

The Learning Network

A plan for informal learning institutions
to create personalized learning experiences.

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The background of the Learning Network

From 2005 to 2010, the IIT Institute of Design worked on a series of projects whose general goal was to find ways that learning could be more effective and enjoyable for students in American public schools. In particular, we were interested in non-traditional approaches that could help make learning more relevant and motivational by focusing on kids' interests.

Early in this work we developed three guiding principles:

1. Innovations will come from the edges of the field, not the center.
2. Schools should be nodes on a network, not stand-alone institutions.
3. Innovations should be kid-centered, not test-centered.

Although we eventually wanted our work to influence public schools, we focused on informal learning out of schools for two reasons: we thought we would learn more in the context of voluntary situations where institutions have to care about kids' interests if they expect them to stay engaged; and we thought schools would not accept real change that the three principles would lead to.

One of the concepts that evolved during the work was an Electronic Learning Record (ELR). The ELR was originally thought of as a digital toolkit for managing a person's educational history, goals, aptitude, and aspirations. The ELR is the interface between each learner and parents, teachers, and peers to discover and convey the learner's achievements and needs. It also allows the learner to record his/her learning in and out of school and functions as a living portfolio.

The ELR has grown from the initial idea in many ways - from product to service, from tracking one's past to planning one's future, from being just for kids to supporting life-long learning, and from being called ELR to being called BettrAt.

In the early phases of design, ID explored how BettrAt could be the platform for connecting libraries, museums, and smaller organizations into a network that supported kids' learning out of schools. These institutions of informal learning (IIL) were viewed as sources of content and places of learning that could be leveraged through using the characteristics emerging in BettrAt.

Summary

The Learning Network is a platform that enables a variety of institutions of informal learning (ILL) to create content that kids can use to advance their knowledge and abilities in topics of interest to them. ILLs come in three main forms: libraries, curatorial organizations like museums and zoos that develop coherent points of view, and smaller organizations that help people improve skills in the arts, sports, and hobbies.

Unlike libraries, that provide books and other media in an organized system, the Learning Network offers a set of tools designed to help kids assemble their own plans. Unlike museums and other curatorial organizations that present content with singular points of view meant to satisfy all visitors, the Network lets the individual kid assemble material from various institutions and life experiences, using material and advice from the ILL to curate his/her own stories. Unlike organizations focused on improving specific skills, the Network enables the learning experiences to include the rest of the kid's life.

The Network will do this by being designed and optimized for an individual's interests. This will be made possible by merging the platform characteristics of the electronic learning record called BettrAt with characteristics of the social-based learning that is core to after-school programs and other events currently conducted in ILLs.

To enable this change, three challenges or opportunities need to be met:

1. In curatorial institutions, the conflict between curatorial excellence and public popularity must be removed.
2. To enable a large scale result, we need to develop a protocol similar to the catalog systems that provide a standard for libraries.
3. Combine the rigor of formal learning with the relevance of informal learning.

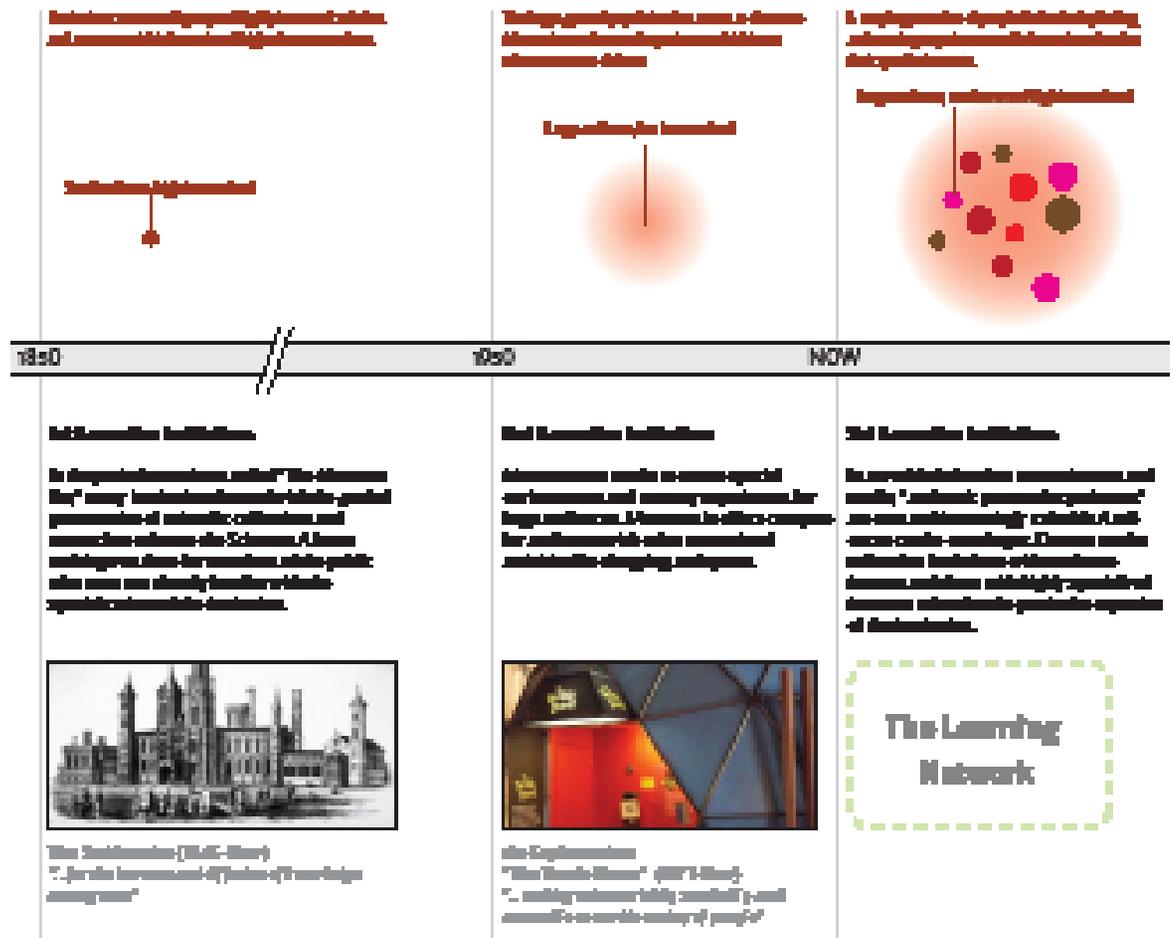
1. Overcome the current conflict between curatorial excellence and public popularity

THE EVOLUTION OF MUSEUMS AND OTHER CURATORIAL INSTITUTIONS

This diagram shows that museums and other curatorial institutions have evolved from serving very small groups of highly interested scholars to serving the general public with information and large-scale events that have little relevance to them.

