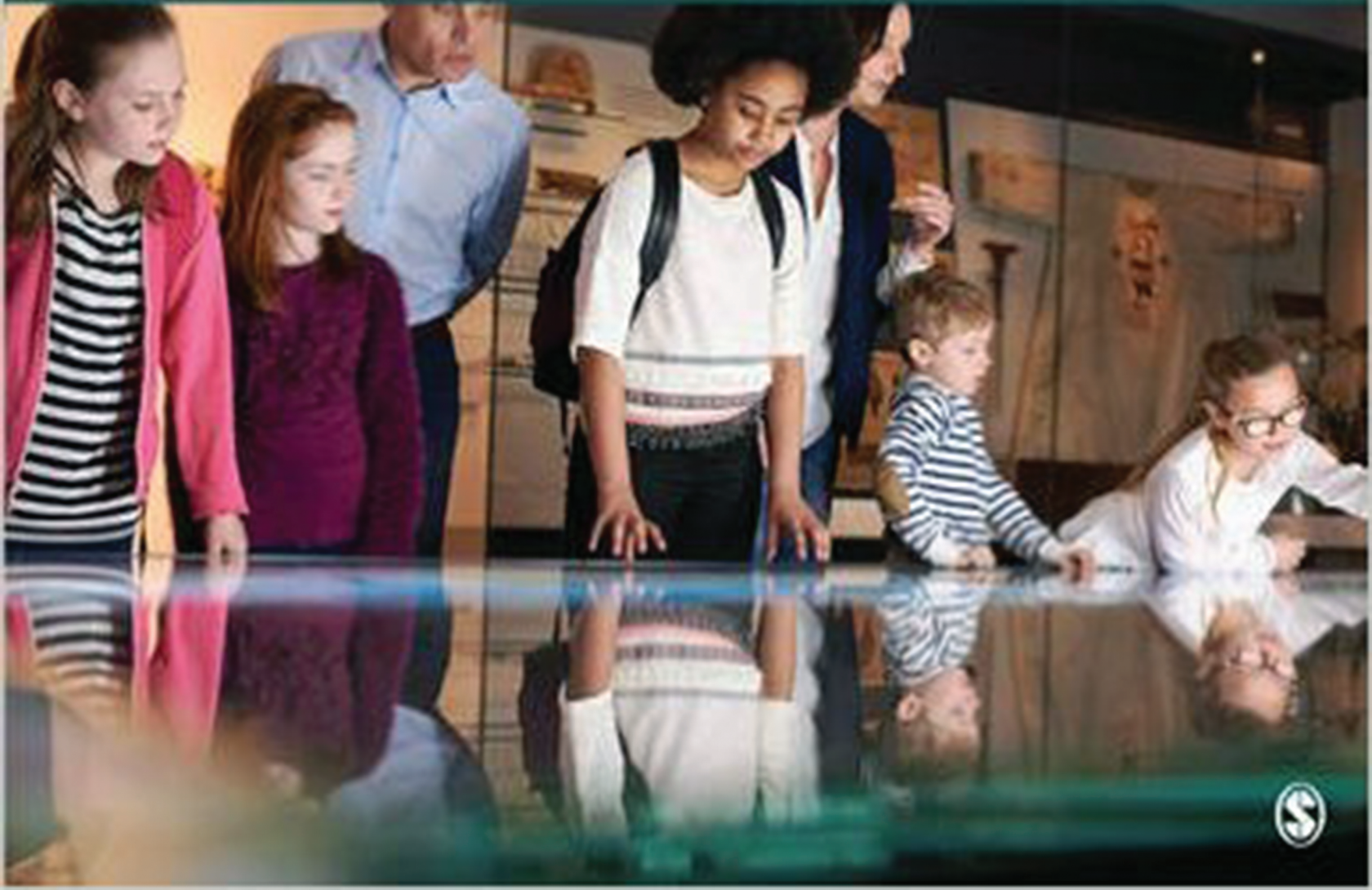
The SAGE Encyclopedia of OUT-OF-SCHOOL LEARNING

Kylie Peppler
Editor



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See also Connected Learning; Gaming and Affinity Spaces; Identity, Theories of; Positive Youth Development; Situated Learning; Sociocultural Theory

Further Readings

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Electronic Portfolios

Electronic portfolios (e-portfolios) are digital collections of captured work or work in progress that are curated and usually shared online. They showcase creative work and learning experiences of individuals or communities in the form of text or multimedia files across areas of interests. Apart from functioning as a showcase that evidences skills, knowledge, and experiences, e-portfolios can also serve as platforms for learners to express themselves, to build communities by sharing work over time, and to bolster college or job applications. For schools, e-portfolios promise to make learning visible, to revamp assessment, and to increase responsibility over personal learning practices.

