

ITEC 865 e-learning critique: Kahn Academy

<http://www.khanacademy.org/>

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If you are a person who's ever wished they could tune into a Calculus Channel on television then you are likely to be excited by the Kahn Academy. But even if you don't care if you never differentiate another function again the philosophy behind this online repository may thrill you. With clear connections between quality of life, citizenship and community health that all pass through literacy and numeracy its hard to argue against the Kahn Academy mission of providing "a world-class education to anyone, anywhere for free" unless you are in the business of selling educational loans.

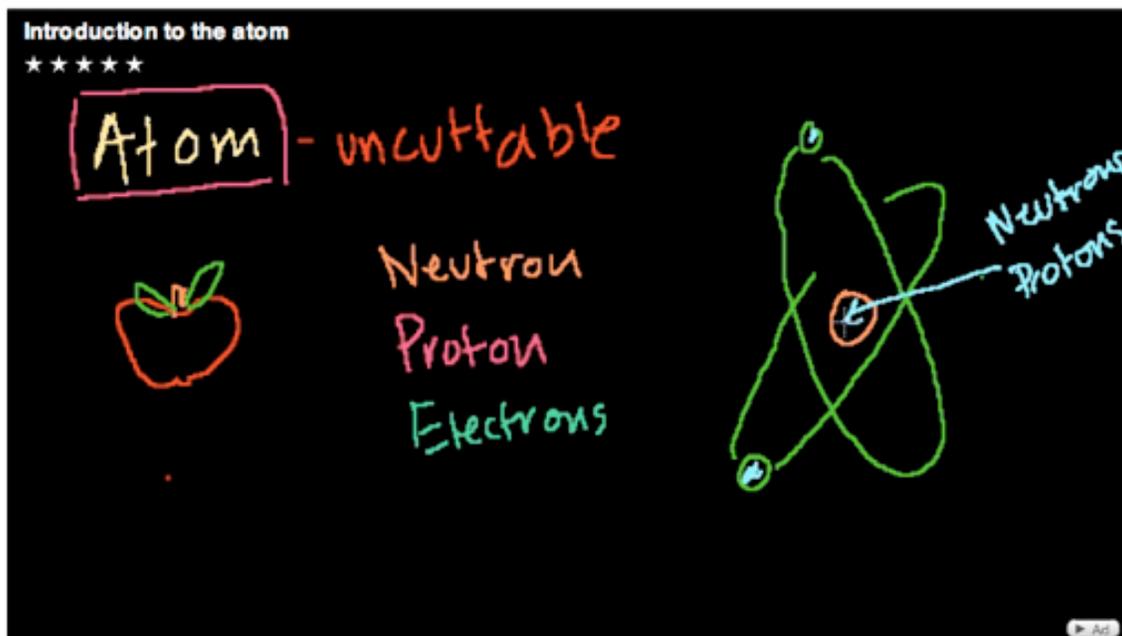
Educational Experience

Salman Kahn attended universities that are recognized as some of the best in the world, Harvard and MIT and studied Mathematics. Now he shares knowledge gained from his world-class education freely. The Kahn Academy course catalog is wide and deep, over twelve hundred strong; most offerings are created by him and share a common accessible format. Through videos usually comprised of simple blackboard drawings and a conversational tone Kahn explains the concept at hand.