We believe that institutions of informal learning are capable of reaching a much larger audience by using their expertise to cater to the interests of many small groups of highly specialized learners.

The Learning Network aims to provide the tools and support for these third generation institutions to be responsive to their constituents.

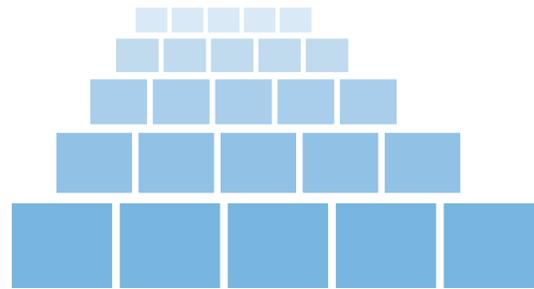


2. Achieve the scale of libraries while fostering personality of small organizations that can tailor offerings

Traditional libraries have, in a sense, always come close to being the platform we are proposing.

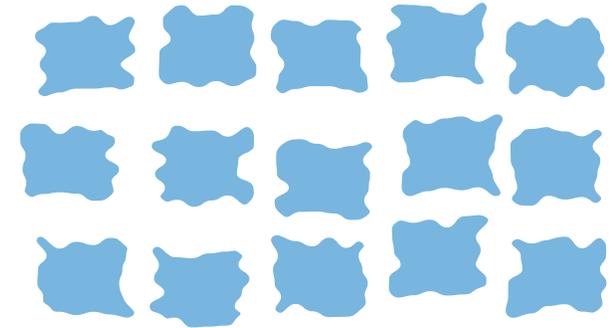
They provide a systemic way of understanding context (cataloging systems, open stacks, and librarians) of finding nuggets of content (books) that people assemble to read in the order they want. The library provides a social space as well as an information space. People do not have to choose one or the other; they augment each other.

When compared to electronic systems, the only major functions they are missing are fast acquisition of new content, fast hyperlinking of one text to the other, infinite copies, and immediate delivery.



LIBRARIES

At their core, libraries have a platform of cataloging systems for their books and other media. It is common across all libraries, enabling users to know how to ask for information and librarians to know where to get it.



OTHER INSTITUTIONS OF INFORMAL LEARNING

On the other hand, IILs focusing on teaching music, poetry, cooking, car repair or any other topic are very good at personalizing their services for the student. However, they are ad hoc solutions and do not have an integrated platform that makes it easy for students to shift programs or topics. This approach tends to offer all the most customized learning but it is not scalable.

3: Integrate institutions of informal learning in a person's learning network

The Learning Network will create the opportunity to combine the efficiency of formal learning with the effectiveness and enjoyment of informal learning.

THE APPARENT TRADE-OFF BETWEEN INFORMAL AND FORMAL LEARNING

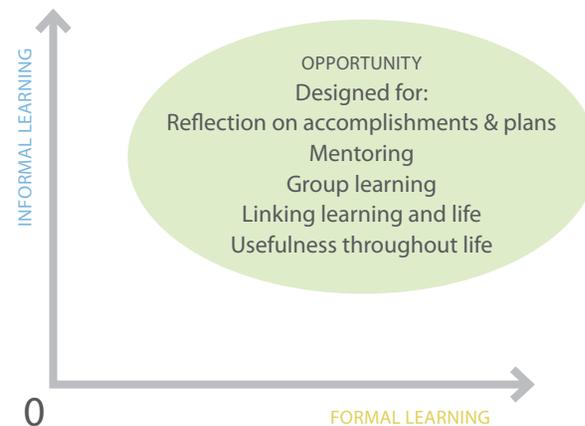
The current assumption is that there is a weak relationship between formal learning in schools and informal learning in libraries, museums, sports teams, and after-school clubs.

It is viewed as a zero-sum game: as subject matter becomes more rigorous and specified, it has to be less enjoyable and motivating.



THE MOTIVATION OF INFORMAL LEARNING USED FOR THE CONTENT OF FORMAL LEARNING

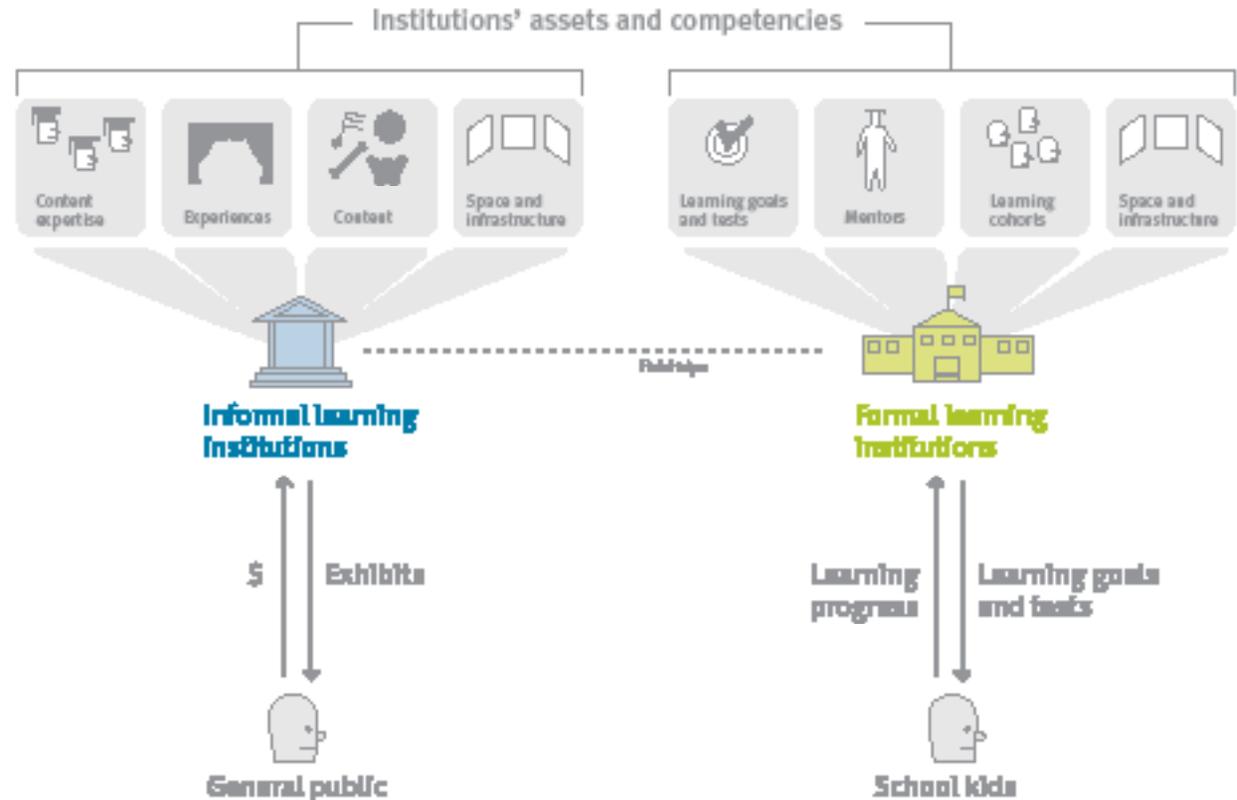
We believe this view is not correct and that the combination of the two modes of learning can create an effective and efficient way to educate our kids.



