

Good afternoon! I would like to thank all of you all for attending my presentation about Apple's iPad device. My name is Ray Cox and I am a Spanish teacher at the high school. I am here to demonstrate how we can use this innovation to meet our charge of providing a comprehensive, innovative educational program that prepares our students to be productive responsible citizens.

Roger's (2003) Six Steps of Innovation

- Recognition of a problem or need
- Research
- Development
- Commercialization
- Diffusion/Adoption
- Consequences



I am currently enrolled at Walden University and during this term's coursework, we were asked to choose an innovation that would be beneficial for our organizations. Using Everett Roger's 2003 book "Diffusion of Innovations," we tracked innovations through six stages: recognition of need, research, development, commercialization, diffusion and adoption, and consequences. Today I will use these steps as a framework for my presentation.

Need

- While laptop computer allows users to work in mobile environments, they have issues that innovators looked to solve:
 - Short battery life
 - Weight
 - Portable, but only to a point



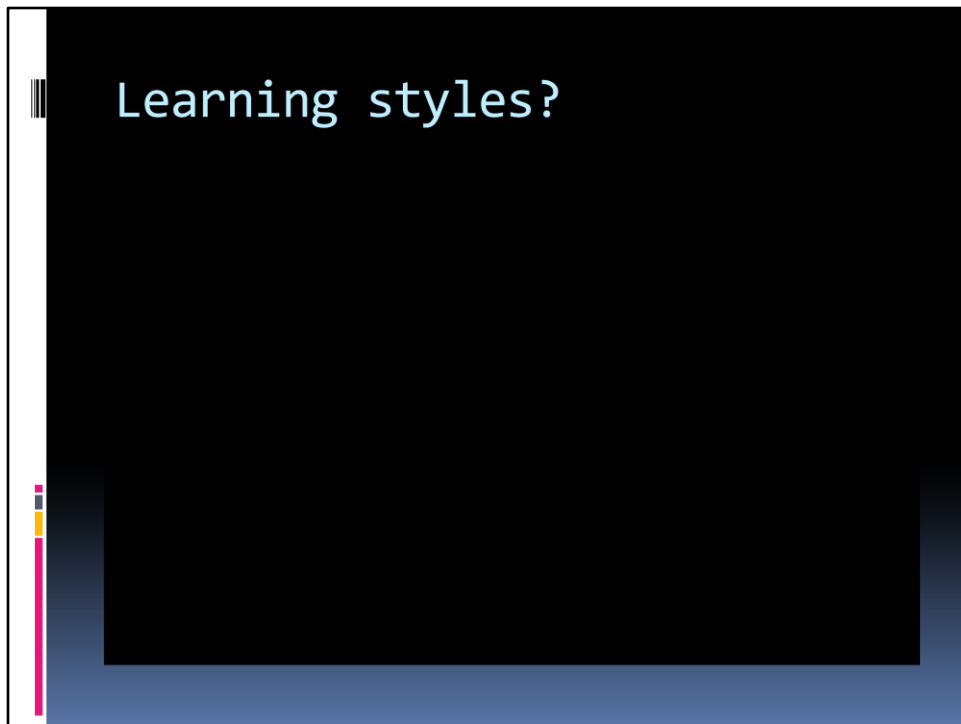
We currently employ a variety of computing devices in our schools. We have laptops, desktops, and computer labs filled with a variety of tools. We are looking for ways to replace the laptop computers we use due to some of the problems we have encountered. As we have discussed before, the laptops have short battery lives and require constant charging if used throughout the day. The laptops we have are bulky and heavy and they are only portable to a point. As we are looking to modernize our educational technology for our schools, purchasing more laptops would not meet this need.

