



# Visual Crowd-learning

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# PROBLEM

BE in Computer Science  
BE in Information Technology

Very Difficult

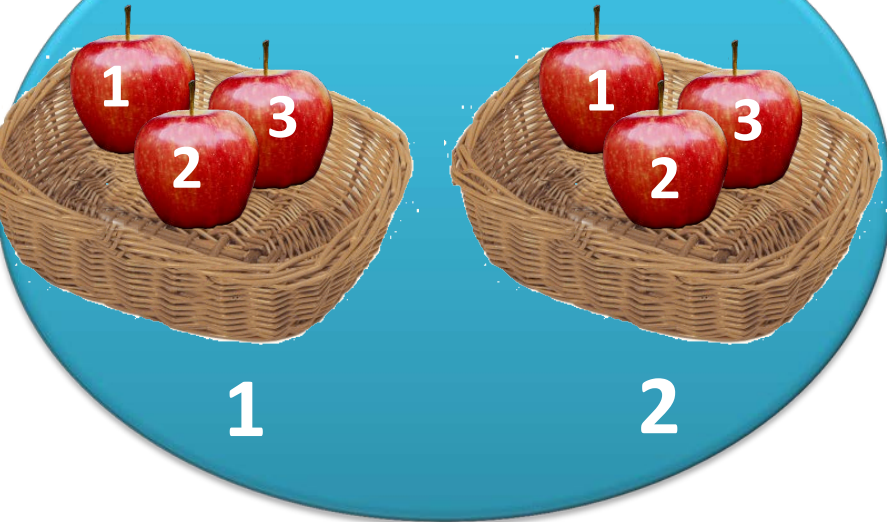
36 Credits / Semester

Studied & Experienced many  
Learning Methodologies

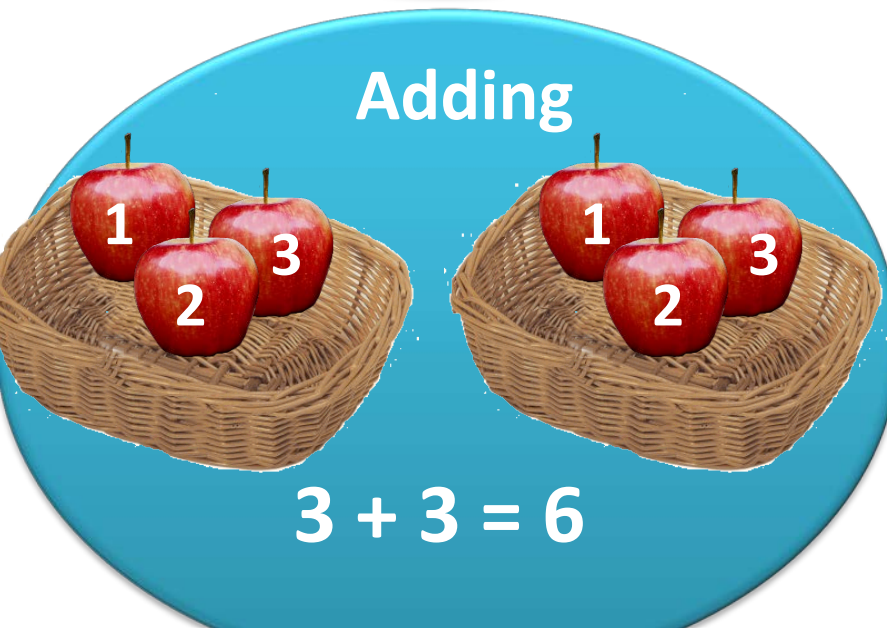


# SOLUTION: Multiplication

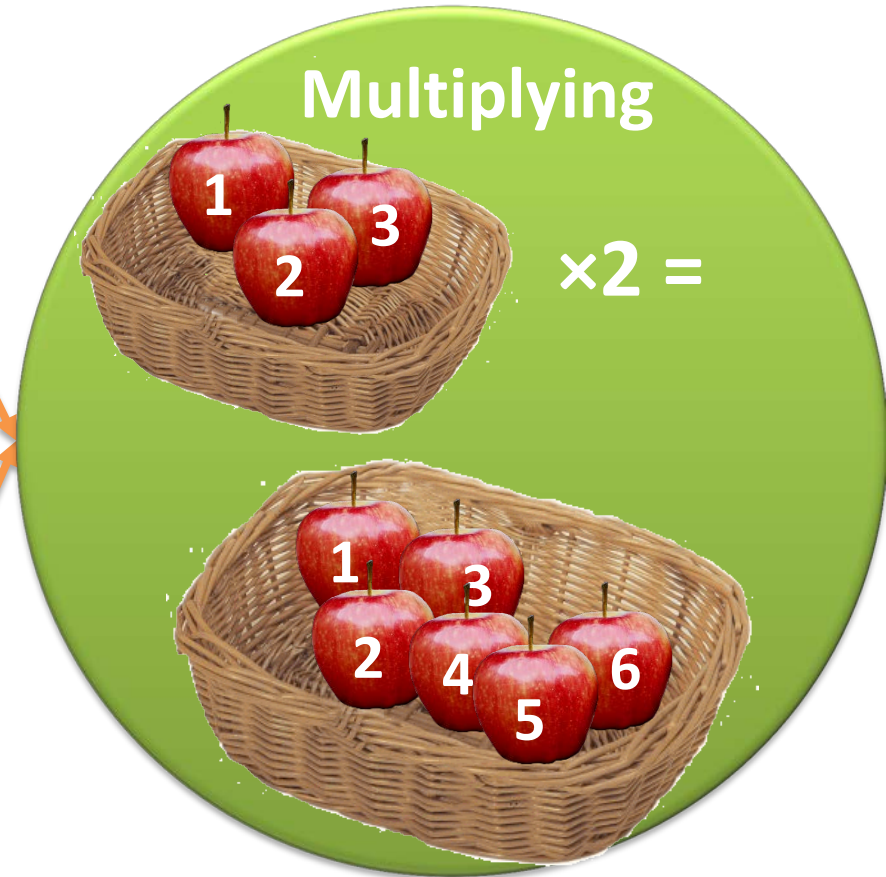
Counting



Adding

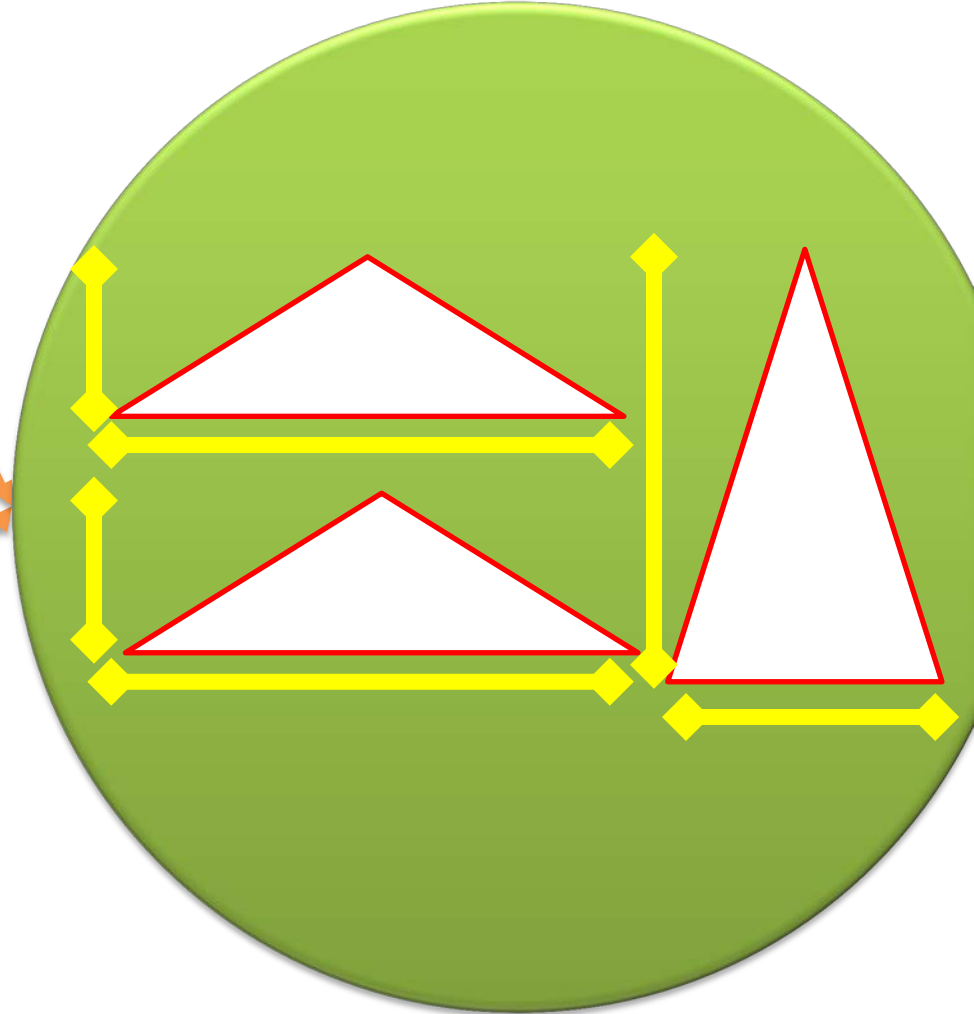
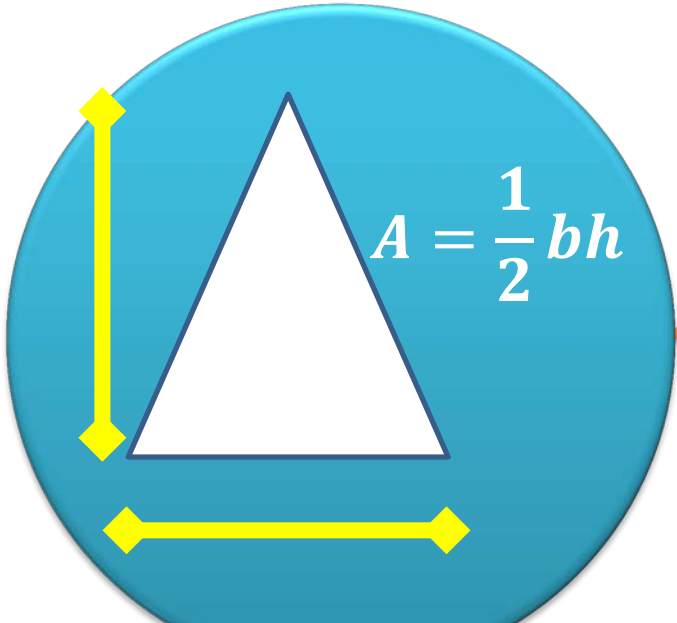


Multiplying





# SOLUTION: Area of a Polygon



## Affordances

The word affordance was coined by the perceptual psychologist J. J. Gibson to refer to the actionable properties between the world and an actor (a person or animal). To Gibson, affordances are relationships. They exist naturally: they do not have to be visible, known, or desirable. Affordances, both real and perceived, play very different roles in physical products than they do in the world of screen-based products. The affordance exists independently of what is visible on the screen. Affordances specify the range of possible activities, but affordances are of little use if they are not visible to the users. Hence, the art of the designer is to ensure that the desired, relevant actions are readily perceivable.

Forum

Type 1

Type 2

Misuse 2

Misuse 1

Vs Convention

## Perceived Affordances

Perceived affordances are visual to the users, so in graphical, screen-based interfaces, the designer primarily can control only perceived affordances. In traditional computer screen when designers put an icon, cursor, or other target on the screen, they have added only visual feedback that advertise the affordances and are just perceived affordances. Because the affordance exists independently of what is visible on the screen.

## Symbolic Communication

Adding some graphical depiction suggesting the user a certain action is not affordance, either real or perceived. It is a symbolic communication.