From an institution-centered approach to learning...

CURRENTLY, interested learners interact with the assets and competencies of institutions of informal learning like content, expertise, engaging experiences, and space and infrastructure mostly through costly curated exhibits. These institutions are not responsive to their constituents and users' learning experiences remain casual.

Institutions of formal learning like schools provide goals and assessment of learning but the learning experiences are often not very engaging for learners.



Access to content and expertise through curated exhibits only

Institutions not responsive to constituents' interests

Users' learning experiences remain casual

Learning goals and tests

Learning experiences are often not very engaging for kids.

...to a user-centered approach to learning

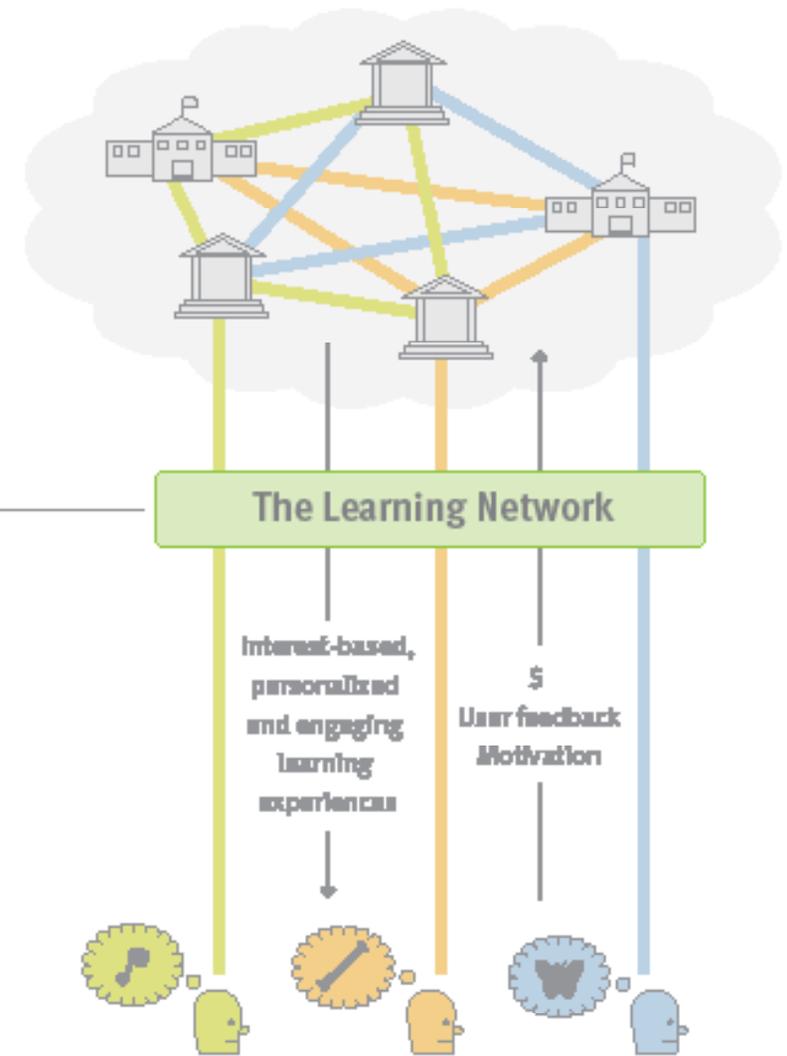
The following principles informed the development of the concepts for the Learning Network:

- Learning should be interest-driven, social and experience-based
- Bring formal learning into the informal environment
- Wrap the social conditions for learning in schools around real-world, inspiring experiences
- Extrude museum staff expertise and content into the public
- The museum as a place for doing stuff
- Institutions as nodes on a kid's learning network.

THE LEARNING NETWORK will allow institutions to be more responsive to their constituents. It provides a way for museums to engage directly with their constituents by providing a platform of tailored mentorship, modular content and engaging learning experiences.

For learners it provides a personalized way to get better at what interests them when and where they want.

7 Concepts for the Learning Network



Expert Interest Networks

The Expert Interest Network is a clearinghouse for expert knowledge and mentorship that provides quick access to people with the right information.

Currently, for interest-based learners it is difficult to get consistent access to certified expertise and content that can help them improve skills and knowledge in their field of interest.