Need in our schools

- Replace outdated technology
- Digitizing textbooks for updated content
- Address the different learning styles of our students



What are our needs for our district? In our schools, iPads can replace outdated technology, such as the aging laptops. iPads can also allow for our students to use digital versions of textbooks. This allows for shorter textbook adoption cycles and access to updated information as soon as students connect to the internet. Students can access current information, not data printed up to ten years ago. Finally, iPads offer ways for us to address the different learning styles of our students. I want to pause and show a short clip to a video which shows iPads being used to compose and produce an entire musical piece.



We had to see, you know the how cool it would be to get 24 iPads in a classroom. And get an enthusiastic learners and let's see how this works. You know, we'll write a song, they'll learn it, we'll play it, we'll perform it. The great thing about the iPad is that it is so creative. It's user interface doesn't impede progress. Let's create this digital orchestra to showcase the benefits of cutting-edge technology within the music classroom.

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From production to end-user

- iPad announced 2010.
- Missing Adobe Flash
- Reliance on AT&T for data
- Introduction of iPad 2



Apple, headed by Steve Jobs, announced the arrival of the iPad on January 27, 2010. The first pre-orders were taken on March 12, 2010 and the first iPad was released in April 2010. The device was faced some skepticism for not including Adobe's Flash computer language, a common language found on most web sites. There have also been concerns about the reliance on AT&T for data plans as many complain that AT&T has worse service than their competitors. The first generation of iPads has been replaced by the iPad 2 which have integrated front and back cameras and many other features.

Intended audience

iPads offer something for all audiences:

- Business leaders
- Entertainment junkies
- Students and Teachers

all in one device.



iPads are marketed to a diverse audience. From business leaders to entertainment junkies, the iPad offers a variety of features and applications developed by third parties that appeal to all. Students and teachers also use the device to aid in student comprehension of material. Unlike one competitor, the Amazon Kindle, Apple has created a device that does more than provide digital copies of books. Yes, you can read a book using an iPad but you can also translate it, take notes on it, and search for related content, all using one device.

Commercialization

- Produced at Foxconn in Shenzhen, China
- Production moving to Brazil
- iPads cost \$260 to make, retail for over \$99
- Peripherals and protection sold extra



iPads are currently produced in Shenzhen, China and will be produced in Brazil at the end of 2011. When purchased, the iPad device comes only with the device itself and basic charger. Optional peripherals such as keyboards and protective cases can be purchased later. The iPads cost approximately \$260 to produce and sell for over \$499 retail. Apple offers no sales on these devices, except a 10% discount for education so they have a consistent profit margin on each unit sold. Marketing is sleek by showing actual images from applications being used. Word of mouth sells iPads as well. Packaging of the iPad is very clean, similar to the iPad itself. There is little more than a white box, basic instructions, and protection packaging.

Timeline of the iPad

- Rogers' (2003) 5 stages of the innovation-decision process.
- Stage 1: Knowledge
- Stage 2: Persuasion
- Stage 3: Decision
- Stage 4: Implementation
- Stage 5: Confirmation



As stated in my introduction, I tracked the iPad through Roger's (2003) five stages of the innovation-design process. On the next few slides I will discuss how the iPad has progressed through these five stages.

Stage 1: Knowledge

- Announced by Steve Jobs: January 27, 2010
- First orders: March 12, 2010
- Released: April 3rd

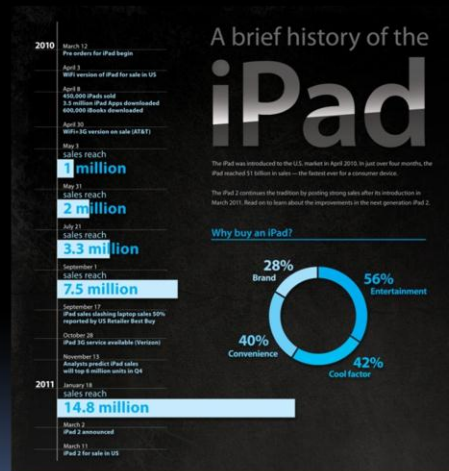
<http://www.macrumors.com/2010/01/27/apple-tablet-media-event-today-come-see-our-latest-creation/>



The iPad was announced on January 27, 2010 by Steve Jobs at a media event unveiling its new product. Pre-orders were taken on March 12. The iPad was released to the general public on April 3rd. During this time there was much advertising about the product as well as speculation on how it would be similar to the iPhone and iPod devices. Educators began to learn about the product as it was shown to the masses.