## Misuse of Affordance

In today's screen design sometimes the cursor shape changes to indicate the desired action (e.g., the change from arrow to hand shape in a browser), but this is a convention not an affordance.

The cursor shape is visual information: it is a learned convention. When you learn not to click unless you have the proper cursor form, you are following a cultural constraint.

## Convention vs Affordance

Affordances reflect the possible relationships among actors and objects. They are properties of the world. Conventions, conversely, are arbitrary, artificial, and learned. Once learned, they help us master the intricacies of daily life, whether they be conventions for courtesy, for writing style, or for operating a word processor.

## Cultural Constraints

## Convention

It prohibits some activities and encourages others. A convention is a cultural constraint, one that has evolved over time. Conventions are not arbitrary: they evolve; they require a community of practice. They are slow to be adopted and, once adopted, slow to go away.

Forum

Vs Affordances

Evolved

**EXPERIMENT**  
University Courses

Standardized  
Concept Maps

Multimedia

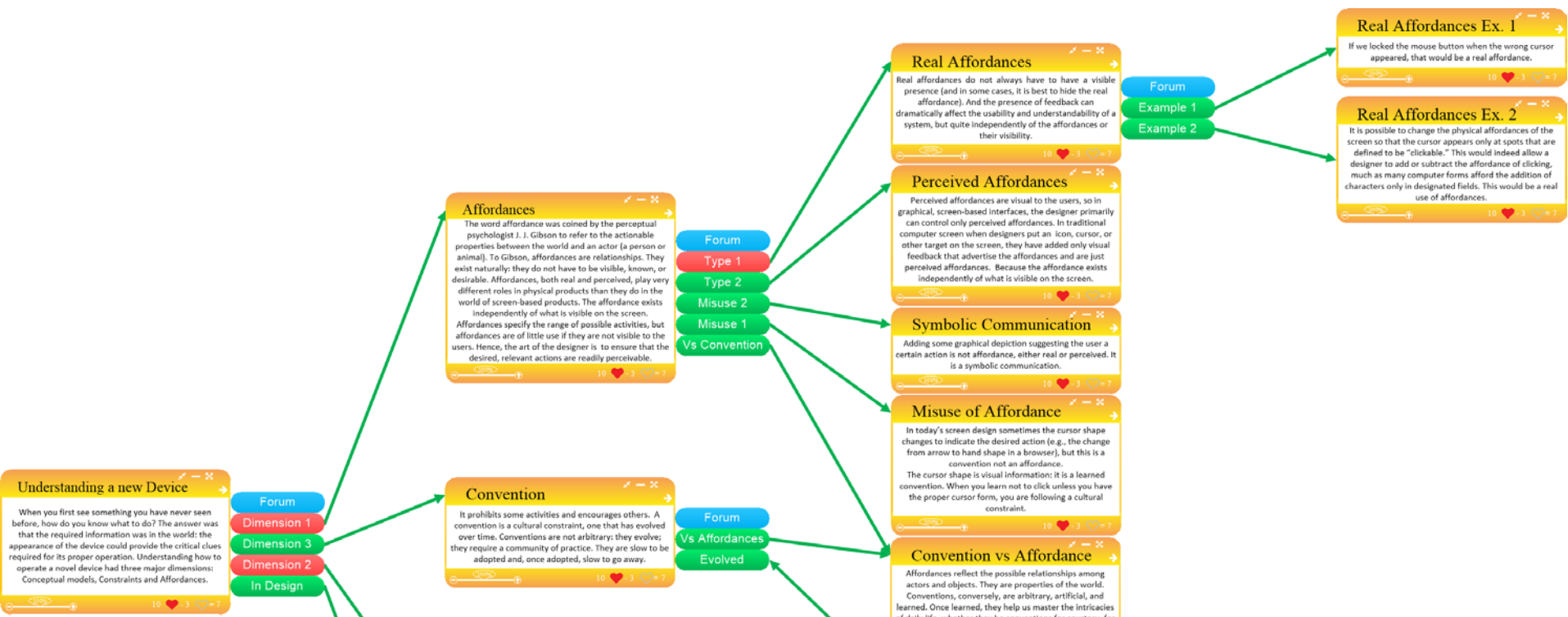
Advanced Network

Strategic Management

**Result: Just use [1knol.org](http://1knol.org)  
for the Final Exam.**



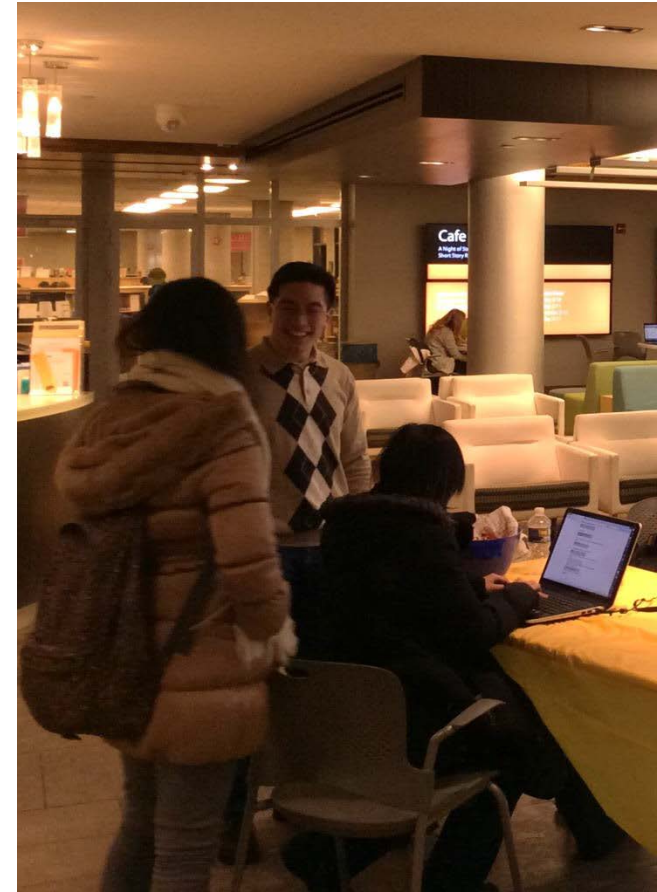
# Collaborative Concept-mapping system





## Value Proposition

1. **Save Time & Effort:**  
Faster, more persistent learning
2. **Quality:** Reputation system
3. **\$\$:** Earn as you contribution