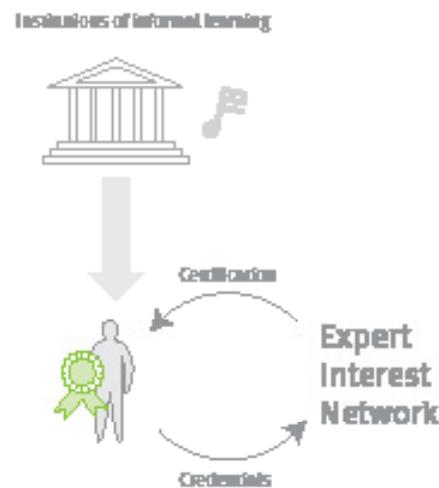
The Expert Interest Network is for people looking for expertise in a topic that interests them, who need a quicker way to find the right information.

Unlike most K-12 education, where learning is rarely related to people's interests, Google where it is hard to identify expertise, Facebook that maps people's social graph, the Expert Interest Network maps to people's interests and makes it easy to find the people with the right expertise.

USER SCENARIO

Content experts are certified
Nikhil is a new Indian percussion instructor at the Old Town School of Folk Music. As part of his job as instructor, Nikhil is required to register on the Learning Network. He submits his credentials and history to peers in the Percussion Network. He receives a Learning Network certification that allows him to be a mentor.

Accept mentorship from experts
Nikhil receives a message from a tabla instructor at his old school in Mumbai that is part of the Network, offering to mentor him. Nikhil is now part of the Percussion Network Mentoring Pyramid, a network of experts from various institutions.



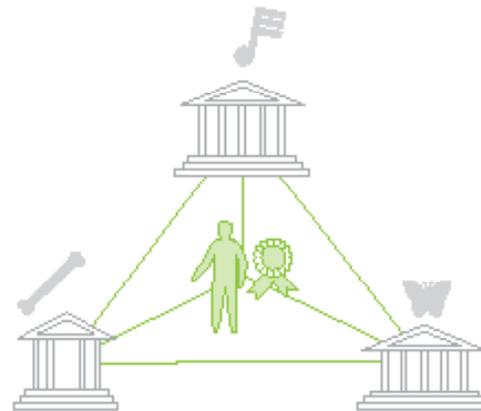
Receive expert guidance

Sajid is interested in learning to play the tabla. He signs up for the Indian Percussion Expert Interest Network. He receives a message from Nikhil who offers to be his mentor. Nikhil points Sajid to some videos and tips on how to get started.



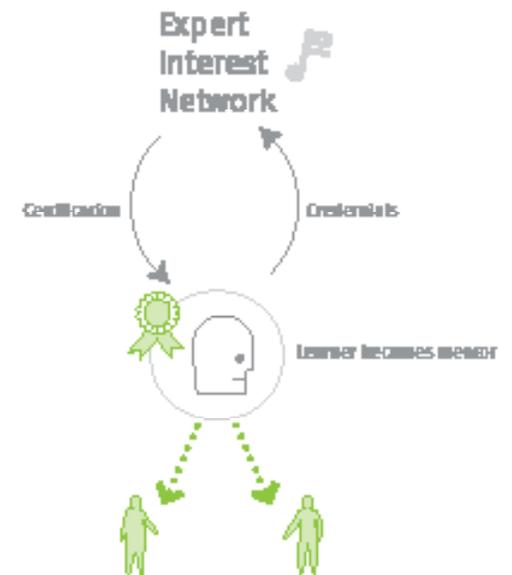
Activities span different institutions

The Field Museum is organizing an exhibit of musical instruments from all over the world. As a Learning Network mentor Nikhil, is able to teach a tabla class at the museum. He invites Sajid to attend the class.



Become a certified mentor

Sajid progresses in his tabla studies. He submits his BettrAt timeline to the Network and becomes certified to be a mentor himself.



Authentic Experiences Database

Interest-based learners want to find engaging learning experiences regardless of the institution that provides them.

The Authentic Experiences Database (AED) is for learners who want easy access to a variety of experiences around their interests.

The AED is a central repository of certified inspirational objects, events and experiences from various sources that provides learners with easy access to relevant content and experiences.

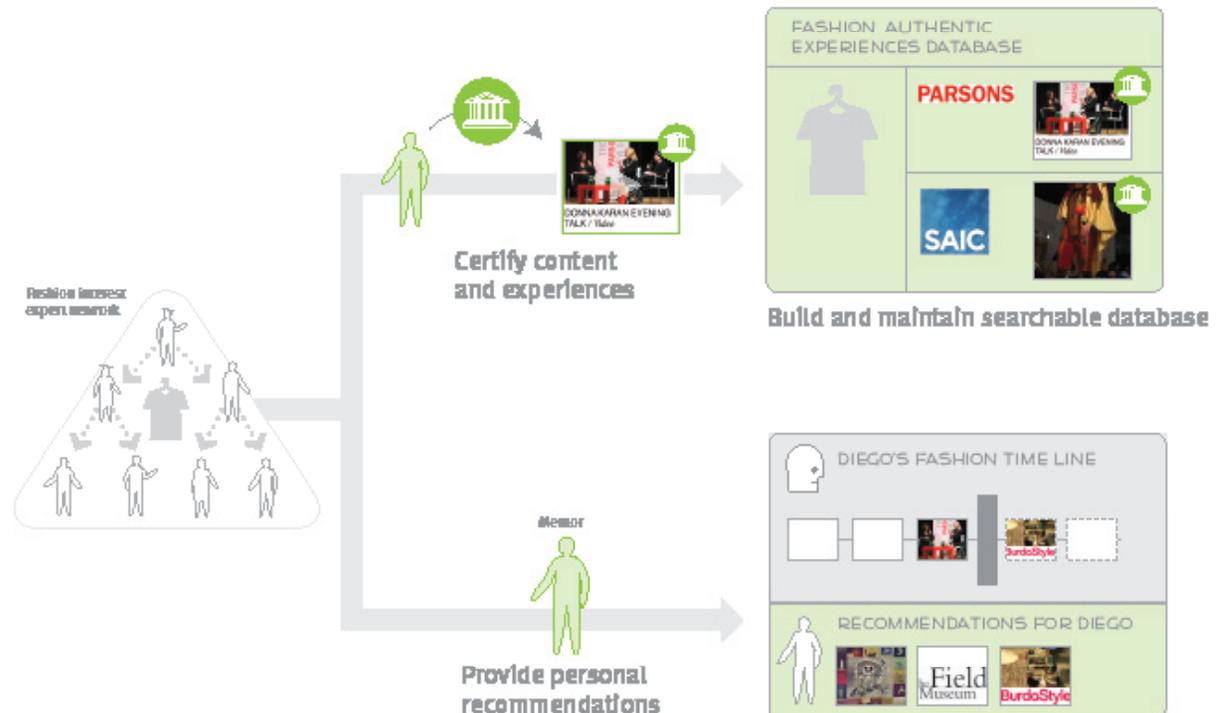
Unlike Google that provides users with a deluge of unsorted and unaccredited information, the AED aggregates certified content around a user's interest. Unlike most museum exhibits that present a unique point of view, it presents an audience with unique experiences. Unlike school field trips where kids have a one-time experience, it lets learners interact with the object or events over a longer time.