Stage 2: Persuasion

- Simplicity
- Low cost applications
- Replaces books and laptops
- Updated content



<http://www.discountcoder.com/blog/a-brief-history-of-the-ipad-infographic/>



Due to the simplicity of the design, ample applications for free/low prices, individuals have been persuaded to use an iPad instead of laptop or other tablet. Educators see iPads as replacements for bulky textbooks and laptops for students. Electronic textbook companies tout easily updateable content as selling point for iPad. In just 28 days after release, over 1,000,000 units of the iPad were sold. Individuals were indeed persuaded to try out this new device.

Stage 3: Decision

- Schools replacing books with iPads
- We currently have 60 at the high school
- Urban districts using iPads district-wide



Some schools have provided iPads for all students and have dispensed with traditional textbooks. Our organization has purchased 60 iPads for use at the high school. Let's pause for a moment and watch a quick video showing how the Chicago Public School System has adopted the iPad at a district-wide level.

Chicago



Chicago Public Schools is the 3rd largest district in the US. The iPad has created enthusiasm and excitement in our classrooms here at CPS. It's something you can hold in your hands, it's not heavy, all of the applications, the access to the internet, the research that can be done, being able to outfit so many of our kids with a low cost machine can be a real advantage to a district.

I have some students who are struggling with learning their letters and sounds. And with the Super Y app for example, they're able to hear the letter, trace the letter, so there's a lot of repetition. It's helping them catch on. They're spelling words I didn't think they knew how to spell and I'm always like "wow, who spelled it" and they're like, "I did."

Stage 4: Implementation

- Some schools and colleges have gone completely iPad.
- From faculty to student, everyone relies on the device
- Continual use will determine feasibility

<http://www.wired.com/gadgetlab/2010/04/ipad-textbooks/>



As you can see, in some schools, iPads have taken over the classroom. Some educators and schools have fully implemented iPad use. Administrators conduct walkthroughs on iPads, teachers use it for teaching and recordkeeping, and students access content while multitasking with the iPad. Continual use will show if it is a truly feasible alternative to traditional classroom technology and textbooks.

Stage 5: Confirmation

- Not at confirmation stage
- Too many unknowns
- Poor economy
- Pushback from some parents

http://blogs.edweek.org/teachers/leading_from_the_classroom/2011/11/ipad_schools_replacing_backpacks_ithinknot.html



We have not reached the confirmation stage with the iPad in education. Since there are still many unknowns, such as availability of all courses' textbooks, schools are holding off on purchases. Schools see the benefits of the device, but lack funds due to poor economy. This could also move the iPad into rejection since it might prove too costly. Some parents also are leery of the iPad. They see the device more as a toy and less as an educational tool.

Communication

- Mass marketed by Apple
- Word of Mouth from adopters and bloggers
- Educators see usefulness
- Spread desire for widespread use of device

<http://www.ipadinschools.com/284/why-the-ipad-should-be-used-in-classrooms/>



iPads have been mass marketed by Apple since the original announcement in 2010. This wide approach to advertising has spread the word to the general public. Through use of the device, many individuals have seen its usefulness beyond entertainment. These individuals have adopted the iPad and have shared word-of-mouth reviews of it and educators have then decided it would be a useful tool in their classes and across districts.

Adopters

- Rogers (2003) identified 5 adopter categories:
- Innovators
- Early Adopters
- Early Majority
- Late Majority
- Laggards



In his (2003) book, Rogers identified 5 adopter categories related to innovations. I will identify characteristics of faculty and staff members who fall into these five groups.