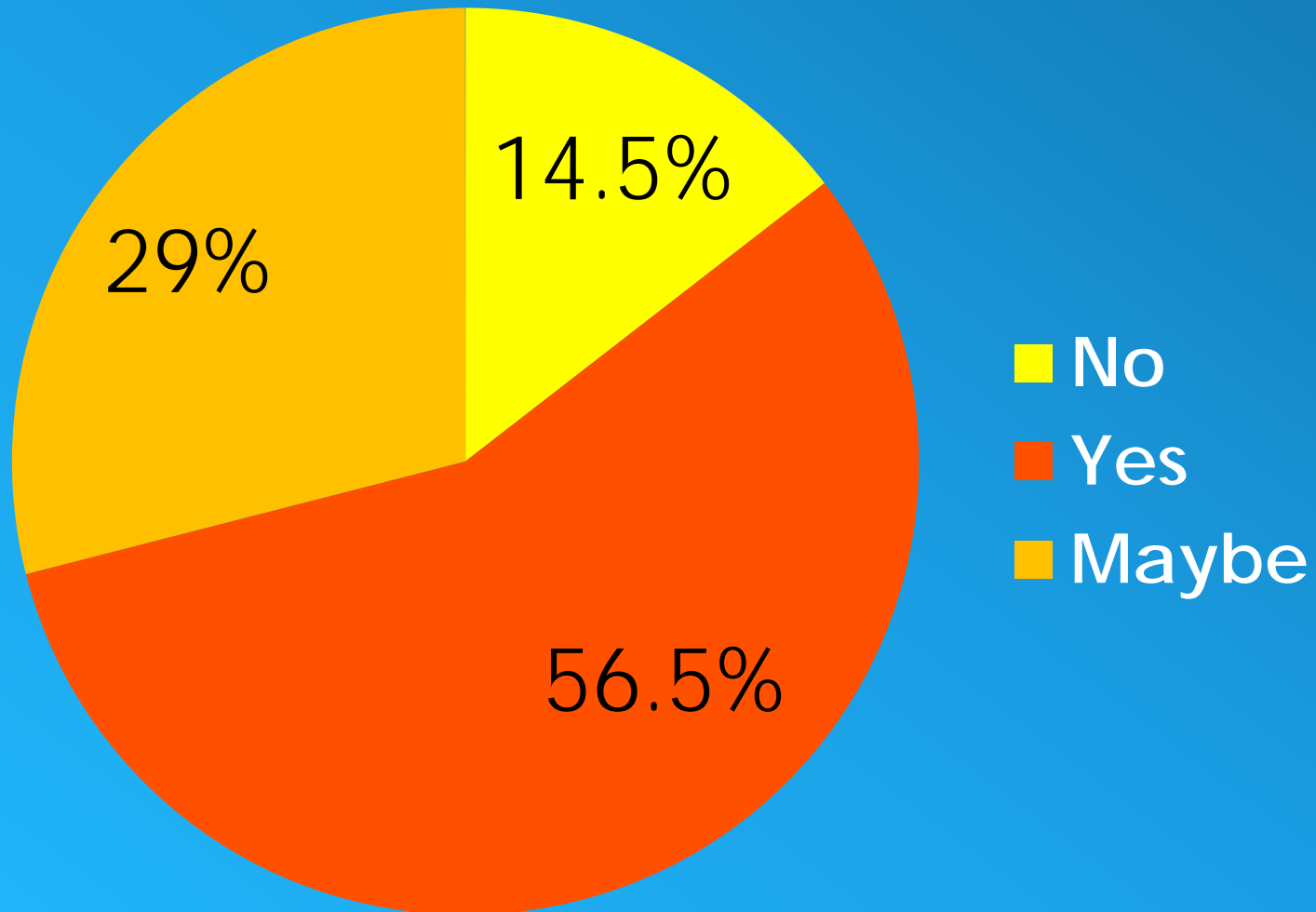






# CUSTOMER DISCOVERY

130+ Students interviewed:





# CUSTOMER DISCOVERY

## 28 Student Majors:

Neuroscience	BCN	Biochemistry	Biology
Biostatistics	Bio-molecular Sciences	BUMS	English
Foreign Languages	Business	Chemistry	Communications
Computer Science	Economics	Education	Engineering
Environment	Finance	History	Informatics
Kinesiology	Mathematics	MBA	Psychology
Public Policy	Statistics	Sports Management	Undecided



# Intense Concept Classes

History of Architecture	Sociology	Psycholgy	Biopsychology
Biopsycholgy	Deviation Psychology	Psychopathology	Cognitive Psychology
Women's Health	Logic	Anthropology	Buddhism
Ancient Greek	Political Theory	Comparatice Politics	World Politics
HU Topics in Judaism	International Studies	Languages	Music History
Music Theory	Biology	Energy	Food
Environment	Intermediate Micro	Indermediate Macro	Genetics
Geology	Physics	Electromagnetics	Solar System
Stars & Universe	Solid Mechanics	Gen. Chemistry	Organic Chemistry
Biochemistry	Elementary Progr.	Progr. & Data Concepts	Data Struc.& Algorithms
Electronic Circuits	Logic Design	Discrete Math	Calculus I, II, III
Differential Equations	Probability	Stat & Data Analysis	Biostatistics
Health Maintenance	Care Complex Needs	Health & Society	EECS

# Targeted Intense concept classes

- Mathematics: Calculus I, II, III
- Computer Science: Logic, Discrete Math
- Social Sciences: Economics, Psychology, Political Science
- Natural Sciences: Chemistry, Biology, Physics