Introduction to the atom

The atom, proton, neutron and electron

Playlists: Chemistry

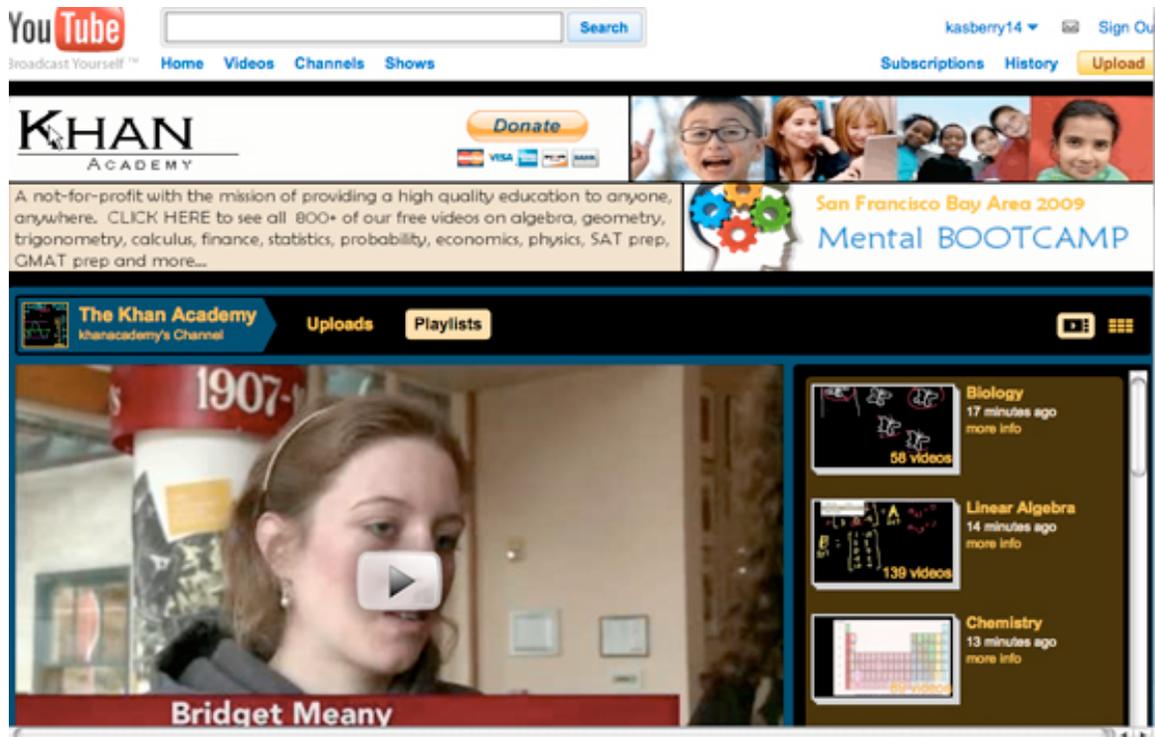


Asberry

e-Learning Critique: The Kahn Academy

1 / 9

Categories include Biology, Economics, Algebra, SAT and GMAT preparation, Calculus, Banking and Money, Chemistry, he's also deconstructed the Debt Crisis and federal responses to it. All are free to view through YouTube.



YouTube Channel joined Nov 2006. 43,729 subscribers, 12,249,117 upload views.

In addition to the relatively passive exercise of watching the "Tube", the Academy also provides opportunities for assessment and for a global view of personal progress through the Exercise Dashboard. This view requires login through Google Sign in but is also free.



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Other types of offering include interviews with Kahn on NPR & CNN, a link to the Academy facebook site and information about a summer “Mental Boot Camp” sponsored in Palo Alto for motivated youth in grades six – twelve.

The communications pattern of the Academy is primarily radial, that is, uni-directional, inside-out. Salman Kahn’s personal network is not on display through the Academy and the Academy itself doesn’t operate as a network or a community but as more of an archive. Kahn presents as a friendly lecturer, not a mentor, because there is little exchange between teacher and learner.



Facebook page is popular but not part of instruction.

Assessment

The assessment component, though hard to locate, is useful. Again, a simple implementation but effective, mostly because the feedback is so immediate.