School e-portfolio practices do not directly translate to out-of-school learning, especially interest-driven learning settings that are collaborative rather than individualistic, that encompass digital and tangible projects, and where concrete learning outcomes are shaped over time as opposed to being predefined. New practices and initiatives aim to fulfill the promise of e-portfolios in order to make learning relevant across settings and to broaden access to higher education and job opportunities as learners capture, narrate, and share their experiences in out-of-school learning settings. This entry further discusses the use of e-portfolios in schools, how e-portfolios can be used in out-of-school learning environments and considerations for their use there, and how some out-of-school learning spaces are now using e-portfolios.

Electronic Portfolios for In-School Learning

The current discourse around portfolios is based on the experiences of the Arts Propel initiative of Project Zero at Harvard University Graduate School of Education in the 1980s. The initiative framed portfolios as a way to make learning visible by presenting examples of student work that could illustrate the richness of students' experiences, knowledge, and skills beyond numeric grades. Since then, e-portfolios have been explored as a way to reframe assessment by bringing instruction and assessment closer together, especially in school learning. To achieve this, portfolio practices are designed based on particular standards and learning outcomes to make it possible to assess the showcased knowledge and skills. The focus is on showcasing individual students' knowledge and skills with the aim of comparing and contrasting best efforts. The best efforts are often considered in relation to rubrics created to effectively meet specific curricular outcomes that were defined in advance.

Linking examples of students' experiences to the context in which they were produced, for example, instructions and planned learning outcomes, can bring about tight coupling between instruction and assessment. To strengthen these connections even further, e-portfolio practices have included links to examples of students' work, student–teacher conferences, and student self-assessment practices. Here, students reflect on their work and portfolio entries in collaboration with teachers with the aim of producing better portfolio entries and increasing ownership and responsibility in learning. More recent initiatives, such as the College Board and the Project Lead the Way project, frame portfolios as vital to foster interest in science, technology, engineering, and math fields. Other schools have

implemented schoolwide portfolio initiatives across all grade levels and subject areas.

Promises and Considerations

The relevance of capturing learning experiences in out-of-school settings through e-portfolios is increasing as portfolios are becoming important parts of job applications and higher education admissions processes. Portfolios promise to broaden access to higher education and professional opportunities. E-portfolios in out-of-school learning settings, in particular those spaces that support interest-driven learning, promise to capture the experiences of learners over time, to acknowledge that learning is happening, to share their work with different audiences, and to make learning relevant across learning spaces. Apart from broadening access to opportunities beyond one particular learning space, capturing and sharing of experiences can make relationships to knowledge tangible and make personal processes of learning visible to the learner as well as to others who are viewing the e-portfolios. Furthermore, the capturing of work in progress can engender constructive feedback, express personal narratives of efforts, highlight struggles, and trigger reflections.

In contrast to school learning spaces, creating e-portfolios for out-of-school learning requires accommodating the unique characteristics of these contexts. First, out-of-school learning can happen anywhere and in multiple locations. This means that ways to capture learning experiences need to be mobile. Out-of-school learning is often interest driven, so documentation needs to be integrated into the engagement in order to avoid disruption while still capturing essential data as evidence of learning that can be returned to much later in life. Second, as opposed to contrasting individuals' best efforts, sharing of work outside school is motivated by contributing to and building communities. Interactions among learners drive insights forward, and out-of-school e-portfolios that aim to capture evidence of rich learning need to consider collaborative learning and capturing practices. Third, concrete learning outcomes can develop over time as opposed to being categorically defined at the beginning of an experience. This means that e-portfolios outside school have to link to different representations of context than school e-portfolios would, in order to effectively communicate the knowledge and skills learners gained to external parties who were not part of the learning experience. Badges with metadata that are issued and recognized by industry and academic institutions can be seen as one way to add context to portfolio entries.