Innovators

- Younger, more affluent teachers
- Used iPads in college
- Have access to cutting edge technology



Innovators are going to be the younger teachers who may come from affluent backgrounds. These teachers are just starting out and may have used similar type devices. They may have access to this technology via their colleges and social circles.

Early Adopters



- Have used technology for years
- Already integrate, but do not innovate
- Cautious



Early adopters will be those teachers who have been working with technology in their classrooms for many years. These teachers already integrate technology but are not innovators. They have seen technology fail in the past, so they are cautious.

Early Majority

- Wait and see approach
- Conscientious about changing practices
- Will adopt if iPad shows academic promise



Teachers who adopt in the early majority will be those who have seen the previous two adoption groups experience academic progress of their students by using these devices. They are conscientious about changing their tried and true teaching practices, but if enough early adopters show benefits of the device, they will quickly come on board.

Late Majority

- Adopt only when required
- Not averse to technology
- Feel less benefits than traditional methods
- Overwhelmed



The late majority of teachers who adopt the iPad will only do so when they are required to do so. These teachers are not completely technology averse, but see less benefits compared to traditional teaching methods.

The late majority of teachers might also be those who are not truly effective in teaching. They could also be those who feel there is too much to do on top of learning a new gadget.

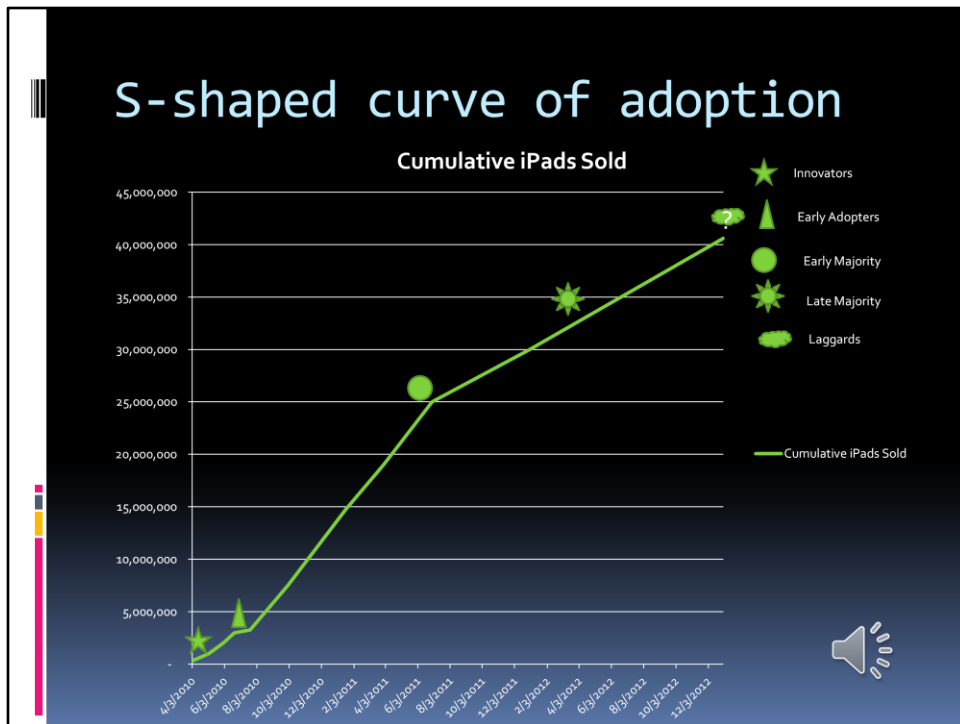
Laggards

- Twilight of careers
- Technology averse



Laggards might be teachers at the twilight of their careers. They are soon to retire and see no need to learn a new tool as they are leaving the workforce and heading towards retirement.

Laggards may also be technology averse and/or refuse to use computers except for the most basic of required tasks.



