# Long-Tail Learning: A Unique Opportunity for CSCL?

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**The Long Tail.** The phrase *"The Long Tail"* was first coined by Chris Anderson in an October 2004 *Wired magazine* article to describe how our culture and economy is increasingly shifting away from a focus on a relatively small number of "hits" (mainstream products and markets) at the head of the demand curve toward a huge number of niches in the tail (as exemplified by companies such as Amazon or Netflix, that sell a large number of unique items in relatively small quantities).

**Goal of the Symposium.** The goal of the symposium is to present initial components of an analytical framework and an analysis of success stories in order to launch a discussion of how the participatory Web 2.0 provides *unique possibilities for an educational interpretation of the "Long Tail"* thereby creating new feasibility spaces for collaborative learning.

**A Long-Tail Interpretation for Collaborative Learning.** Long-tail learning refers at least to two aspects: (1) learning about exotic topics outside the mainstream education curriculum, and (2) the opportunity to communicate with people who share similar interests somewhere in the world on a regular basis. Long-tail learning represents a *fundamentally different objective* to cultural literacy [Hirsch, 1996]. The web gives children and adults the ability to pursue topics they are particularly interested and feel passionate about including topics such as quasars, Chinese history, Japanese anime, cuneiform writing, Viking ships, and casino games to name just a few. These are topics learners never encounter in school unless they pursue them later in college. Nor are they likely to find people among their acquaintances who share their interests and would study the topics together with them. Such exotic topics remained as lone pursuits for most people until the web came along. The long-tail of learning opportunities is contributing to the emergence of expert teens referred to as "pro-ams", amateur experts or hobbyists [Leadbeater & Miller, 2008] who have developed specialized knowledge about topics of interest using digital media [Anderson, 2006].

**Exploiting the Creativity Potential of Long Tail Learning and Education.** The Long Tail framework was developed primarily in the context of web-based businesses. It has fundamental implications for the producers of content, especially those whose products could not find a place in the *industrialized information economy* [Benkler, 2006]. The symposium will explore, support, and assess a learning and discovery interpretation of the Long Tail [Brown & Adler, 2008]. Table 1 shows a reinterpretation and mapping between the two perspectives.

Table 1: A Reinterpretation and Mapping of the Long Tail for Learning and Discovery

| Web-Based Businesses | Learning and Discovery |
|---|---|
| unlimited shelf-space | unlimited knowledge |
| megahits | core curriculum |
| niche markets | passion for unique topics |
| hybrid model of distribution | hybrid model of learning and discovery |
| many interesting books, movies, songs will not enter the traditional marketplace | many interesting topics and ideas will not be taught in schools and universities |

The web enables long-tail learning in a variety of ways by supporting participation cultures among the members of communities interested in exotic topics. Novices can lurk in these communities to pick up the issues, techniques, and jargon that sustain the communities. When learners develop expertise,

they can display their work or their thoughts to the community and get feedback from the community to guide their further development. Finished products might later get posted on YouTube or Epinions, where the world might see their work.

Another way the web enables long-tail learning derives from the plethora of information available on the web. When learners go into most libraries, they are likely to find a very limited amount of information on any exotic topic, the information they may find is very likely out of date for most hot topics being investigated, and there is rarely documentation on the techniques the community of practice around the topic are using. Based on the fact that the web is both constantly evolving and actively filling up all the long tails of knowledge about every conceivable topic, it can support long tail learning in a way not even the largest library in the world can support. In addition, the web can provide expert audit trails, active simulations, and tutorials on topics that support learning well beyond what learners can glean from books.

The symposium will include a set of case studies that illustrate long-tail learning phenomena. Cases will include online communities serving niche interests as well as portraits of learners that show how online and co-located communities can offer synergistic learning opportunities. The symposium will explore and debate *with a focus on audience participation* important questions focused on long-tail learning including:

- *Questions to be explored and debated*
    o How can we envision a productive synergy between the head and the tail and create mechanisms to support and exploit this synergy?
    o Do we want to keep requiring everyone to learn the same thing in school rather than pursuing their deep interests?
    o Do we want to keep extending the years of schooling to encompass the expanding knowledge base?
    o Do we want to support kids to pursue more deeply the topics of interest to them — and if so, how?
    o How does access to tools and learning resources influence long tail learning?
    o How can the passion associated with topics from the tail be integrated with important basic knowledge and skills from the head that they successfully complement each other?

## Contributors and Presentations

**Allan Collins (Northwestern University)** will describe how new technologies create learning opportunities that challenge traditional schools and colleges [Collins & Halverson, 2008]. These new learning niches enable people of all ages to pursue learning on their own terms, pursuing their particular goals and interests, and taking responsibility for their own learning. Fostering this kind of long tail learning requires a rethinking of education. This rethinking of fundamental aspects of learning will take many years to fully penetrate our understanding of the world and the society around us.

**Gerhard Fischer (University of Colorado, Boulder)** will explore and critically assess long-tail learning by describing (1) *conceptual frameworks* (including: meta-design, social creativity, and courses-as-seeds [Fischer, 2007]), (2) *models* (including: seeding, evolutionary growth and reseeding (SER) and authoritative versus democratic models of knowledge accumulation, sharing, and dissemination), and (3) *social-technical environments* (including: the "SketchUp/3D Warehouse/Google Earth" domain, in which participants worldwide collaborate to create 3D models and support environments for distributed communities such as open source software, the SAP Developer Network community, and the research community in Creativity and IT). He will discuss the challenges associated with the fundamental transformation from a consumer culture to a *participation culture*.

**Brigid Barron (Stanford University)** will share examples of long tail learning phenomenon based on case study research with adolescents in the Silicon Valley region of California, the south side of Chicago, and the small island country of Bermuda. She will share a learning ecology framework

[Barron, 2006] that highlights the importance of understanding how access to learning resources, sources of inspiration, and tools shapes participation in digital media activities.

**Chen-Chung Liu (National Central University, Taiwan)** will describe technology-enabled long-tail learning phenomena occurred in Taiwan. The school for all projects will be presented to reflect why and how 4095 volunteers, adults and children, acted as teachers in a virtual community and taught various topics of their personal interests . The dramatically increasing amount of non-mainstream knowledge, such as the courseware in the school for all, indicates a gap between the world we live in and the formal education, where the latter focuses mainly on limited amount of knowledge.  He will discuss the adjustments he has made based on practices in higher education to address the long-tail phenomenon [Liu, 2008].

**Hans Spada (University of Freiburg, Germany)** will discuss the new relation of science and the general public and give an example of long-tail learning. In recent years a great variety of science related information has become available to anyone with access to the Internet. How does the general public cope with the experience that science and especially science content on the Internet often only offers fragile and conflicting evidence? Do new kinds of online resources, like virtual communities, improve the competence and willingness to accept multiple and diverse scientific perspectives? These questions are dealt with in a new Priority Program of the German Science Foundation. An interesting example of long-tail learning are virtual communities of doctoral students and their supervisors working on subjects for which there is no critical mass at any of the involved universities [Strube & Spada, 2003]. These doctoral students learn to be full participants in the field by effective collaboration on common themes of their theses and by repeated mutual constructive reviews of the work of their peers.

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