USER SCENARIO

Certify content and experiences
 15-year-old Diego is interested in fashion. He has been downloading videos of fashion shows from YouTube. Through a BettrAt fashion interest group he finds the AED fashion database. It lists historic fashion collections from museums, runway shows from fashion schools, workshops. Each event in the database is certified by institutions on the network.

Build and maintain searchable database
 He searches by location and a number of events, shows and exhibits are listed. He marks

Provide personal recommendations
 Once Diego is signed up for the fashion Interest Group he is assigned a mentor. The mentor is able to provide more tailored recommendations for him.



Learner Portfolios

Interest-based learners need a way to showcase and share their learning progress and point of view in an environment where peers and experts can give feedback.

Learner Portfolios (LP) is for learners who want access to content that they're interested in and to see what others with their interests are creating. It is for museums that want to be responsive to their constituents.

LP is a learning experience portfolio that allows learners to share their learning process and receive feedback and guidance from peers and mentors.

Unlike blogs where content is unstructured, content on LP is contextualized around people's interests. Unlike Twitter, Picassa, Flickr or YouTube, Learner Portfolios provides rich, multimedia experiences.

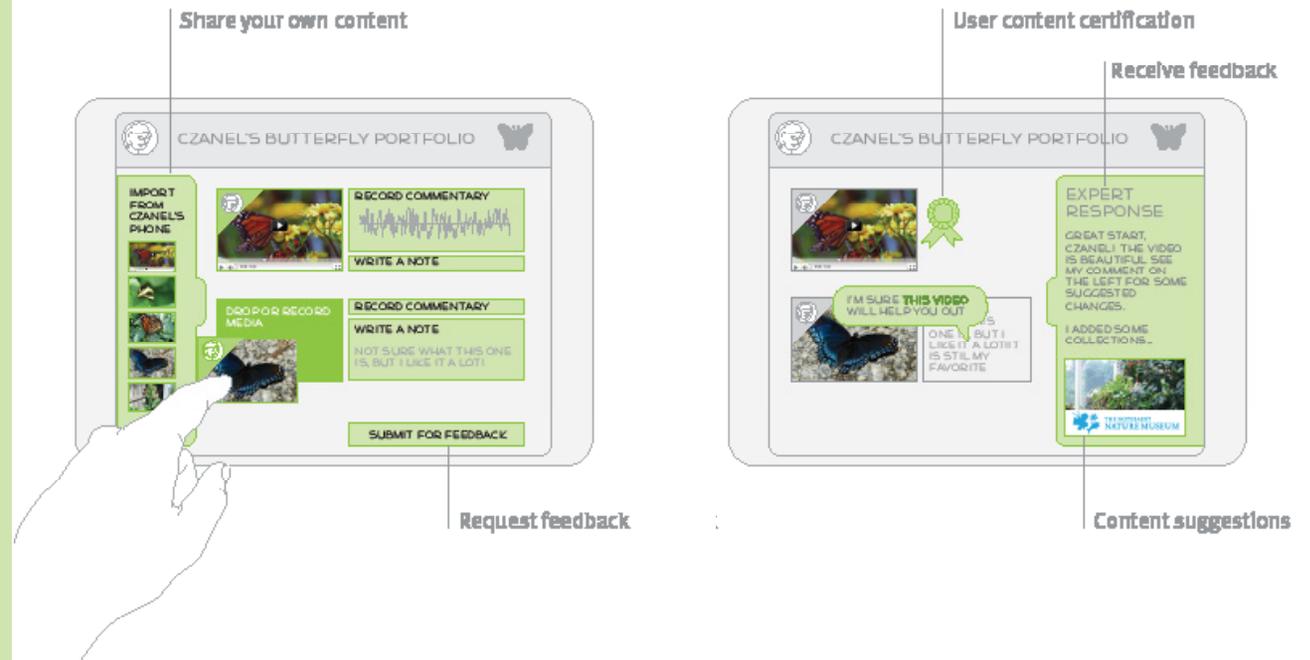
USER SCENARIO

Create your own content

Czanel, 12 years old, is interested in butterflies. She has been taking pictures of them in her neighborhood. She wants to learn more about the butterflies she has photographed. On BettrAt she signs up to a butterfly interest group. She uploads some of her pictures to her BettrAt Butterfly portfolio and submits them for feedback.

Get feedback and content suggestions

She receives a note back from a University of Chicago graduate student who is part of the network, with some corrections and a suggestion to look at collections of images and videos that are available to her. A few collections are highlighted that might be of specific interest to her.

