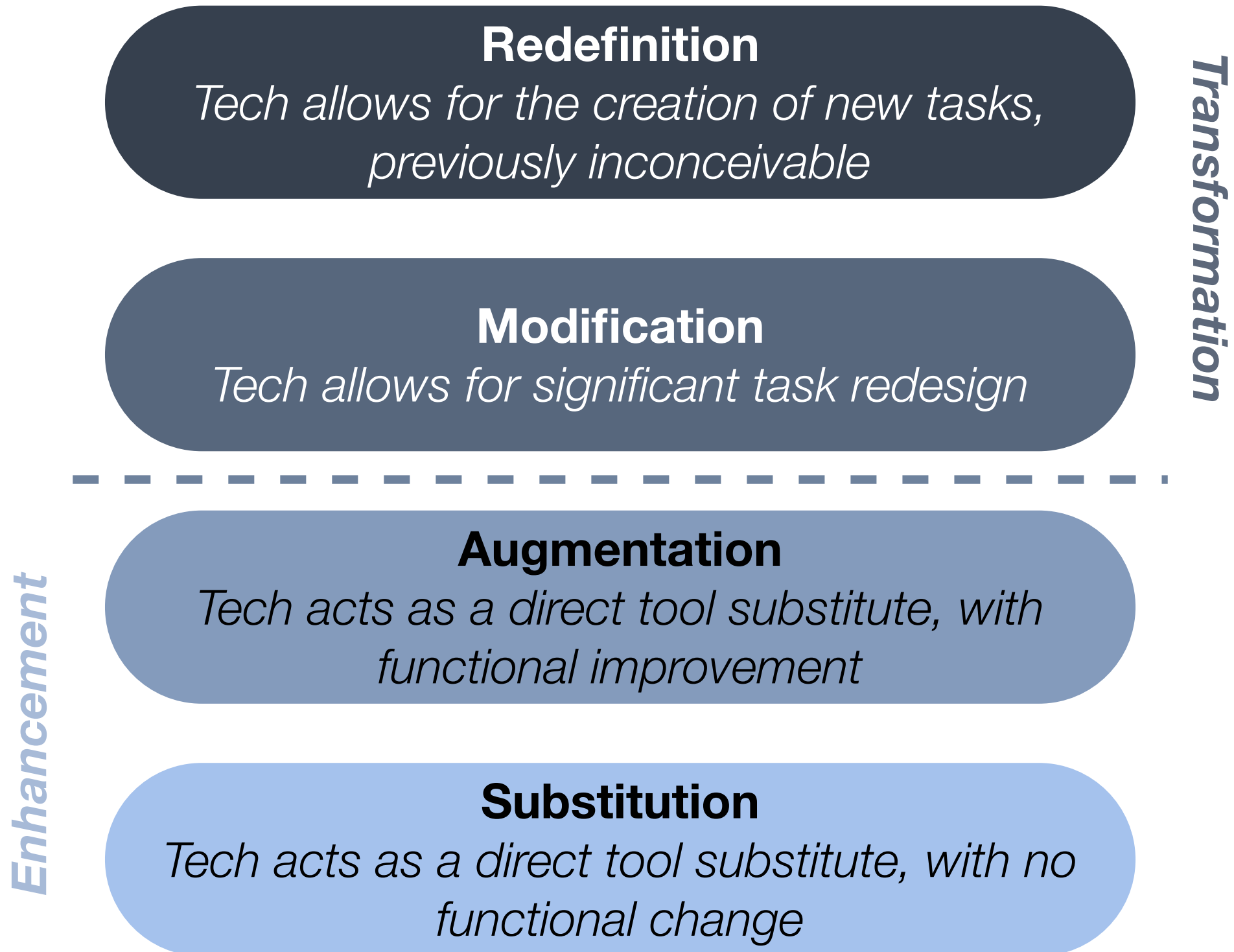


Four Variations On S.A.M.R. (And Three Fugues)

Ruben R. Puentedura, Ph.D.



Social Computing

Digital Storytelling

Social

Narrative

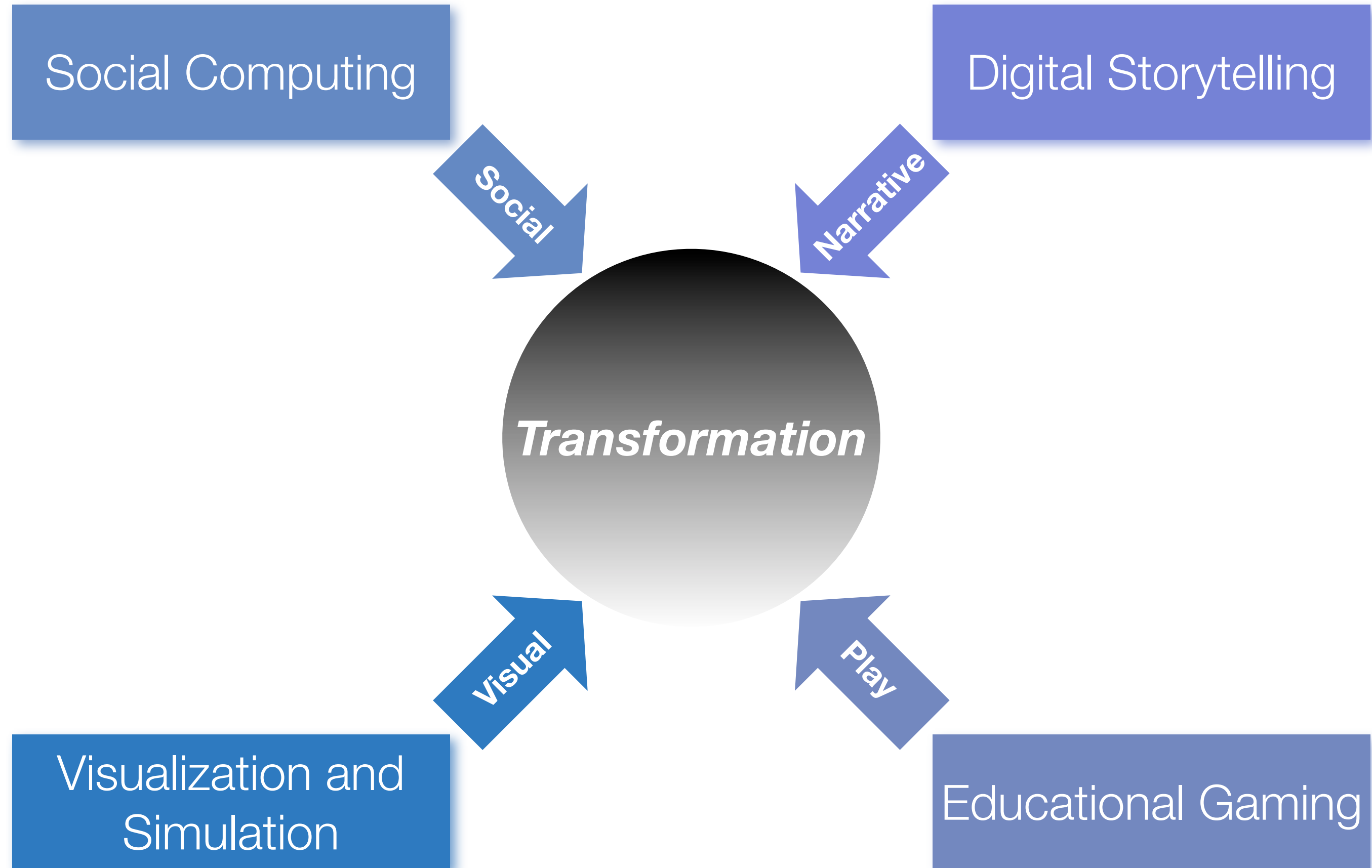
Transformation

Visual

Play

Visualization and
Simulation

Educational Gaming



I. Words and Stories

Marzano: Six Steps to Effective Vocabulary Instruction

- Step 1: The Teacher Provides a Description, Explanation, or Example of the New Term
- Step 2: Students Restate the Explanation of the New Term in Their Own Words
- Step 3: Students Create a Nonlinguistic Representation of the Term
- Step 4: Students Periodically Do Activities That Help Them Add to Their Knowledge of Vocabulary Terms
- Step 5: Periodically Students Are Asked to Discuss the Terms with One Another
- Step 6: Periodically Students Are Involved in Games That Allow Them to Play with the Terms

Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

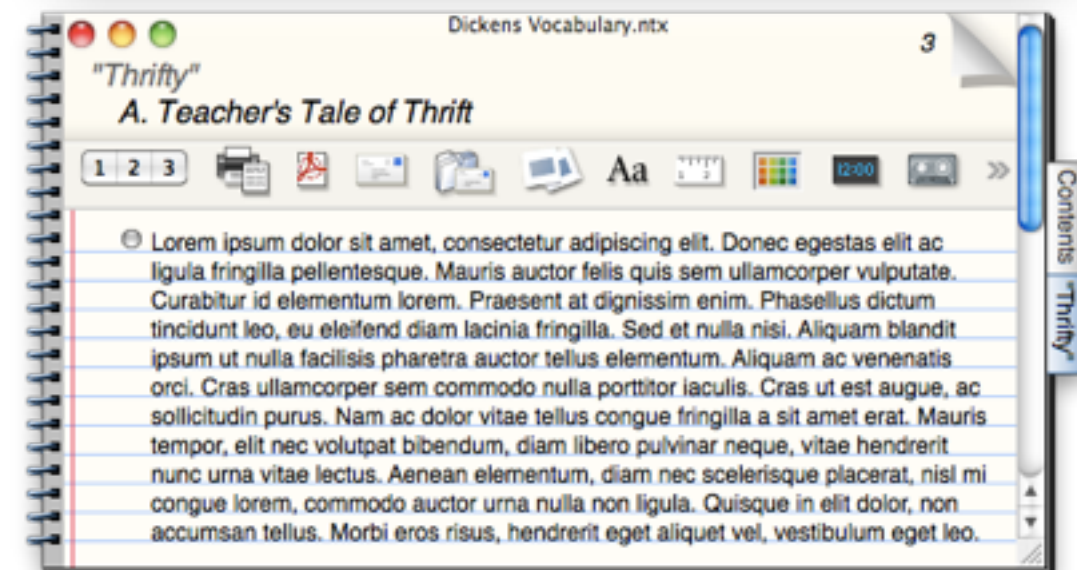
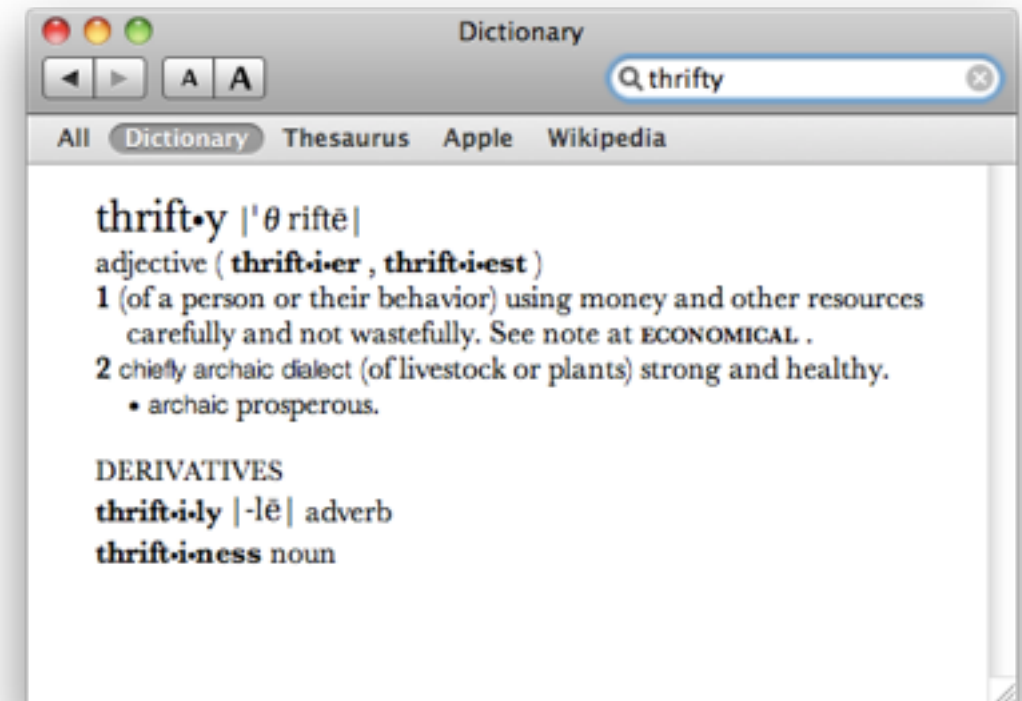
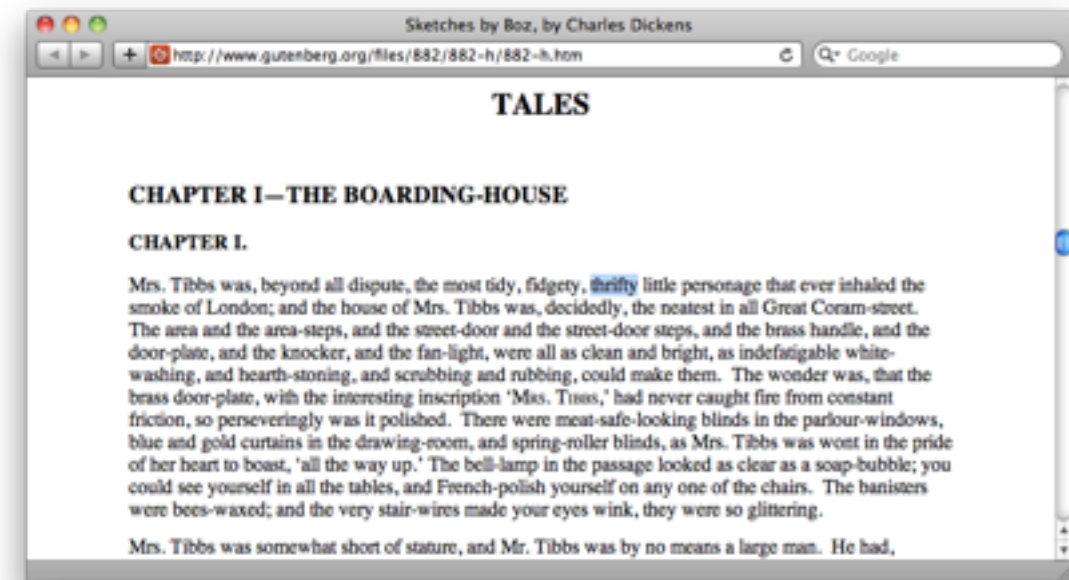
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change

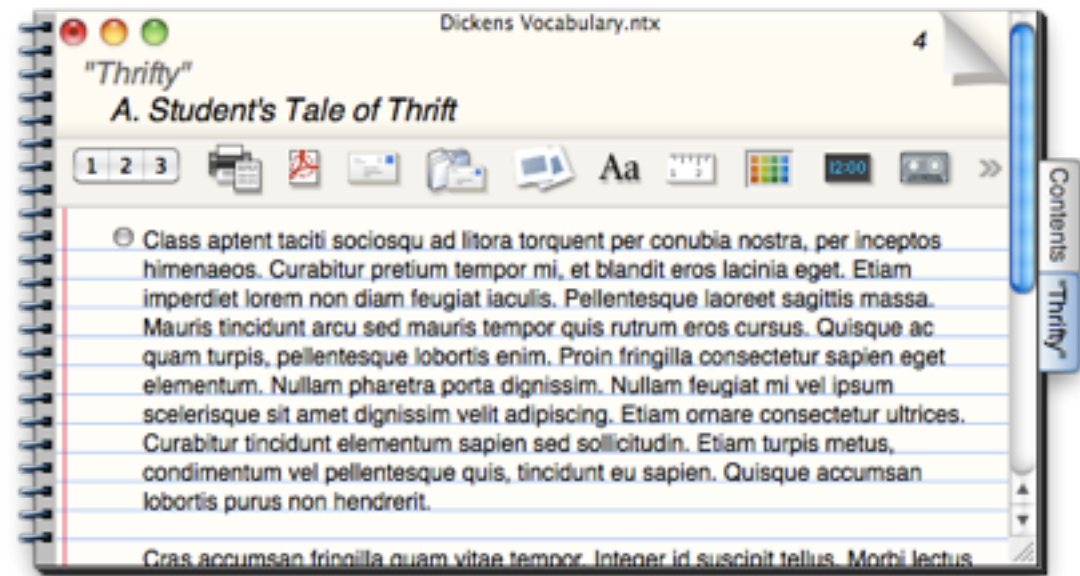
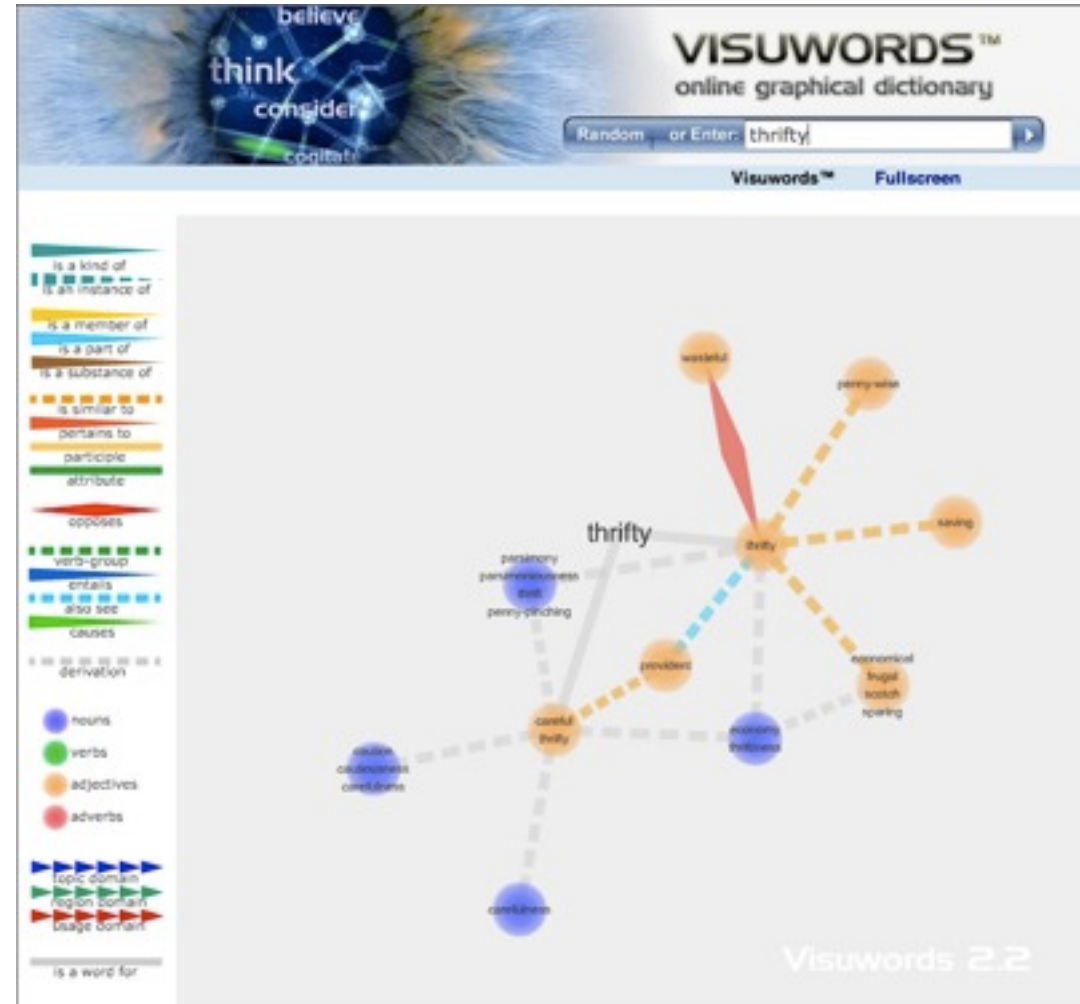