Looking at this chart, you can see how the iPad has sold across the years. There is also a project of how many devices will be sold through the end of 2012. Innovators adopted the device as soon as it was released. Around the summer of 2010, we entered the early adopter stage. With the introduction of the 2nd generation iPad, we are still in the early majority stage. Probably after the middle of 2012, we will be entering the late majority stage. I think laggards might adopt the iPad or other tablet device when desktops and laptops are produced less.

How to convince the masses

- Innovators—hip, unique, “hook”
- Early Adopters—relatively better than laptops
- Early Majority—appeal to pedagogical methods
- Late Majority—simplicity of the device
- Laggards—appeal to their experience



So how do we convince all of the groups of adopters in our schools that the iPad is right for their classroom?

Innovators—convince them the students see the innovation as hip and unique. This might appeal to those teachers looking for a “hook” for their kids.

Early Adopters—show how the iPad is relatively better than a traditional computer (e.g. portability, features, etc.)

Early Majority—appeal to pedagogical methods and how the iPad can improve their teaching practice. Show how it is not just a toy for kids to play with.

Late Majority—focus on the simplicity of the device. Most applications are intuitive and use no input devices such as keyboards or mice are required for use.

Laggards—appeal to their experience and how certain technology has improved daily lives and education. It might be a lost cause, but if you can focus on tapping into their wisdom and experience, they might see how the tool can work for them.

Perceived attributes

- Rogers (2003) mentioned the five perceived attributes:
- Relative advantage
- Compatibility
- Complexity
- Trialability
- Observability



Rogers (2003) mentioned the five perceived attributes: Relative advantage, compatibility, complexity, trialability, observability.

For teachers to adopt the iPad into their classrooms, they need to see the **relative advantage** of the tool and, **observe** how its use is improving classroom teaching...but most importantly, bottom line results in student achievement.

Centralized or Decentralized

- Teacher liberty + shared responsibilities = decentralized approach



In our district teachers have great liberty to develop and present classes that are based on their expertise.

We have shared responsibilities and teachers discuss what works best in instructional practices.

We would best be served by a decentralized approach.

Key Change Agents

- CATE (Career and Technology Education)
- Department Chairs



So who are our change agents within our district?

First, the CATE (career and technology education) would be some key change agents as they teach many kids and have greater use of this type of technology in their classes.

Then we would use department chairs and those who have been effectively using technology in their classes. We would have a good mix of teachers who would be able to diffuse the iPad to the greater group.

7 Roles of Change Agents

1. Develop a need for change
2. Information exchange
3. Diagnose problems
4. Create intent to change
5. Translate intent to action
6. Stabilize adoption
7. Terminal relationship



Rogers mentioned the 7 roles of the change agent related to adoption innovation. In our schools we need change agents to follow these same steps.

Develop a need for change—our change agents would show how not using the iPad could be hurting our student achievement.

Information exchange—CATE teachers can show others how the iPad can actually provide job skills for students, increasing their popularity and usage by kids.

Diagnose problems—CATE teachers and department chairs would meet together and diagnose the issues our school is facing in student achievement.

Create intent to change—Our leaders would show the different paths we could go on. They would prescribe solutions, including the use of the iPad.

Translate intent to action—through informal conversations and interpersonal relationships, our change agents would help shape opinion toward using the iPad in their classes.

Stabilize adoption—change agents would ensure that the rest of the teachers are continuing to utilize the iPad and are at the confirmation stage of Rogers' phases of adoption.

Terminal relationship—our change agents need to finalize the introduction and diffusion of the adoption to let the teachers begin to rely on themselves to make it work.

Critical Mass Yet?

- Critical mass—when enough momentum promotes growth
- 10%-20%
- Not quite there
- Adopt the iPad at all schools within district
- Success would lead for further adoption.