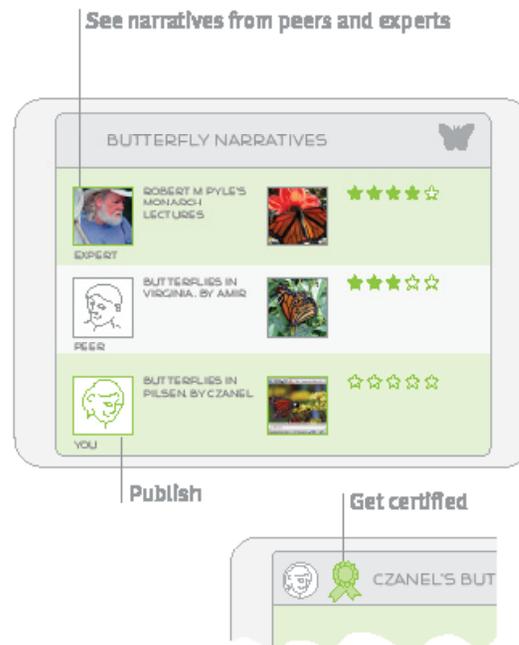
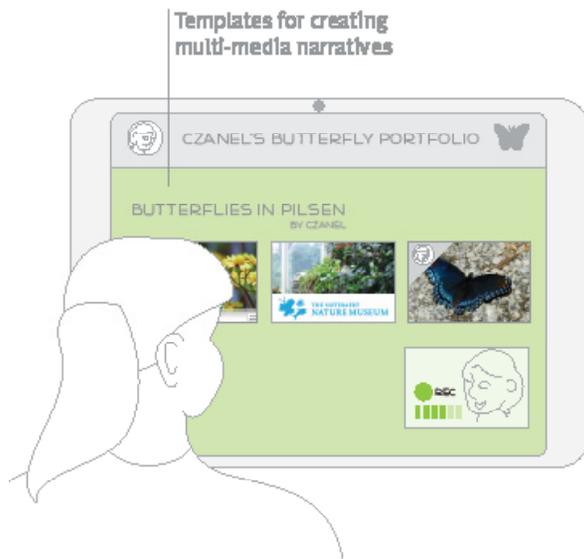


Create your own narrative

With all this material at her disposal, she decides to write a BettrAt school report on Monarch migration. She looks at narratives from others in her Butterfly Network to get inspiration. Using one of the web templates, she drags and drops video content, as well as her own images and photos from Monarchs during migration and narrates her commentary.

Publish your portfolio and get certified

Czanel is able to submit her work to a public BettrAt gallery where the public can see it. She receives a lot of feedback from her friends but also from some renowned butterfly experts. On her profile now appears a badge indicating she is a published BettrAt author.



Classroom in a Museum

Museums need a way to be more responsive to their constituents' needs and interests. Interest-based learners want engaging ways to interact with museum content and expertise.

For groups of learners who want a richer learning experience, the Classroom in a Museum (CiaM) is a flexible learning environment that provides a space in the museum where groups can interact with museum content and expertise, and collaborate and learn together.

Unlike a regular classroom environment that has no direct access to authentic experiences, CiaM provides a way for groups to interact directly with museum objects and experts.

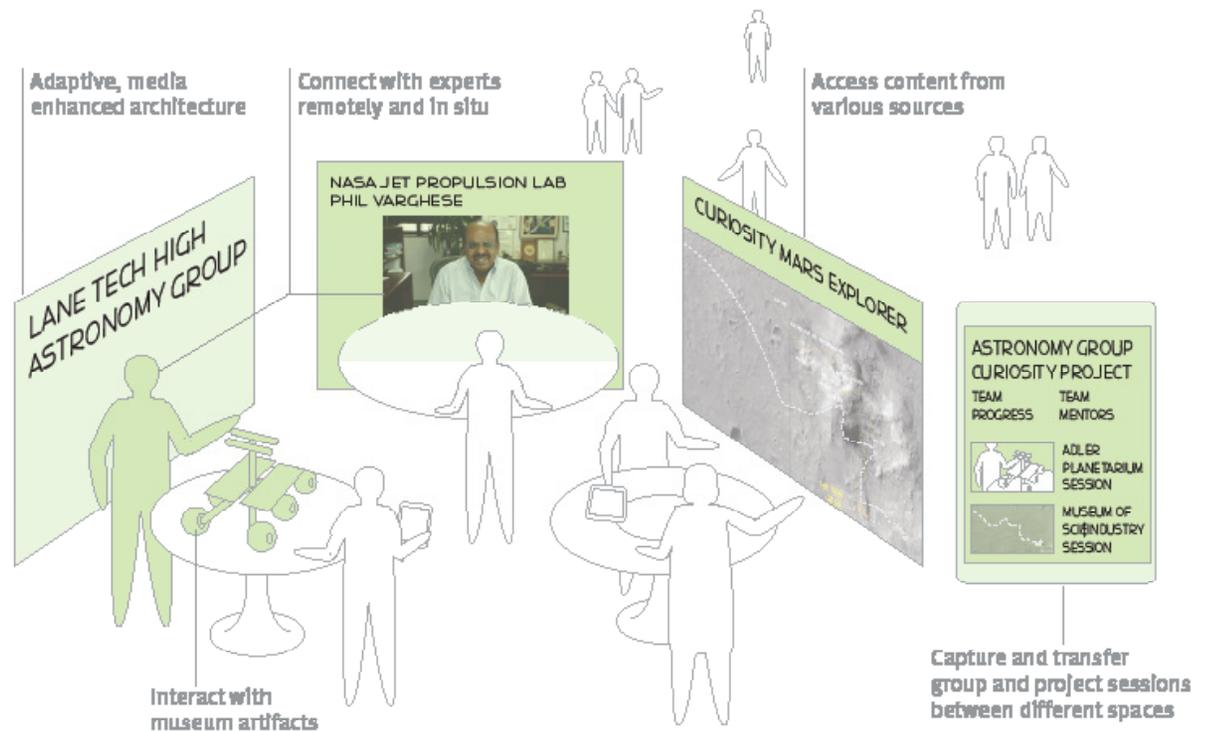
Unlike field trips that are a one-time experience that focuses on kids absorbing information, CiaM provides a place to do things together over longer periods.

Unlike regular museum exhibits that target a general audience, CiaM provides the opportunity to work on projects that are of interest to a group.

USER SCENARIO

A BetrAt astronomy interest group meets weekly at the Adler Planetarium in one of the Thinking Spaces. The group follows NASA's Curiosity Mars Science Laboratory rover and maintains an active blog. The group has access to the Explorer's data as the mission unfolds. A visiting astronomer from the Museum of Science and Industry stops by to answer questions and

sometimes comments on the blog. The group connects remotely with scientists around the world as events happen. The group temporarily works at a Thinking Space at the Museum of Science and Industry to have access to artifacts from previous Mars explorers as the MSI prepares a big astronomy exhibit at the museum.



BetrAt for Mentors

BetrAt for Mentors (BfM) is a teacher resource and teaching guide that provides quick, one-stop access to museum content and expertise.

Teachers, mentors and group leaders need help teaching subjects in a way that engages all learners. They need a centralized place to find relevant experiences for their learners.