Redefinition

Augmentation

*Tech acts as a direct tool substitute,
with functional improvement*

Substitution



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

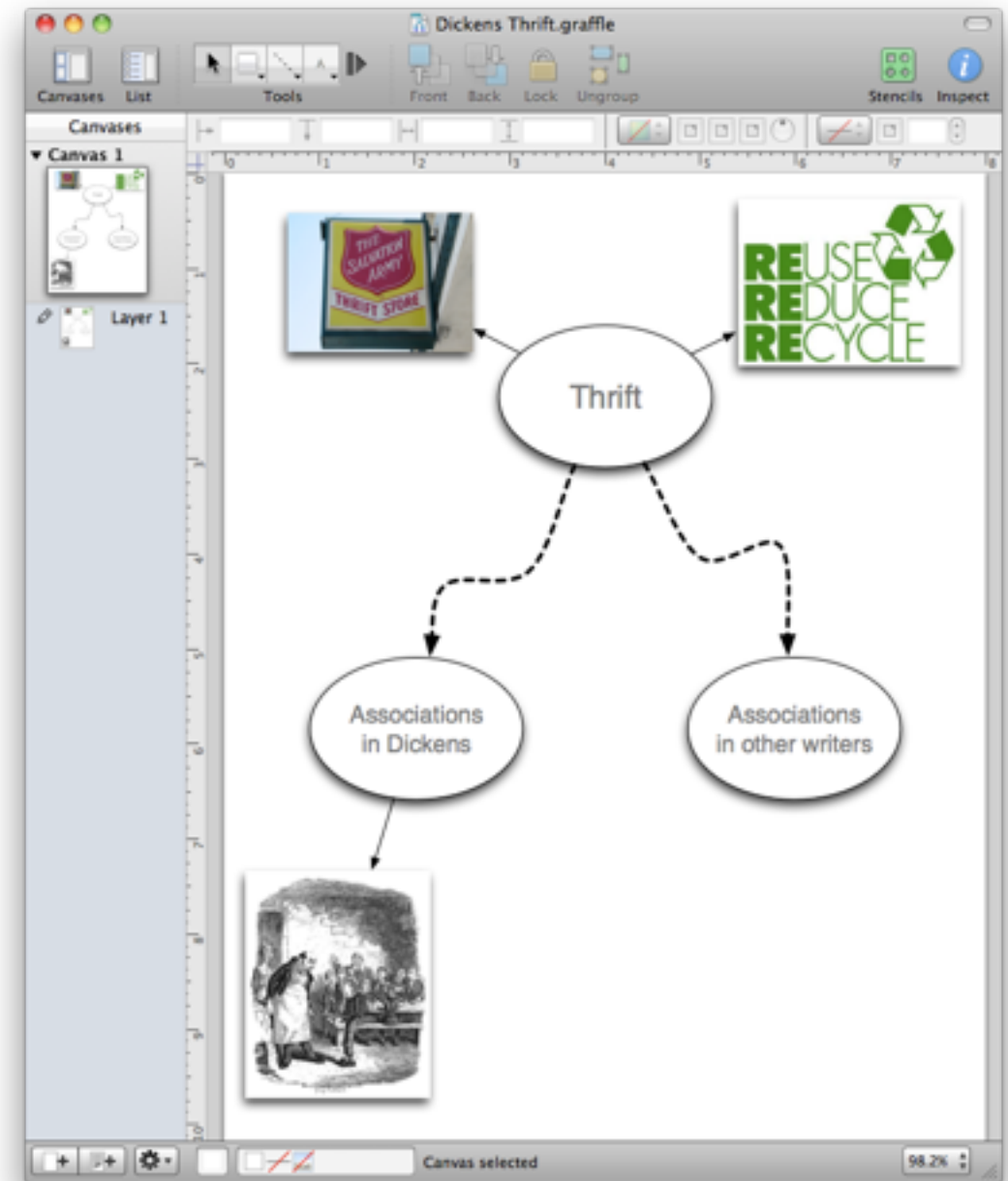
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

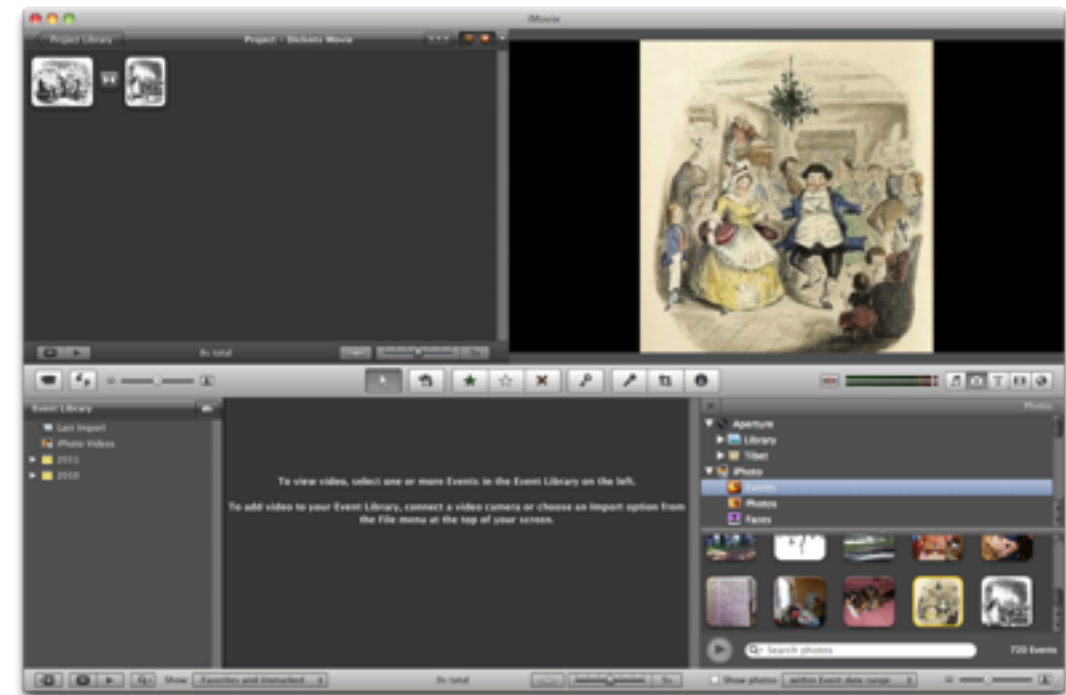
Tech allows for significant task redesign