Exercise Dashboard

Welcome to the Alpha release of the Khan Academy Exercise Application. In order for it to work properly, you should be using the latest version of Firefox and install the math fonts.
The two advantages of this one are that 1) it should be much faster and 2) it allows you to skip around modules and only suggests what you should work on (the suggestions change as you get streaks of 10 questions in a module correct). Let me know if you have any problems.
-Sal

Suggested Exercises

Energy Points	Exercise	Proficient?	Longest Streak	Current Streak
225	Addition 2			☆☆☆☆☆☆☆☆☆☆
225	Subtraction 2			☆☆☆☆☆☆☆☆☆☆

All Exercises

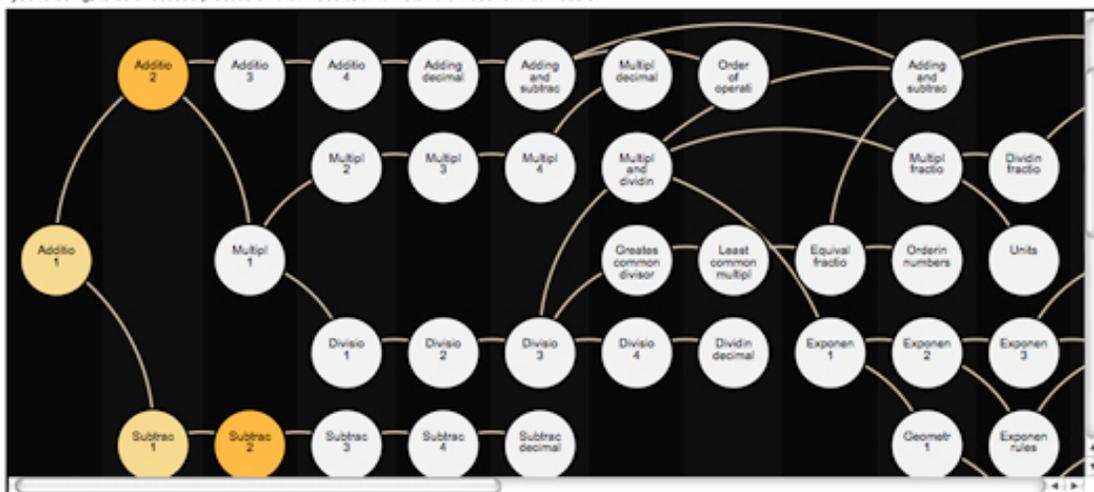
Energy Points	Exercise	Proficient?	Longest Streak	Current Streak
15	Addition 1	😊	10	☆☆☆☆☆☆☆☆☆☆
15	Subtraction 1	😊	10	☆☆☆☆☆☆☆☆☆☆
225	Addition 2			☆☆☆☆☆☆☆☆☆☆
75	Addition 3			☆☆☆☆☆☆☆☆☆☆
225	Subtraction 2			☆☆☆☆☆☆☆☆☆☆

Exercise Dashboard

Since learners can attempt quizzes without limit they are more of a self-teaching tool. Points are awarded and completed efforts appear on the Knowledge Map which reinforces learning activity through the gestalt of perceiving the whole scope of materials available and representing mastery in extrinsic form.

Exercise Home: My Knowledge Map

The yellow modules are those that you have already become proficient in. The orange modules are those that I suggest you work on. Click on a module to see how you're doing, to do a focused practice on that module, or to watch the video for that module.



Analysis

As an educational site in Kahn Academy two characteristics stand out. One, it is extraordinarily content-rich. Two, the presentation of materials is very simple, almost naive in comparison to the deep concepts being presented. The navigation is flat and its difficult to know where you are even in the few different pages you may land by browsing. Instead of seeing points of access between the Exercise Dashboard / Knowledge Map and the Course Catalog or the You Tube channel the user must find the connections accidentally and remember them. There is no search feature, only a high-level hyperlinked text index. It seems that most users search through the YouTube interface on keywords and tags. Content organization is also confusingly flat. The Course Catalog is conflated with the Academy overview, one page not only contains all twelve hundred titles but several different articles about the Academy.