BfM is for teachers and mentors who want to create learning experiences for their group that connect with their interests.

BfM is a teacher resource guide that provides quick, one-stop access to museum content and expertise.

Unlike most museum teacher resources that match museum content to learning standards, BfM focuses on helping teachers create experiences around content that interests their learners.

Unlike museum teacher resources whose information is spread out over separate institutions, BfM information is accessible in one place.

USER SCENARIO

Capture group interests

Mr. Gonzales is a 6th grade teacher. He asks his students to come up with a list of topics they are interested in. Diego is one of a group of four students who have expressed interest in architecture. On his BetrAt account Mr. Gonzales sees an overview of students' interests and helps the students form teams.

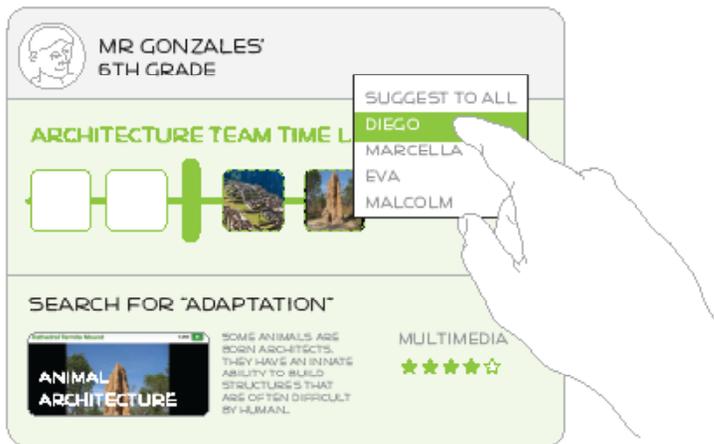
One place to find engaging experiences

He is able to collect a number of different age-appropriate events and content related to architecture. For an upcoming field trip to the Chicago Field Museum, he selects some content that the architecture team can access in a Thinking Space at the museum and he pushes these to the team's timeline.



Adjust learning on the fly

In science class Mr. Gonzales notices that Diego has trouble understanding the concept of adaptation. He is able to quickly find some content related to animal architecture. He knows Diego's language skills are behind so he chooses a video that explores the concept, and pushes this to Diego's architecture timeline.



BetrAt Smart Device App

Interest-based learners have a desire to explore their interest when and where it is most relevant.

The BetrAt Smart Device App (BSDA) is for interest-based learners that want to learn about their interests in their immediate environment. It is for organizations and individuals that want to share content and experience in a specific location.

The BSDA is a mobile learning application that provides information that is relevant and timely.

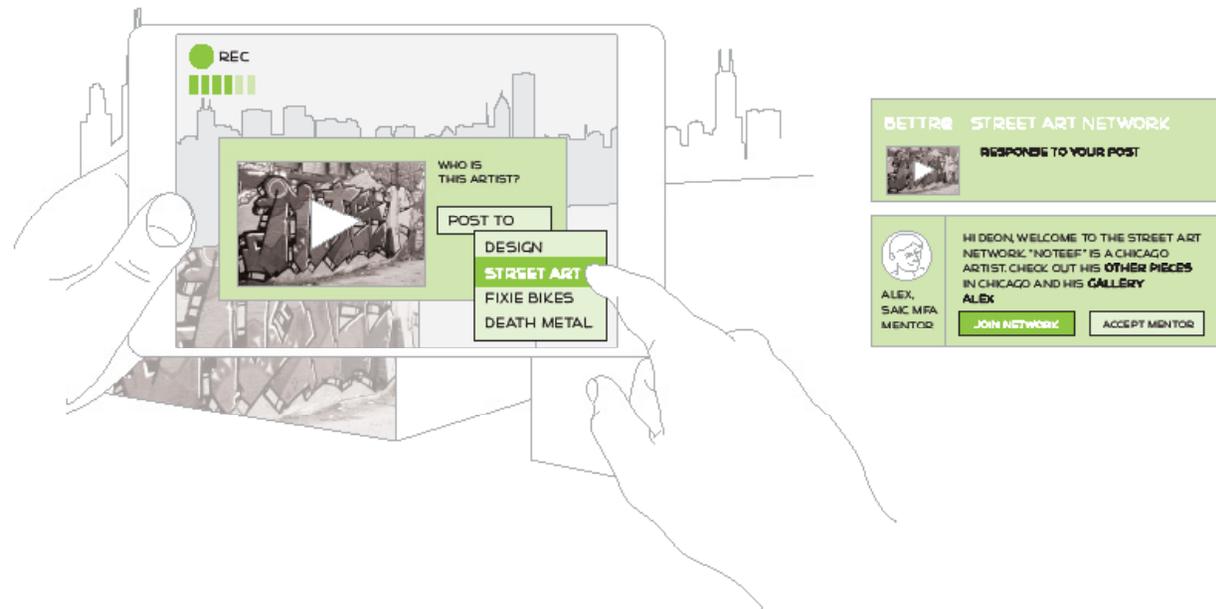
Unlike YouTube, BSDA allows for sharing of content in the physical environment.

Unlike Layar that provides geo-located content without a context, BSDA shows content created by people that share your interests.

USER SCENARIO

Post pertinent questions to interest group
Deon has an interest in street art and he takes a picture of a mural in his neighborhood. He posts it immediately to an art interest group on BetrAt.

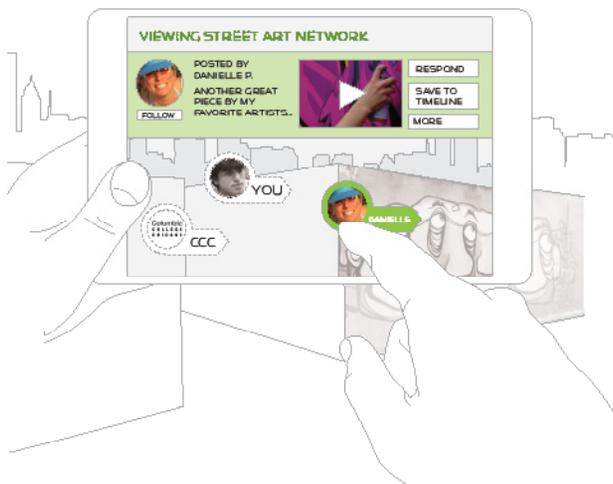
Receive immediate expert feedback
He receives a welcome message from a Columbia College MFA student with information about the artist and her work. The student invites him to join the network and offers to be his mentor. Deon's video with the student's response is added to his BetrAt timeline.