Augmentation

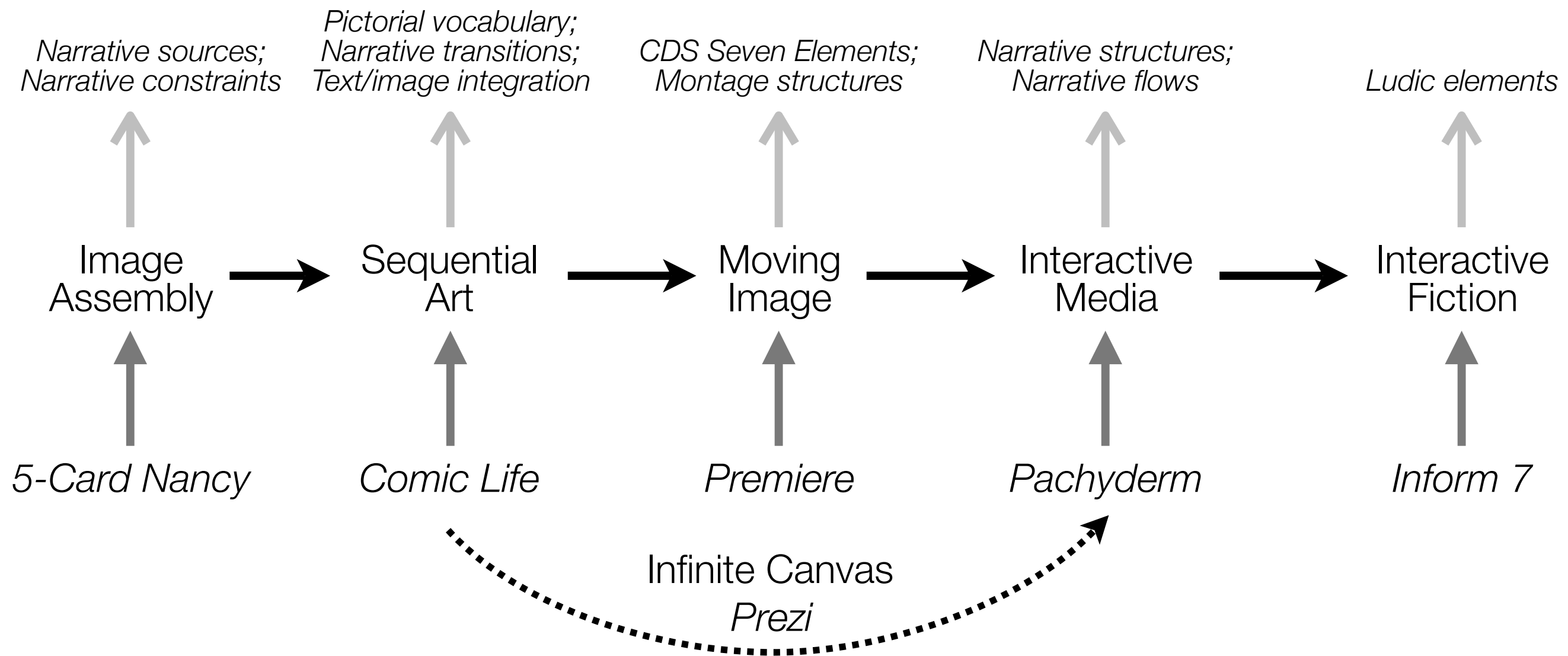
Tech acts as a direct tool substitute, with functional improvement

Substitution

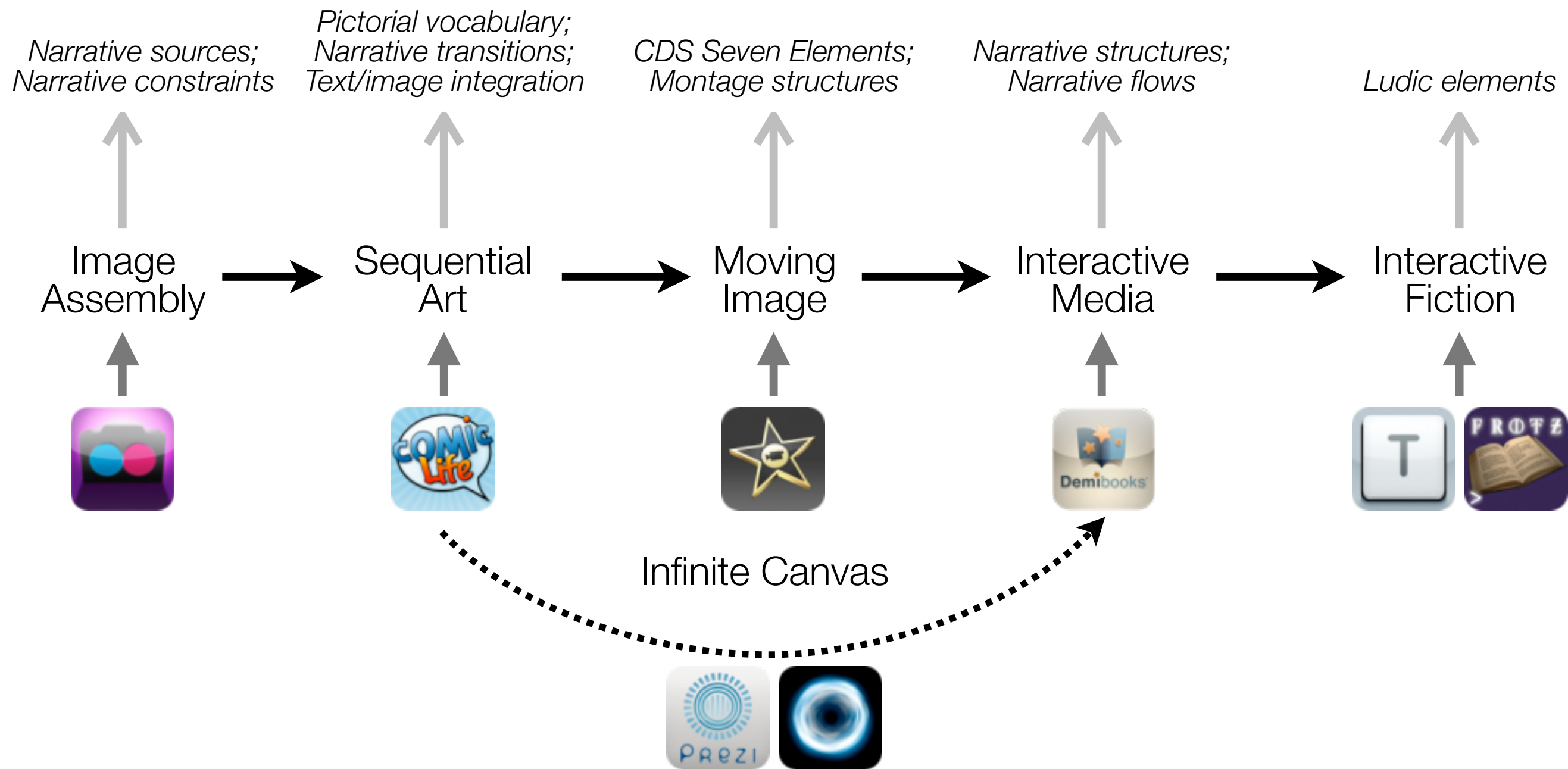
Tech acts as a direct tool substitute, with no functional change