The screenshot shows the top portion of the Khan Academy website. At the top left is the 'KHAN ACADEMY' logo. To its right is a 'Donate' button with logos for Visa, Mastercard, and American Express. Further right is a Creative Commons license logo and text stating 'Khan Academy videos are licensed under a Creative Commons 3.0 License.' To the right of the license is a Facebook logo and another 'KHAN ACADEMY' logo. On the far right is a banner image of a group of diverse children. Below the header is a row of video thumbnails with titles and view counts: 'Salman Khan Speaks at GEL (Good Experience Live...)' (2,901 views), 'PBS NewsHour on the Khan Academy' (4,753 views), 'Salman Khan on CNN' (11,447 views), and 'Salman Khan: Math master of Internet'. Below this is a large video player titled 'The Khan Academy' showing Salman Khan at a computer. To the left of the video player is text describing the Khan Academy's mission and mentioning a 2009 Tech Award in Education. Below the video player is a list of categories: Algebra 1, Algebra, California Standards Test: Algebra I, California Standards Test: Algebra II, Arithmetic, Pre-algebra, Geometry, California Standards Test: Geometry, Chemistry, Brain Teasers, Current Economics, Banking and Money, Venture Capital and Capital Markets, Finance, Valuation and Investing, Credit Crisis, Geithner Plan, Paulson Bailout, Biology, Trigonometry, Precalculus, Statistics, Probability, Calculus, and Differential Equations. On the right side of the page, there are partial views of other content, including a CNN credit crisis article and a 'Mental BOOTCAMP 2010' logo.

The site gets no help from its graphic design, except perhaps that it never changes. Jammed against the site logo is a Donate button and the Creative Commons license. There is little visual guidance and no rest for the eye. Still, if you know how to scroll you can find many interesting titles to watch and this keeps people coming back despite any friction experienced from the User Interface. My favorite so far is a selection from the Biology Playlist called Intelligent Design and Evolution where Kahn uses fractals and self-

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e-Learning Critique: The Khan Academy

5 / 9

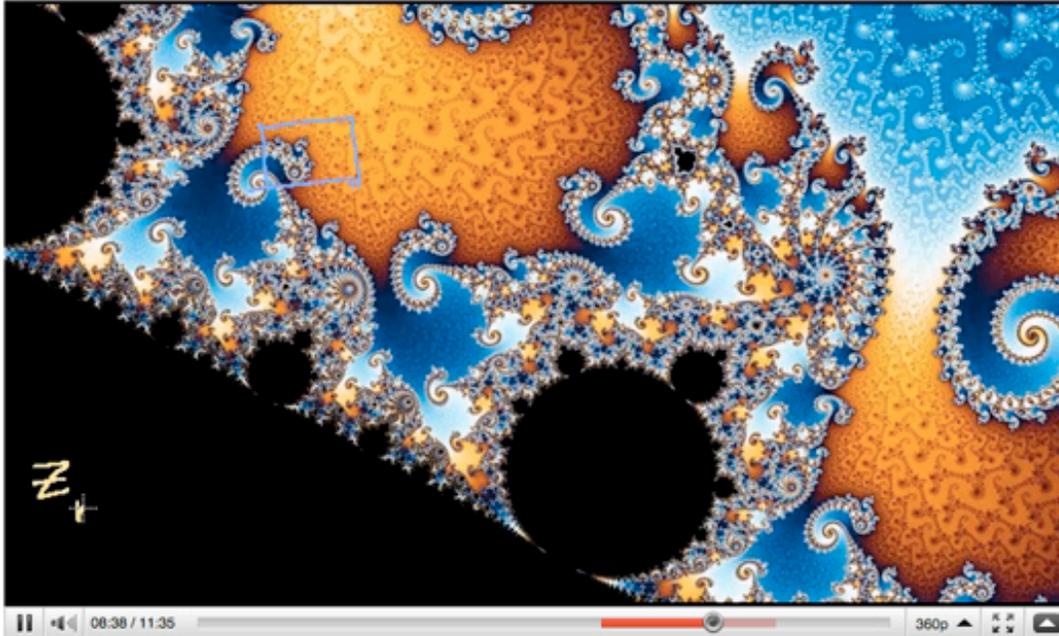
similarity to illustrate the complexity of biological adaptation.