Discover interest-related experiences in your environment

As part of the interest network his smart phone gets alerted the next day when he passes a mural painted by an artist in his mentoring pyramid. A number of tags hover over the screen. One points to a mural he never noticed before. He clicks on the hovering icon and sees a video of the making of the piece, posted by a member of the network, as well as some commentary. It is from

the same artist he discovered yesterday. On the screen he sees another virtual tag. It is from a Columbia College professor who will be creating a mural on this spot and is looking for volunteers. Deon sees his mentor listed as one of the volunteers. He plans on participating and drags the event to the To do part of his timeline. His mentor sees the event appear on Deon's timeline and they arrange to travel together to the event



LearningNetwork.org

Organizations need help overcoming barriers to institutional change.

For learning institutions that want to be more responsive to their constituents' interests, LearningNetwork.org (LN) is a non-profit consultancy that provides expertise and guidance in implementing the Learning Network road map.

Unlike museum partnerships such as Museums in the Park that promote exposure, LN takes a learner-centered approach and aims to make informal learning institutions more responsive to their constituents and promote cross-institutional collaboration.

TASKS OF THE LEARNINGNETWORK.ORG:

The LearningNetwork.org will help institutions of informal learning implement protocols, provide systems support, as well as support organizational change. More specifically:

- It will help organizations create modular content in their field of expertise
- It will help institutions overcome cultural barriers to change
- It will help organizations create and manage digital assets
- It will help organizations manage content rights
- It will help organizations integrate and transition existing initiatives in the LN

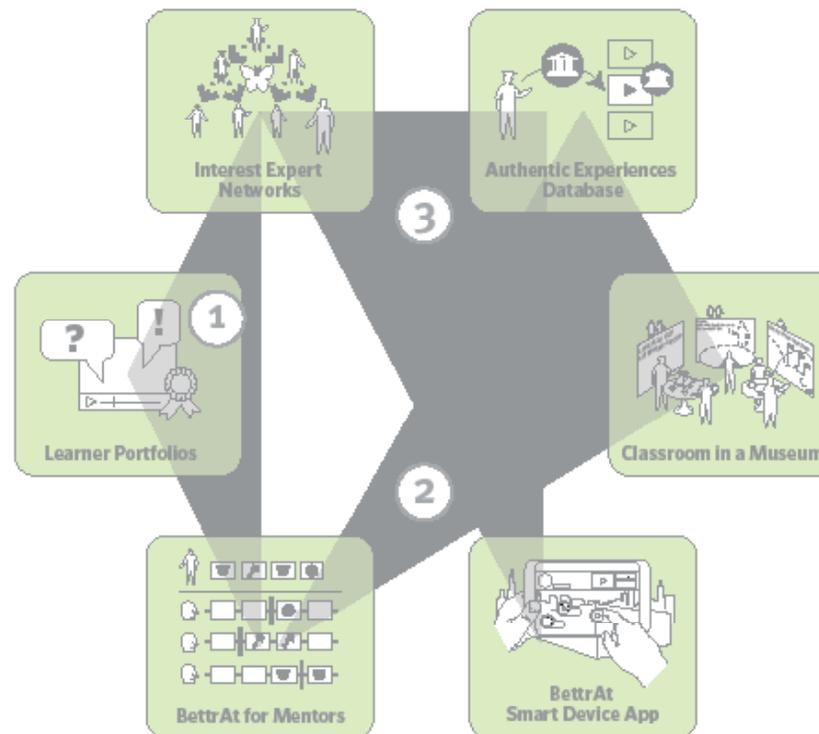
Concepts combined

Even though these concepts can exist independently, when combined, they reinforce each other. These are three examples of how these concepts can work together.

1) The student's learning portfolio can be shared with BettrAt mentors and classroom teachers to become a source of continuous assessment of learning. BettrAt mentors, classroom teachers, group leaders can push appropriate events and learning goals to a learner's timeline at the right place and time. The teacher provides guidance and her students as experts from the learner network provide content and fact check.

2) Teachers can bring a class to a museum to have students work individually or in interest-based groups on their own projects. Students combine use of virtual and physical museum content with communications and interactions with experts and mentors in the field.

3) Access to content and expertise in one's field of interest through a mobile application extends the user's learning environment even further. Learners can ask questions on the spot. Experts can mark places and events and create custom narratives through the virtual environment. For instance, an expert from the Old Town School of Folk Music can create (and sell) her own guided tour of the Field Museum collection.



Research

The work on the Learning Network builds on the insights and principles from research projects conducted at the IIT Institute of Design: Schools in the Digital Age, BettrAt and Thinkering Spaces.

SCHOOLS IN THE DIGITAL AGE

A research initiative his project to identify opportunities to transform the way schools can be planned and organized to best leverage the rapidly developing technical and social contexts of learning.www.id.iit.edu/index.php?id=635

BETTRAT

BettrAt is a cloud application that facilitates groups of people who share common interests help each other get better at those interests.
http://bettr.at/blog/index.php/about_bettrat/

THINKERING SPACES

ThinkeringSpaces are interactive environments that encourage school-age children to tinker with things, both physical and virtual, reflect upon what they discover, and elaborate their ideas in ways they can share with others.
www.id.iit.edu/index.php?id=705

LEARNING NETWORK

In the summer of 2009, a team of students conducted interviews with executives and education experts from formal and informal learning institutions. The insights discovered and principles derived from them served as the input for a concept generation workshop held in 2010.

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The Learning Network

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IIT Institute of Design

The Institute of Design is one of seven schools of the Illinois Institute of Technology. It is a community of 150 graduate and Ph.D. students and 40 faculty and staff. ID is internationally recognized as the leader in developing and teaching rigorous design methods.

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1. Nichole Pinkard was instrumental in shaping the direction of this project. Circumstances required her to spend much less time than was originally intended. We tried to maintain the principles of her ideas about the social aspects of out-of-school learning. Any shortcomings in this are not Nichole's responsibility.