Electronic Portfolio Practices for Out-of-School Learning

E-portfolio platforms for out-of-school learning work best when they allow learners to control the content and process of capturing and to maintain ownership over their curation process across settings over a lifetime. Examples of this include providing learners with personal accounts and websites that are not tied to systems owned by one organization. To alert learners to capture their work, some out-of-school learning spaces (e.g., libraries and museums) use strategies such as strategic placement of audiovisual prompts, support for merging of digital and nondigital practices, providing access to work outside their space through file-sharing practices, using available and accessible digital media tools (e.g., blogs and tagging features), and encouraging adults to model documentation practices.

Other practices leverage the rich collection of physical artifacts as evidence of learning through the learning space. The online tool Build in Progress is a website that was developed at the Massachusetts Institute of Technology's Media Lab for learners to capture the evolution of their work. A tree structure visualization allows learners to seamlessly document projects while they are being created and to illustrate iterations, dead-ends, and productive steps along the way to represent personal and unique learning journeys. Other setups curate individual portfolios of learners who are part of a specific learning community into one shared space. One example of this is the youth-serving makerspace, Digital Harbor Foundation, where the last post of each youth in the space is automatically pulled into and displayed on a shared website, from where each individual portfolio is accessible. Through these kinds of platforms, viewers can compare and contrast the ongoing work of each individual learner and get a better understanding of the kinds of activities that are

currently going on in the community. Tools for carefully monitoring activities or growth development and tools that let learners pull together work across different media platforms are under development. These tools are aimed for learners to decide which posts to share with whom and when and to create distinctive unified narratives of their work for different audiences.

Anna Keune

See also Assessments and Assessment Issues; Badges; Blogs and Blogging; Curation

Further Readings

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Embodiment and Mathematics Learning

Developed in intellectual disciplines as diverse as philosophy, linguistics, robotics, kinesiology, and cognitive psychology, embodiment is a relatively new paradigm for the field of learning sciences. This entry discusses the theory of embodiment, focusing on how the theory is informing new directions of research and pedagogy in the particular domain of mathematics education. More specifically, the entry addresses an enduring research problem in the learning sciences pertaining to the role of embodied action in the learning and teaching of mathematical concepts.

Theory

Brains are material organs. Minds are another matter. The mind is grounded in the brain but extends beyond it to the body, including our hands, and beyond the body to encompass anything we work and think with—media such as pencil and paper, computational devices such as a calculator, tools and instruments such as lathe or clarinet, procedural forms such as a recipe for bran muffins or an algorithm for quadratic equations, and even on to other people who collaborate with us in getting things done, whether or not these people are copresent in location or time. Language itself extends the mind, equipping and shaping it with civilization's legacy. All these physical, cultural, and human resources collectively participate in facilitating the enactment of complex social activities, such as the mundane cultural practices of design, manufacture, and logistics. In a sense, any human thought or action is distributed beyond our corporeal self and situated in the world, even if we close our eyes and do not move, because we are then simulating our skilled performances with numerous forms we have internalized so as to "relive" our experiences, reflect on them, and plan future actions.

Take counting, for example. We can count sheep with our eyes shut, but then again the vocabulary of counting, the procedure of counting, and even the very idea of counting originated from action in the world with other people. In fact, scanning our brain as we count sheep would show the same areas lighting up as when we see real sheep, voice the counting words, and perhaps gesture toward the sheep. The very same cerebral faculties operate whether we are seeing or imagining, and this neural overlap is near complete under hypnosis. Whether we perceive real or imaginary objects, all these are the mind's constructions—in either case, we can perceive only what we know.

From an evolutionary perspective, imagination sprouted from sensorimotor cerebral faculties—short of enacting external motion, the cognitive activity of imagining coopts the sensorimotor neural system. Language, or more generally multimodal communication that includes gesture, expands imagination into the social sphere, enabling multiple agents to confer by imagining together with sufficient overlaps of reference.

Still, one might object that imagination is all in the brain—imagining is perhaps simulating worldly experience, but nevertheless, it is only in the head. But say we are counting objects on our fingers. We are using our own bodily material—a set of 10 discrete extremities—to facilitate the execution of a task. The fingers serve as a medium for encoding