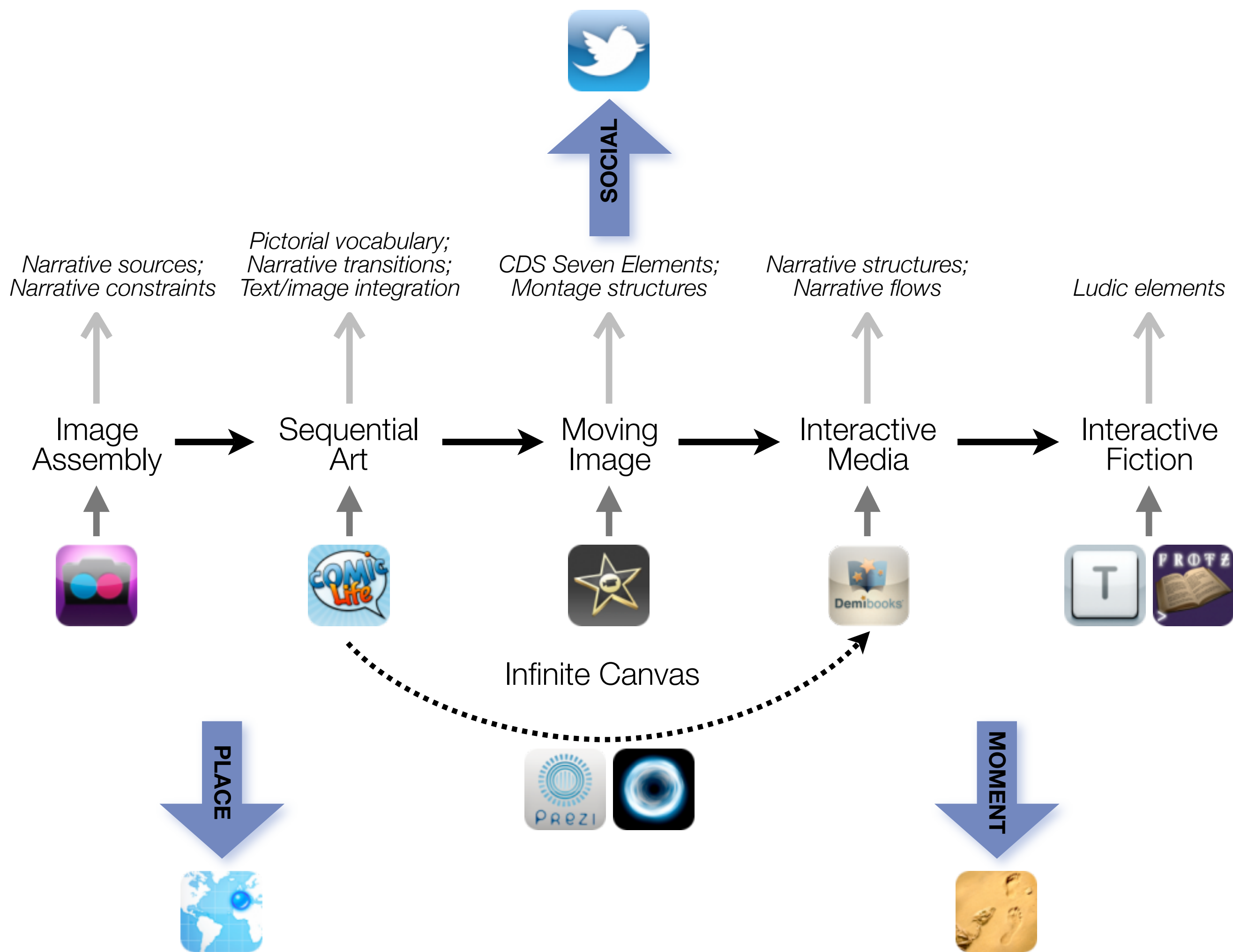


1. Digital Storytelling as Domain









II. Math, Visualized

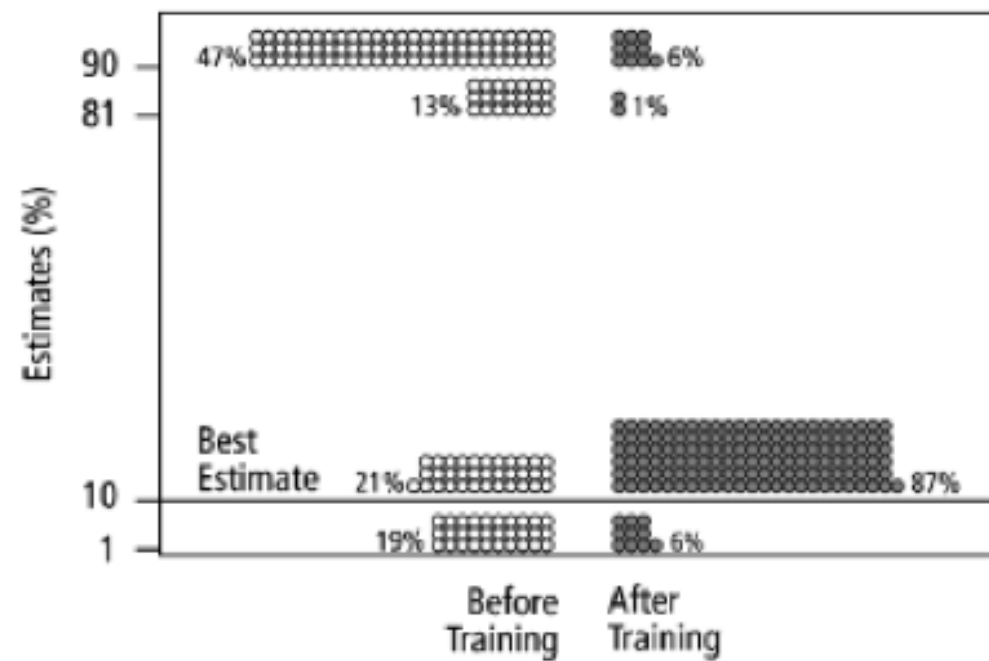


Fig. 2. Estimates by 160 gynecologists of the probability that a woman has breast cancer given a positive mammogram, before and after receiving training in how to translate conditional probabilities into natural frequencies.

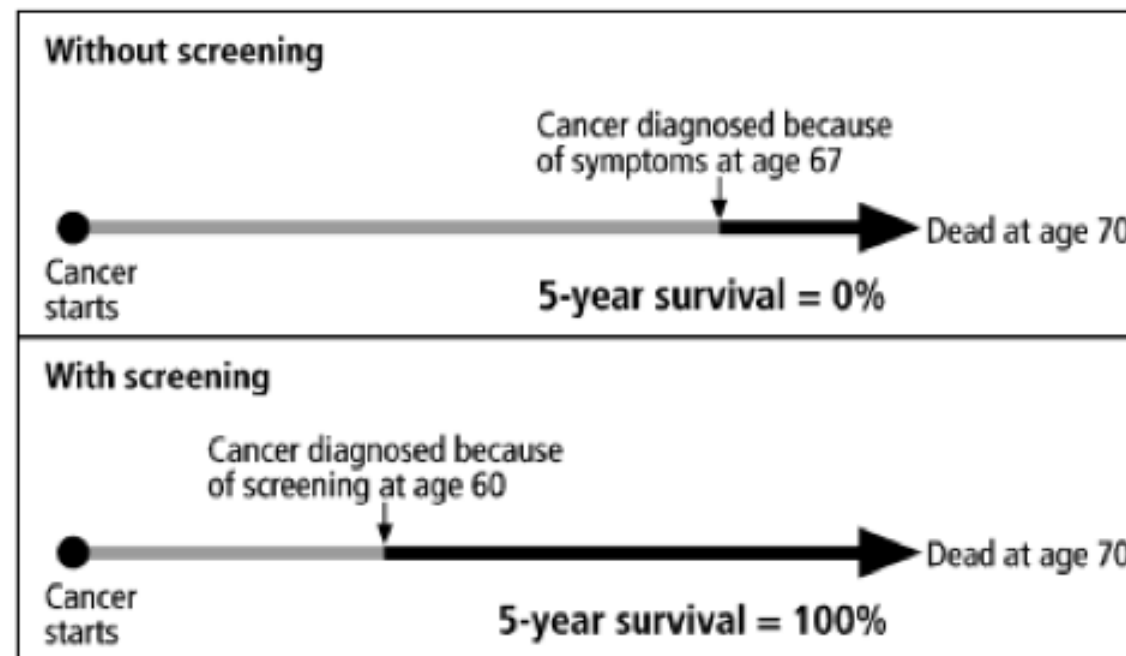


Fig. 4. Lead-time bias. Even if the time of death is not changed by screening—and thus no life is saved or prolonged—advancing the time of diagnosis in this way can result in increased 5-year survival rates, causing such statistics to be misleading.

Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change

The screenshot shows a web page titled "AP Statistics Curriculum 2007 Bayesian Prelim". It features a navigation sidebar on the left with links like "Main Page", "Community portal", and "Recent changes". The main content area includes a "Contents" table of contents, an "Introduction" section explaining Bayes Theorem with the formula $P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)}$, and an "Example" section with a probability problem and its solution. The solution involves calculating $P(D|T)$ using Bayes' theorem, resulting in 0.3231293.

AP Statistics Curriculum 2007 Bayesian Prelim

Contents (xiii)

- 1 Probability and Statistics Ebook - Bayes Theorem
 - 1.1 Introduction
 - 1.2 Example
 - 1.3 Bayesian Statistics
- 2 See also
- 3 References

Probability and Statistics Ebook - Bayes Theorem

Introduction

Bayes Theorem, or "Bayes Rule" can be stated succinctly by the equality

$$P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)}$$

In words, "the probability of event A occurring given that event B occurred is equal to the probability of event B occurring given that event A occurred times the probability of event A occurring divided by the probability that event B occurs."

Bayes Theorem can also be written in terms of densities or likelihood functions over continuous random variables. Let's call $f(\cdot)$ the density (or in some cases, the likelihood) defined by the random process x . If X and Y are random variables, we can say

$$f(Y|X) = \frac{f(X|Y) \cdot f(Y)}{f(X)}$$

Example

Suppose a laboratory blood test is used as evidence for a disease. Assume $P(\text{positive Test}|\text{Disease}) = 0.95$, $P(\text{positive Test}|\text{no Disease}) = 0.01$ and $P(\text{Disease}) = 0.005$. Find $P(\text{Disease}|\text{positive Test})$?

Denote D = (the test person has the disease), D^c = (the test person does not have the disease) and T = (the test result is positive). Then

$$P(D|T) = \frac{P(T|D)P(D)}{P(T)} = \frac{P(T|D)P(D)}{P(T|D)P(D) + P(T|D^c)P(D^c)} = \frac{0.95 \times 0.005}{0.95 \times 0.005 + 0.01 \times 0.995} = 0.3231293.$$

Bayesian Statistics

What is commonly called Bayesian Statistics is a very special application of Bayes Theorem.

Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

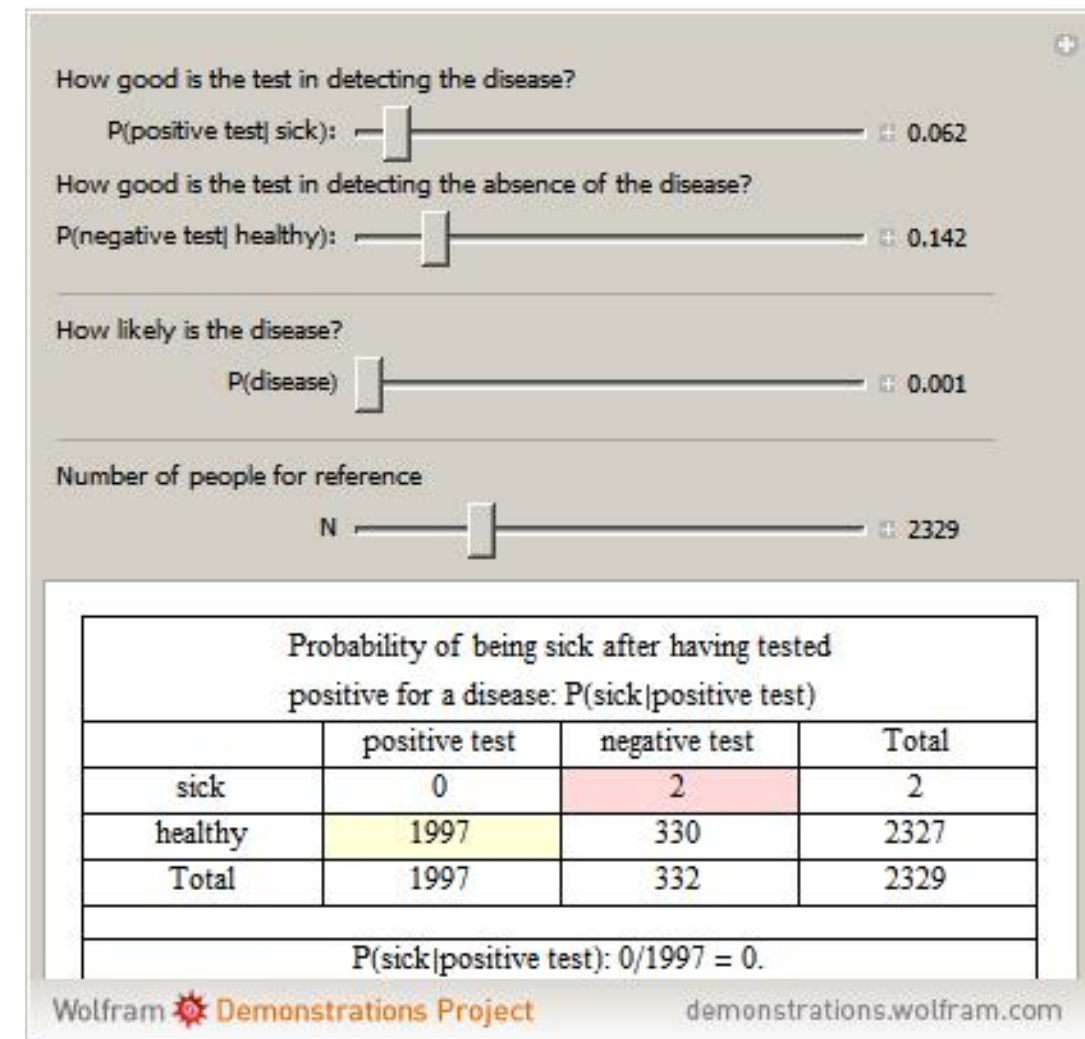
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

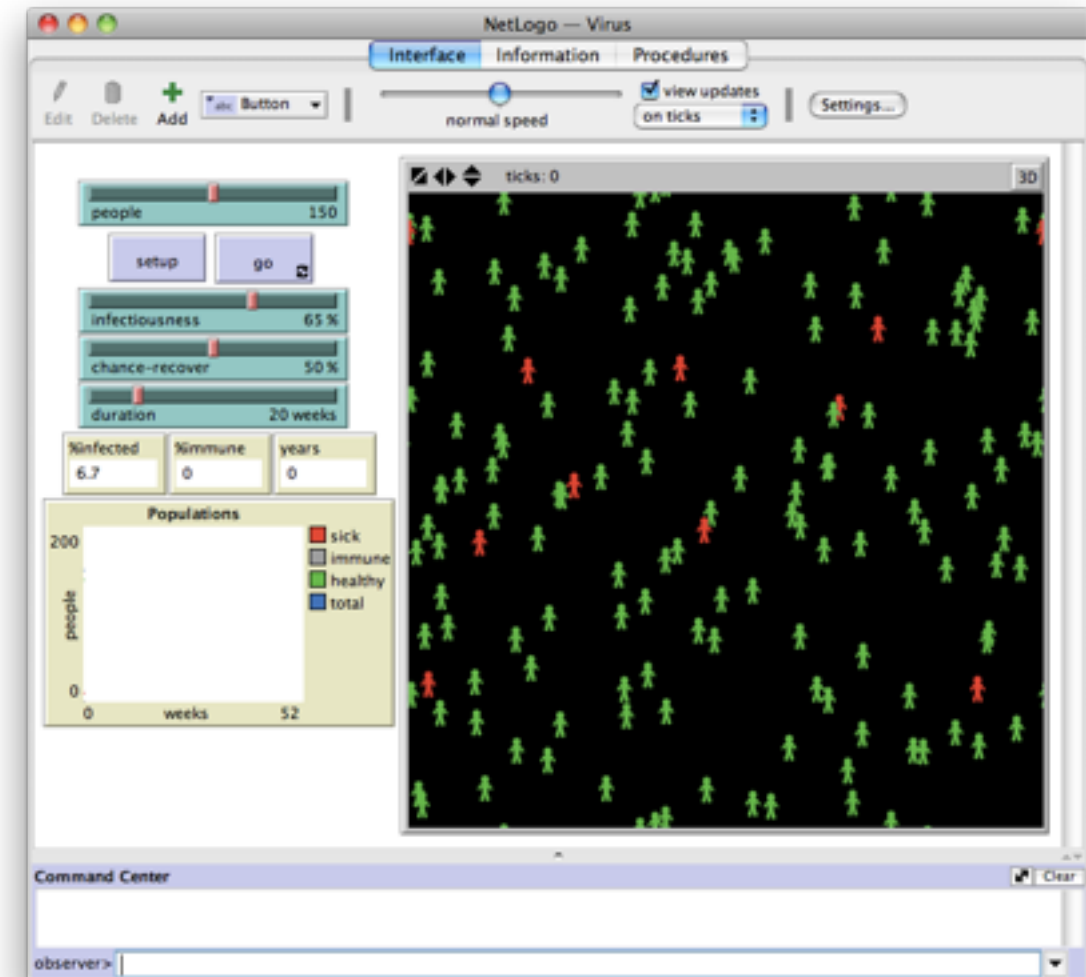
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

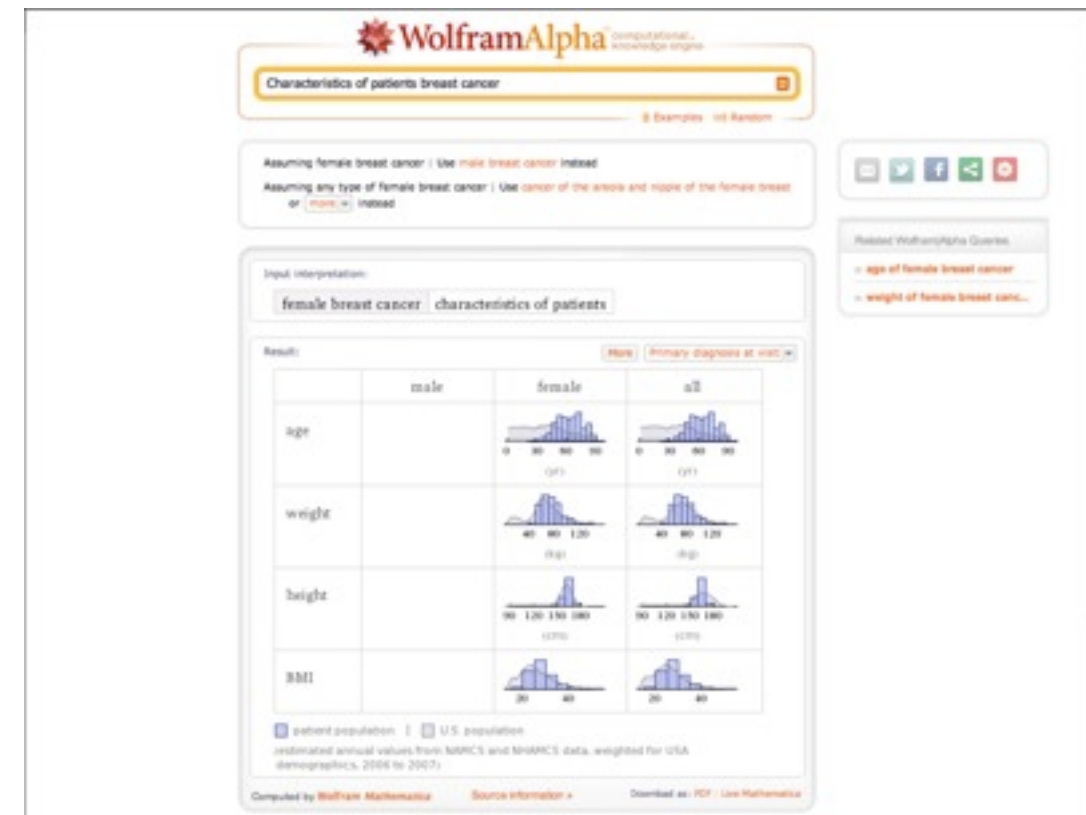
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