Critical mass is the number at which an innovation has enough adopters where the innovation is sustained and promotes further growth. This number is estimated between 10 and 20% of potential adopters. We have not reached the critical mass number quite yet with the iPad. One of Rogers' (2003) way to continue growing the number of users would be diffusing the iPad to schools within the district at large. These groups are intact, and if there is success in use (via higher student achievement), the iPad would be likely to be adopted by other schools in our region.

Needs

- Reduce textbook expenditures, balance budget
- Accessible technology
- Modernized technology
- Tools students will see in the workforce
- Hands-on learning



Why do we need iPads? First, we have the reduction of expenditures and balancing the budget via less investment in traditional textbooks and computers. But we also need accessible technology for our students. They need to be able to have modern tools they can use and practice real life skills they will see in the workforce. It's not enough to fill their heads with knowledge, we need them to manipulate what they learn to show multiple ways of knowing. They need to have hands-on experiences that fully engage all of their learning styles, not just listening to lecture.

The Champion

- CATE teachers
- They use technology daily
- Students achieve greater success in their classes
- They link the core curriculum to job skills students will need upon graduation
- Respected by colleagues



In order to get others on board with adoption of the iPad, we need a champion. Our champions in our district are the CATE teachers. These teachers use technology everyday. Whether it is using computers to produce the weekly announcements or showing kids the insides of transmissions, these teachers know their technology. Our students beg to get into these classes and work harder in them than in their core classes. These teachers connect real life job skills to the curriculum we teach in our core classes. They use the math and the science without explicitly teaching kids these subjects. Finally, these teachers are respected by their colleagues. We need these individuals to model for others how integrating the iPad in their classes has taken their classes to the next level.

So why the iPad?...

We could have this in our schools:



Or this...



This...



Or this...



Music...I didn't realize I could have that kind of experience in a classroom environment. The way the lesson was taught was incredible, I hadn't had a music lesson like that before.

Links for sources

- http://www.pcworld.com/article/193746/apple_ipad_costs_260_to_build_isuppli_finds.html
- <http://www.apple.com/ipad/features/>
- <http://en.wikipedia.org/wiki/IPad>
- Kids picture:
<http://christopherteh.com/blog/wp-content/uploads/2011/05/ipad-and-children.jpg>
- <http://blog.ohinternet.com/wp-content/uploads/2011/04/bored.jpg>

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- <http://familychiropracticcentre.files.wordpress.com/2010/09/student-heavy-backpack11.png>
- Newton Information - <http://lowendmac.com/orchard/o6/john-sculley-newton-origin.html>
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Links for iPad sales data

- <http://www.ipadinsider.com/tag/ipad-sales-figures/>
- <http://ipod.about.com/od/ipadmodelsandterms/f/ipad-sales-to-date.htm>
- http://blogs.computerworld.com/18550/apple_2011_ipad_sales_hit_40_million

iPad Audiovisuals

- 24 students create an entire song using iPads:
<http://www.youtube.com/watch?v=2W9z-nrTQD4>
- Steve Jobs Keynote Speech about iPad:
<http://www.youtube.com/watch?v=OBhYxj2SvRI>
- Selection of newspaper articles:
http://www.youtube.com/watch?v=kWQ17_iH9ak

iPad Audio

- The iPad across
<http://www.youtube.com/watch?v=bPVJNlHoMiQ>
- A senior shows how he uses his iPad daily:
<http://www.youtube.com/watch?v=bPVJNlHoMiQ>



Picture locations

- Steve Jobs and iPad- <http://cdn.moxiebird.com/wp-content/uploads/2011/03/steve-jobs-ipad.jpg>
- iPad start screen - <http://www.labnol.org/gadgets/ipad-unboxing-video/13332/>
- ipad box -- <http://www.fonearena.com/blog/wp-content/uploads/2010/04/ipad-box-side.jpg?gd7bd4>
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http://2.bp.blogspot.com/_CBhTEObtJgM/S4gtJnoFjMI/AAAAAAAAUV4/y9BZ95hr4EE/s1600/05.05.50+Apple+MessagePad.jpg