# e-LEARNING SPACE

- \$56.2 billion spent in 2013
- Global learning market to reach \$247.5 billion in 2017
- 50% of college classes will be elearning based by 2019
- Coursera already hits \$1million in revenue
- K12 Inc. generated \$385 million in revenue
- Blackboard \$500 million in revenue

1, 2 and 3: Brainshark: <http://www.brainshark.com/Ideas-Blog/2014/March/global-elearning-investments-to-double.aspx>

4: Gigaom: <http://gigaom.com/2013/09/12/coursera-hits-1m-in-revenue-through-verified-certificates/>

5: Education Week: <http://www.edweek.org/dd/articles/2010/10/20/01ebiz.h04.html>

6: Tech Crunch: <http://techcrunch.com/2012/10/18/with-both-co-founders-now-gone-its-the-end-of-an-era-for-education-software-giant-blackboard/>

# Technology/Advantage

Wiki + Reputation System





# Subscription Models

	Basic Users	Premium Users
Viewing	Limited	Yes
Track progress	No	Yes
See last state	No	Yes
Contribute	No	Yes



REVENUE MODEL						
		Year 1	Year 2	Year 3	Year 4	Year 5
Market Penetration		0.01%	0.05%	0.20%	1.00%	2.00%
# Customers		1000	10000	40000	200000	400000
Pricing	$\frac{\$}{User \cdot Year}$	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00
Revenue	Gross Income	\$20,000	\$200,000	\$800,000	\$4,000,000	\$8,000,000
	Net Income	(\$290,000)	(\$320,000)	\$204,000	\$2,920,000	\$6,310,000
Cost	Customer Segment	5.00%	1.00%	0.10%	0.10%	0.10%
	Customers	50	100	40	200	400
	$CAC \left( \frac{\$}{User \cdot Year} \right)$	\$1,900	\$1,900	\$1,900	\$1,900	\$1,900
	Acquisition Cost (\$/Year)	\$95,000	\$190,000	\$76,000	\$380,000	\$760,000
	Direct Cost	\$210,000	\$300,000	\$450,000	\$600,000	\$800,000
Marketing		\$5,000	\$30,000	\$70,000	\$100,000	\$130,000
Cash Balance		(\$290,000)	(\$610,000)	(\$116,000)	\$3,124,000	\$9,230,000

# 3-year Funding Needs

- Seed Content (\$341,000)
- Patent (\$31,000)
- Operational Cost (\$520,000)
- Marketing (\$105,000)

**Total:** \$997,000

# Reputation System



[1.9 million registered users  
>5.5 million questions]

Revenue:

job postings

+ candidate search

+ ads = **\$167K/month**

**StackExchange** 

# REPUTATION

“...if someone has a good GitHub account, I don't care if they've got no degree, not even a high school degree.”

—Balaji Srinivasan (General Partner at Andreessen Horowitz, Stanford Lecturer)



# COMPETITION

	1KnoI	MOOC	Test Prep
Content	Excellent	Good	Good
Persistent	Excellent	Good	Poor
Referential	Good	Poor	Fair
Custom	Good	Poor	Fair
Feedback Rate	Good	Fair	Good
Idea Generation	Good	Poor	Poor
Reputation Management	Excellent	Fair	Fair
Enrollment		1.3MM–5MM	54.2K





# CUSTOMER RELATIONS

## GET

### Customer Acquisition:

- ✓ Engage professors, students, researchers
- ✓ Social Media, Online & Printed Ads

### Customer Activation:

- ✓ Basic services free.
- ✓ Premium users:
  1. Track progress
  2. Save map view
  3. Contribute Content

## KEEP

1. Improved Learning efficiency
2. Quick visual search
3. Contributors earn reputation & payment.

## GROW

1. Earn-as-your-contribute will motivate users to involve friends.
2. Continual expanse & improvement of content.





# WHY WE'RE HERE

- Accomplishments:
  - Prototype
  - Provisional patent
  - > 100 students signed up in database
- Milestones:
  - Develop MVP
  - Finalize patent application
  - Research supporting theories in action

# Thank You!