[Video Library](#) | [Rate and Comment on YouTube](#) | [Exercises \(Requires Login\)](#)

Intelligent Design and Evolution

The argument that evolution speaks to being the most "intelligent design"

Playlists: [Biology](#)



Kahn really is a brilliant teacher and if you don't get the idea the first time you can replay it, pausing on the hard parts, until you do. Over 70,000 students use the Academy every month, [Kahn, 2010] illustrating that there's much in this approach that's clearly working. These numbers also point to a large need, unmet by more familiar school contexts. At the US Federal level there is a movement to deploy a national standard for mathematics education to meet this need. [National Governors Association, 2010] In California this effort has been criticized as less rigorous than current state standards at the same time that an historic class action law suit is being brought by students and school districts to enforce adequate State funding for public education, another approach to meeting the needs of learners. Lots of people identify it. Kahn has responded to the need for effective Math and Science education in the most direct manner possible for an individual –he's teaching.

Design Philosophy

I believe that the comparative poverty of the interface for the Kahn Academy reflects a very deliberate choice not to invest in superficial elements in favor of focusing on

expanding the video library, keeping the Academy operations small and having no real interest in some of the buzz around facilitating social learning. In an interview with Sal in 2006 that my business partner, who had studied with him at MIT, arranged for the purpose of a pitch to build this idea of a teaching library out in Moodle (Learning Management System) or Drupal (Constituent Relationship Management System) Sal was unexcited. Consumed by the vision of providing education for everyone he didn't want the overhead of even a free Open Source system. "What can we use that everyone already has?" he asked. [Kahn, 2006] My question then is the same as now, "How can you effectively manage a complex interface without tools?" But the scale of public engagement with the Kahn Academy has taught me an interface design lesson: maybe presentation doesn't matter as much as I've thought, and clearly not all teaching and learning needs to be supported within a community to be worthwhile. However, I'd still like the chance to improve on a great thing! Good design, like quality teaching doesn't have to be an ongoing expense, once the structure is in place.

Solutions

No critique is complete without solutions. Here are three simple improvements that the Kahn Academy could make to the user interface that would make a better experience for learners. Note that all of these changes follow established conventions for interface design.

1. Fix the site navigation. Make it consistent throughout Kahn Academy and make sure all the main areas are linked. This means that the exercise dashboard would have to be embedded in the main Kahn Academy site.
2. Improve access to titles by at least alphabetizing the subject index and ideally, adding a keyword Search utility.
3. Add visual clarity by adopting a simple layout grid and separate the Catalog content from the About Us content to open up the screen space.



Conclusions

The Kahn Academy is a disruptive institution. Salman Kahn sets an example for anyone who believes that quality education is a human right and a public necessity. But not everyone is as skilled and highly trained as he is. If members of the Texas School Board who voted this week to remove mention of slave trade from Social Studies curricula and replace it with "Atlantic triangular trade" [Castro, 2010] decide to start disseminating their ideas on YouTube we can only hope that the video quality is poor. Informal channels are potentially very powerful. Without adherence to meaningful standards of accuracy education runs the risk of becoming propaganda. But learners around the world are taking advantage of the Kahn Academy's rich offering to educate ourselves, we're not so worried about standards and plain grateful to have access to such a skilled teacher.

Works Cited

Castro, A. (2010) *Conservatives Make Changes to Texas Curriculum*. SF Gate. Accessed from: <http://www.sfgate.com/cgi-bin/article.cgi?f=/n/a/2010/05/20/national/a173107D89.DTL>

Kahn, S. (2006) Personal communication.

Kahn, S. (2010) *Kahn Academy Fact Sheet*. Accessed from: http://www.salkhan.com/downloads/factsheet_11_2009.pdf

Designing User Interfaces

Drupal
<http://www.drupal.com/>

Moodle
<http://moodle.org/>

National Governors Association (2010) *Common Core State Standards Initiative*. Accessed from: <http://www.corestandards.org/>