2. Of Mobility







III. Engaging the World

Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

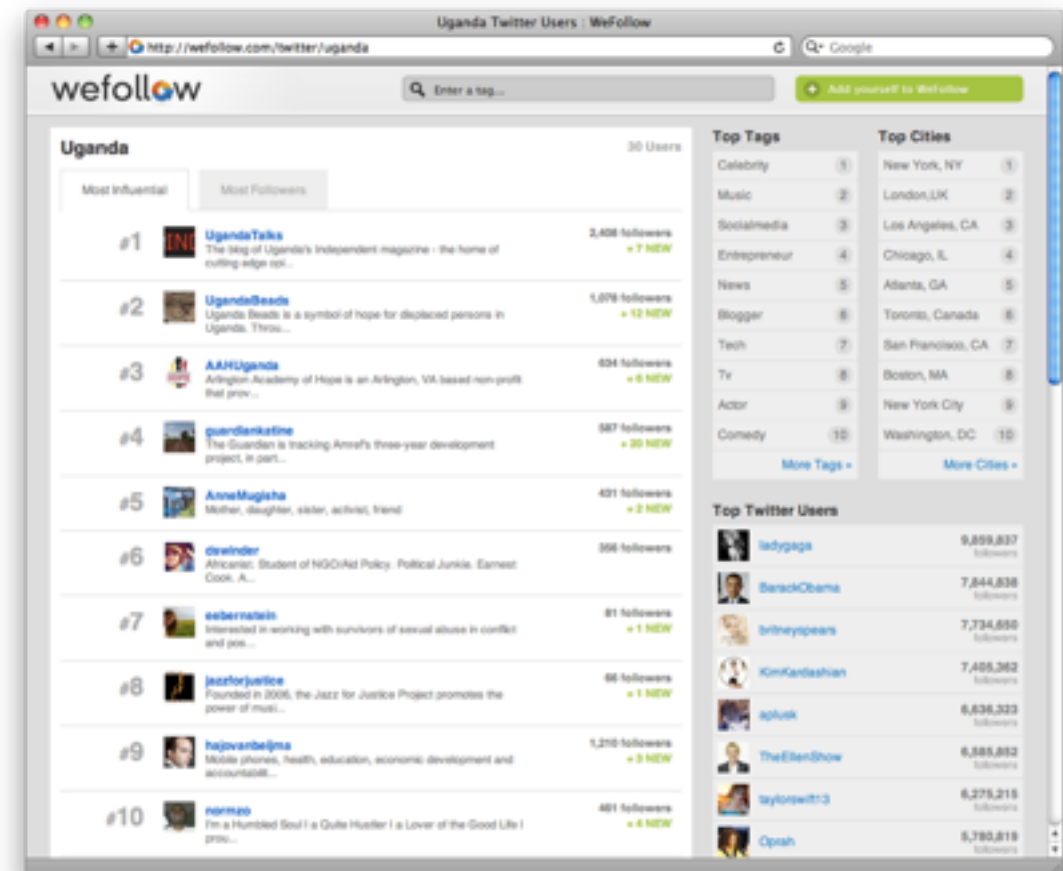
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

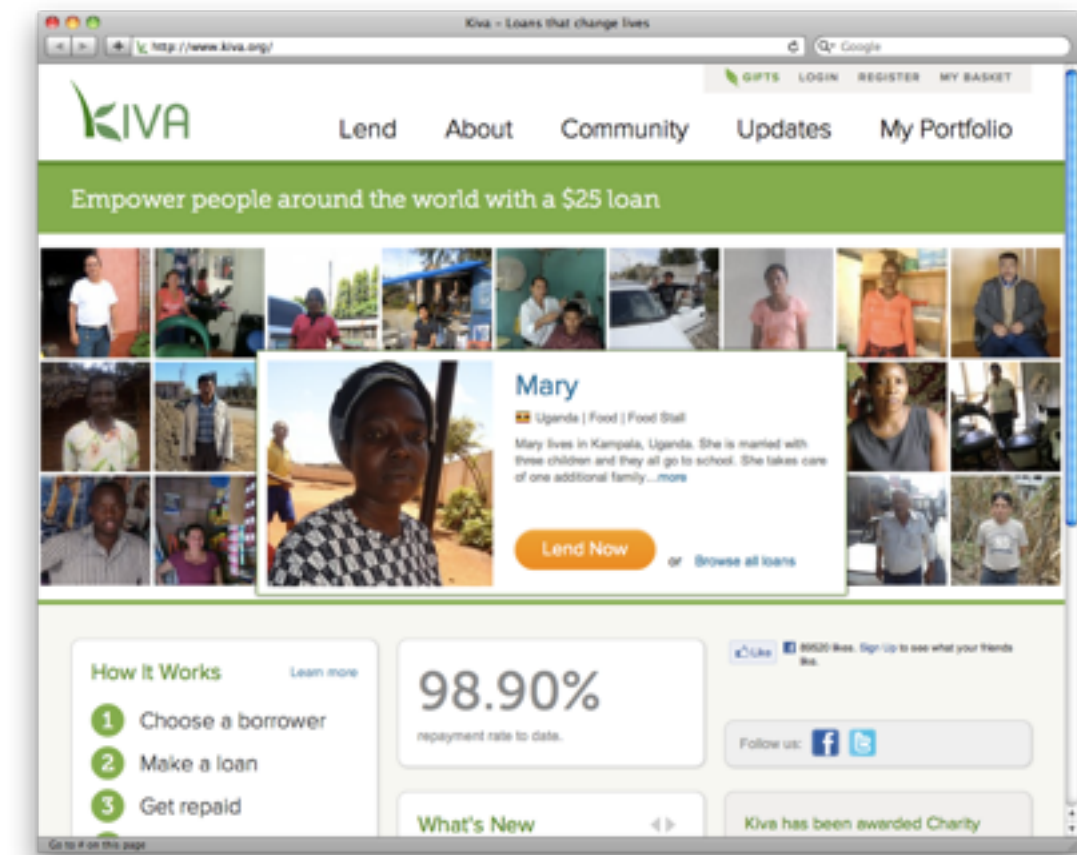
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



3. The Place of Learning





Lake Helen, Florida 20.0 miles

For the high-altitude lake in Lassen Volcanic National Park, see Lake Helen (Lassen Peak) Lake Helen is a city in Volusia County, Florida, United



WIKITUDE



radius
31.71 mi..



GPS





Learn
any topic

Create
a ShowMe

[BLOG](#)
[LOGIN](#) · [SIGNUP](#)

Learning and teaching made simple

ShowMe is an open learning community where you can teach or learn anything. Watch great lessons for free, or create your own with the iPad app.

Get Started →

Feedback

Featured

[All topics](#) →

3 498 2:16

Multiplying or dividing with...



