *Recommendation on Open Science*. Paris: UNESCO.

Universidad-Internacional-de-La-Rioja (no date). *Open Educators Factory*. La Rioja: Universidad-Internacional-de-La-Rioja.

Univ-Ouverte@Maroc (2021). *Programme de formation internationale à l'Education Ouverte*. Casablanca: Univ-Ouverte@Maroc.

Usher, R. (2018). "Experiential learning," in *Contemporary theories of learning*, 2 Edn, ed. K. Illeris (Milton Park: Routledge), 189–203. doi: 10.4324/9781315147277-14

Usher, R., Bryant, I., and Johnston, R. (1997). *Adult education and the postmodern challenge: Learning beyond the limits*. Milton Park: Routledge.

Van der Maren, J.-M., Brodeur, M., Gervais, F., Gilles, J.-L., and Voz, G. (2019). *Référentiel pour la formation des chercheuses et des chercheurs francophones en éducation*. France: Association Orfée.

Wagner, C., Garner, M., and Kawulich, B. (2011). The state of the art of teaching research methods in the social sciences: towards a pedagogical culture. *Stud. High. Educ.* 36, 75–88. doi: 10.1080/03075070903452594

Wagner, C., Kawulich, B., and Garner, M. (2019). A Mixed Research Synthesis of Literature on Teaching Qualitative Research Methods. *Sage Open* 9:2158244019861488. doi: 10.1177/2158244019861488

Waks, L. J. (2006). "Intuition in Education: Teaching and Learning Without Thinking," in *Philosophy of Education Archive* ed. D. Vokey (Baltimore, MD: Johns Hopkins University), 379–388.

Weller, M. (2014). *The Battle for Open: How Openness Won and Why it Doesn't Feel Like Victory*. London: Ubiquity Press, doi: 10.5334/bam

Weller, M. (2020). "Open and Free Access to Education for All," in *Radical Solutions and Open Science: An Open Approach to Boost Higher Education*, ed. D. Burgos (Berlin: Springer Singapore), 1–15. doi: 10.1007/978-981-15-4276-3_1

Weller, M., Jordan, K., DeVries, I., and Rolfe, V. (2018). Mapping the open education landscape: citation network analysis of historical open and distance education research. *Open Praxis* 10, 109–126. doi: 10.5944/openpraxis.10.2.822

Werth, E., and Williams, K. (2022). The why of open pedagogy: a value-first conceptualization for enhancing instructor praxis. *Smart Learn. Environ.* 9:10. doi: 10.1186/s40561-022-00191-0

Conflict of Interest: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.