by **Sarah Burson**

In: Math, Algebra, division, multiplication, arithmetic

8 976 2:14

Subtracting Negative Numbers



by **Ryan Halverson**

1 344 2:35

A one-to-one and onto function



by **Professor Zer**

In: discrete math



Download the app

One-tap record ShowMes
Share ShowMes with anyone
Zero training required

Available on the
App Store

IV. The Playful Historian

Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

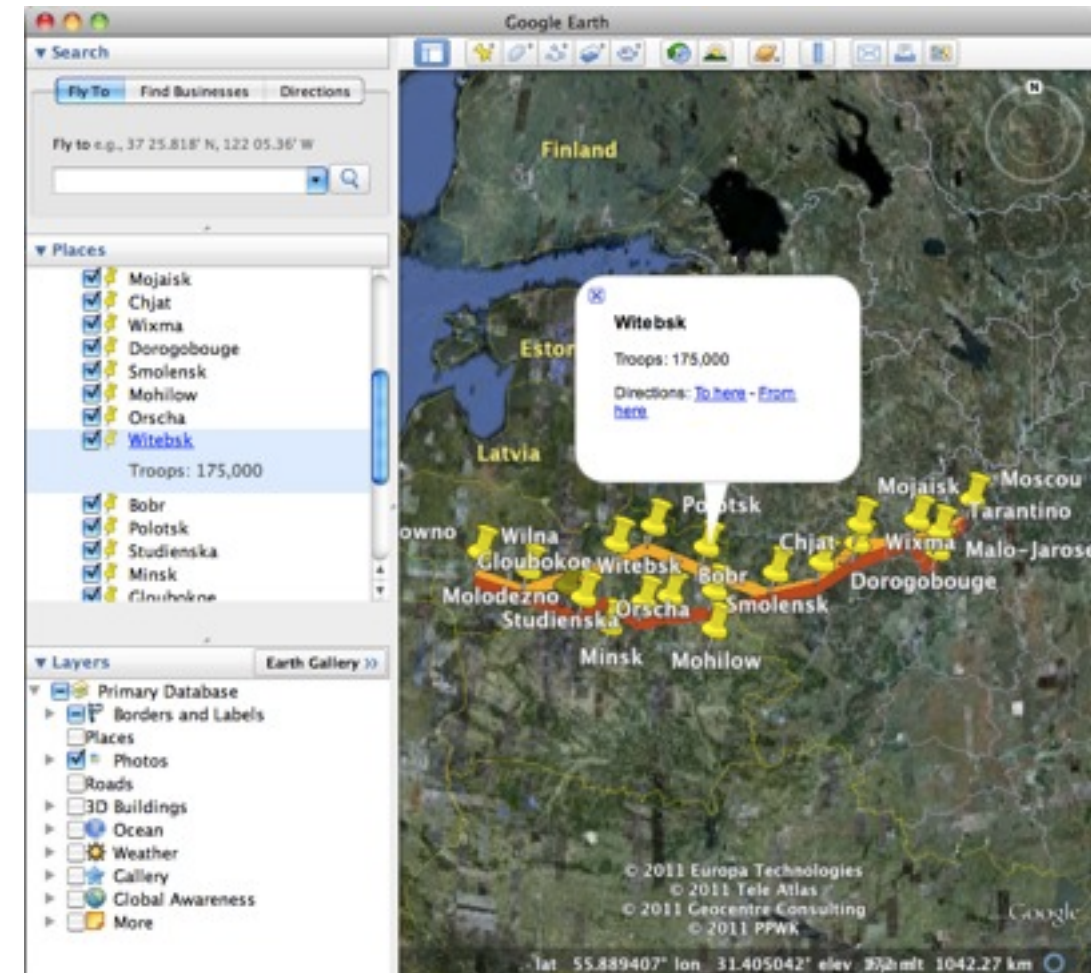
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

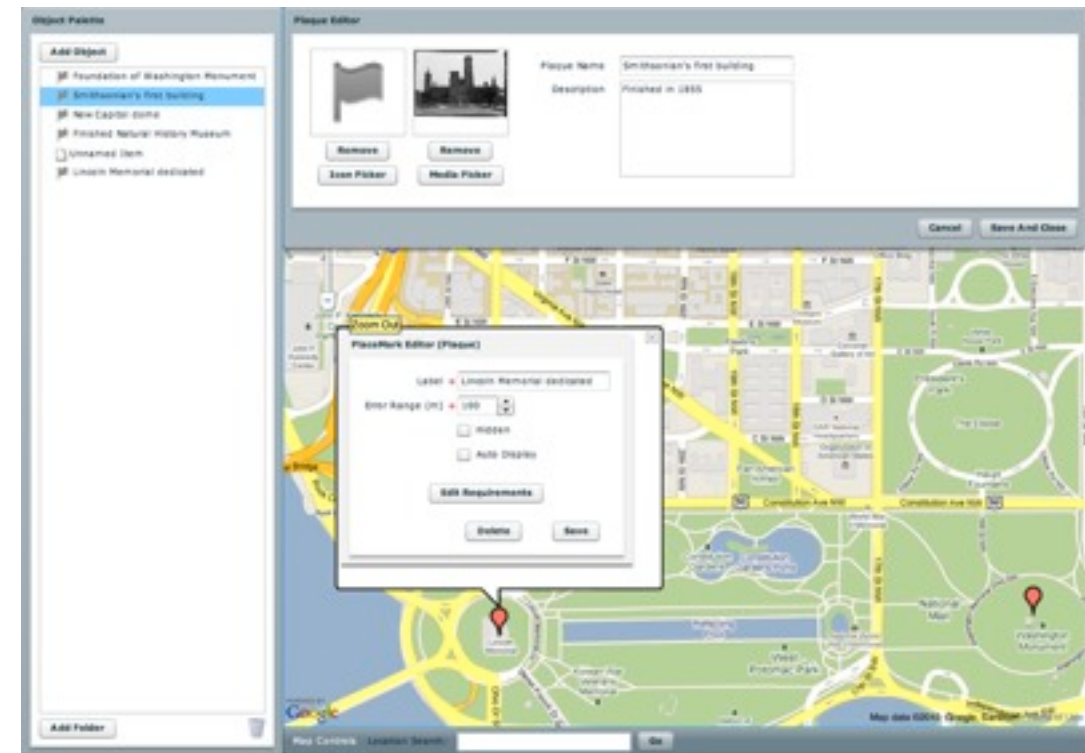
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change



Additional Resources

Resources

SAMR

- Ruben R. Puentedura, *Transformation, Technology, and Education*. (2006) Online at: <http://hippasus.com/resources/tte/>
- Ruben R. Puentedura, *As We May Teach: Educational Technology, From Theory Into Practice*. (2009) Online at: <http://tinyurl.com/aswemayteach>

Digital Storytelling

- Ruben R. Puentedura, “Digital Storytelling: An Alternative Instructional Approach”. *2008 NMC Summer Conference Proceedings*. (2008) Online at: <http://www.nmc.org/pdf/2008-Puentedura.pdf>
- Ruben R. Puentedura, “The Infinite Canvas Reloaded: Digital Storytelling, Webcomics, and Web 2.0”. *2009 NMC Summer Conference Proceedings*. (2010) Online at: <http://wp.nmc.org/proceedings2009/papers/infinite-canvas/>
- Ruben R. Puentedura, “Mapping the Digital Storytelling Domain: Notes for a Future Cartography”. *2010 NMC Symposium on New Media and Learning*. (2010) Online at: <http://www.nmc.org/preso/7724>

Defining Mobile Devices/The Lively Sketchbook

- Ruben R. Puentedura, “Drawing On The Lively Sketchbook”. *Connect@NMC Talks*. (2010) Online at: <http://www.nmc.org/connect/2010/april/16>
- Ruben R. Puentedura, “The Lively Sketchbook”. (2010) Online at: http://www.hippasus.com/rrpweblog/archives/2010_01.html

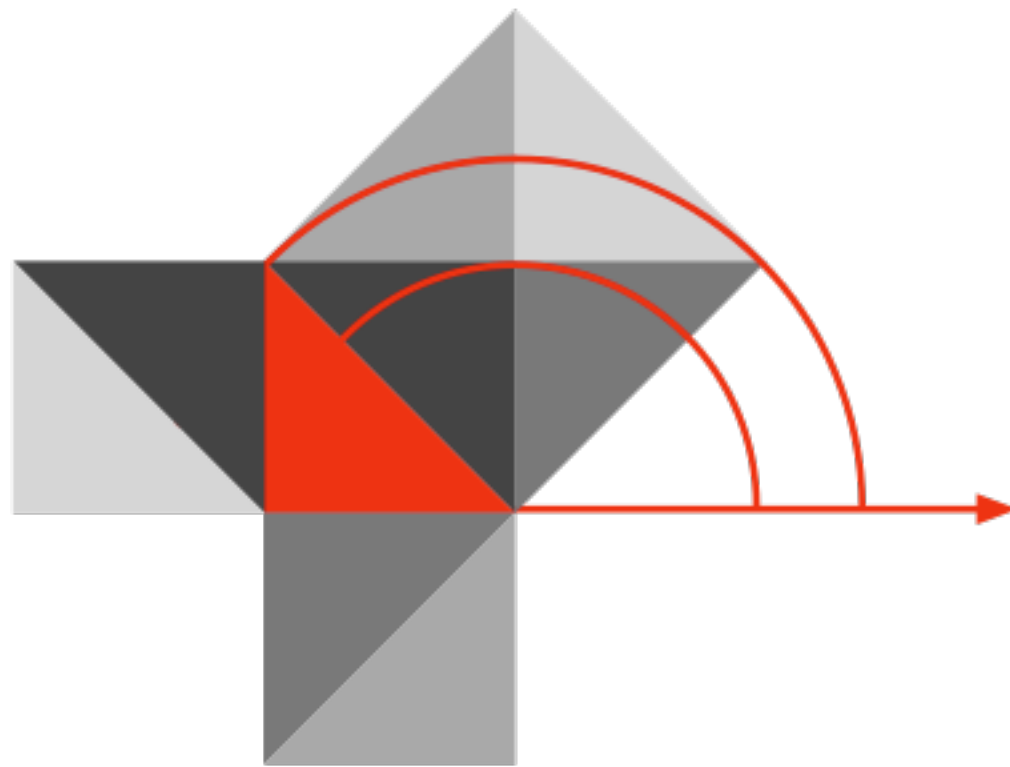
The Curiosity Amplifier

- John Seely Brown. “A New Culture of Learning”. NMC Summer Conference, Closing Keynote. (2010) Online at: <http://www.nmc.org/2010-summer-conference/jsb-keynote-video>

Photo Credits

- *iPad in Subway*: Takashi M
- *YouTube + iPad + Hanalei = Happiness*: Wayan Vota
- *Parcours-jeu multimedia : Les métiers du musée*: Jean-Pierre Dalbéra

Hippasus



Blog: <http://hippasus.com/rrpweblog/>

Email: rubenrp@hippasus.com

Twitter: @rubenrp

This work is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 3.0 License.

