

**How 21<sup>st</sup> Century Students Use Technology**  
 A Quick Primer for Parents

Thom Barclay  
 C. Joshua Villines

[galloway.villines.com](http://galloway.villines.com)

---

---

---

---

---

---

---

---

**The Dangers of Technology**

- "... you will give your students not truth but only the semblance of truth: they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality."

- Socrates, in Plato's *Phaedrus*, speaking about writing

---

---

---

---

---

---

---

---

**More from *Phaedrus***

- "For this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by external characters which are no part of themselves, will discourage the use of their own memory within them. You have invented an elixir not of memory, but of reminding; and you offer your pupils the appearance of wisdom, not true wisdom."

Cited in: Gleick, James (2011-03-01). *The Information: A History, a Theory, a Flood*. Random House, Inc. (Kindle Edition), p. 30.

- "I cannot help feeling, Phaedrus, [says Socrates] that writing is unfortunately like painting; for the creations of the painter have the attitude of life, and yet if you ask them a question they preserve a solemn silence.... You would imagine that they had intelligence, but if you want to know anything and put a question to one of them, the speaker always gives one unvarying answer."

Ibid., p. 47

---

---

---

---

---

---

---

---

### Today's Topics

- Students' Hierarchy of Communication
- The Nature of 21<sup>st</sup> Century Communication
- How Technology Has Changed in the Past Five Years
- Quick Introduction to the Most Commonly-Used Sites
- Pedagogy and Play
- Questions

---

---

---

---

---

---

---

---

### A Hierarchy of Communication

- How do I get in touch with my friend?
  - Facebook Chat
  - Skype
  - Text Message
  - Steam Chat
  - *Try Someone Else*
- If there is no other way...
  - Facebook Message
  - First Class Message
  - E-mail

---

---

---

---

---

---

---

---

### Changes in Communication

- Not a Better/Worse comparison, just *Different*
- People will always find ways to communicate what they *think* and *feel*
- Greater emphasis on visual imagery
- New Tools
  - Memes
  - Metadata
  - Hashtags
  - New Abbreviations

---

---

---

---

---

---

---

---

## Memes

- First coined by Richard Dawkins in the context of genetics research, a “meme” is a self-replicating unit
- In Humanities research and in colloquial usage on the Internet, a meme is a phrase or image that is used as a shorthand for a concept.
- Memes are often tweaked, modified, or used ironically in a complex, nuanced language that requires familiarity with their most frequent meanings.

---

---

---

---

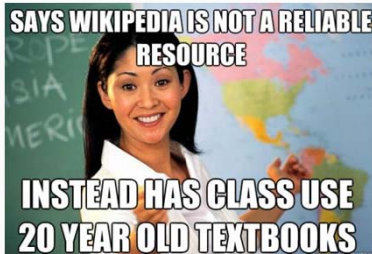
---

---

---

---

## Unhelpful Teacher Meme



---

---

---

---

---

---

---

---

## Metadata & Hashtags

- “Metadata” – in its simplest form – is information that allows for the organization or grouping of other data
- Communication in social media settings uses metadata to connect people, places, and ideas
  - Clicking on “#Buckhead” might show all your friends currently in Buckhead
  - Clicking on “#BigBangTheory” might list everyone who is talking about either a TV show or a physics concept
- Metadata can be created on some sites using # (a hashtag), followed by a word or phrase with no spaces. Other sites use @ or another symbol.

---

---

---

---

---

---

---

---

### Changes in Technology

- Digital tools are no longer analogs for paper media.
  - Content is immediate, dynamic, and interactive
  - Information does not flow hierarchically
  - Content is personal, social, and collaborative
- Proprietary devices are going away
  - Everything is a computer
  - Phones are not phones
  - Televisions are not televisions, and everything is a T.V.
- “Websites” are an increasingly antiquated concept

---

---

---

---

---

---

---

---

### Content Providers

- It is easy to think of the following sources as “websites” – but they are more accurately “content providers”
- They serve to provide dynamic, hyper-linked content that can be accessed on televisions, phones and e-readers
- Often content from multiple sources will be integrated and streamed on a single site
- Triaging the value of specific content providers is a necessary 21<sup>st</sup>-century skill for information consumers

---

---

---

---

---

---

---

---

### Crowdsourced Information

- Millennials receive their information through news aggregators and custom search filters
  - RSS Feeds
  - Crowdsourced websites like Fark, Digg, and Reddit
- Users expect to be able to comment, interact with other readers, and influence article ranking
- Frequently integrated with Facebook and Twitter
- Easily integrated with mobile devices
- Old media sources are increasingly adopting these features, and often use feeds from popular aggregators
- Discussion forums and comment sections are a common source for answers to questions

---

---

---

---

---

---

---

---

## Facebook

- Over 1 Billion Users as of October 2012
- 86% of Millennials visit at least once a day
- Account serves as an Internet “Photo ID”
- Content centers on individual relationships – “Friends”
- Primary functions are twofold – to see what others are doing and to inform them about what the user is doing
- Extensive use of metadata to link people and places
- Also an Instant Messaging service
- Common source for sharing video and image memes

---

---

---

---

---

---

---

---

## Twitter

- The Internet equivalent of a large, fast-moving party
- “Tweets” are quick, pithy conversations or links to articles, photographs, or other web content
- People jump rapidly between multiple topics
- Often used to connect celebrities and their fans
- Tweets, even from public figures, are often personal and highly informal
- Religion, politics, and other taboo topics are popular
- Originally for mobile devices, now widely-integrated

---

---

---

---

---

---

---

---

## Instagram

- Photo editing and sharing website
- Images are passed through color and blur filters to look like color snapshots from the 1960’s
- Owned by Facebook
- Integrated with other content providers, including Twitter
- Frequently used to make inane, everyday moments seem interesting or artistic
- Enormously popular, but possibly a fad

---

---

---

---

---

---

---

---

## Pinterest

- A visual tool for organizing ideas
- Functions like a virtual corkboard on which someone might pin photographs and articles
- Originally targeted at stay-at-home parents who wanted to share recipes and craft ideas
- Now used for a wide variety of content
- Integrated with Facebook and Twitter
- Content is grouped into boards, some of which have millions of subscribers
- Tumblr fills a similar niche, but for images only

---

---

---

---

---

---

---

---

## Quizlets

- Virtual index cards
- Frequently used collaboratively by students for test preparation
- Multiple ways for students to test themselves and identify weak spots
- Often peer-initiated and peer-corrected
- Facebook integration
  - Generally announcements of – and requests for – Quizlets are made on Facebook

---

---

---

---

---

---

---

---

The screenshot shows a Quizlet profile for user 'guadalupeburrito'. It features a navigation bar with 'Home', 'Features', 'Find Sets', 'Create Set', 'Help', 'About', and 'Mobile'. Below the profile name, there are three main sections: 'Sets (52)', 'Studied', and 'Statistics'. The 'Sets' section lists various study materials like 'What's the Word units 64 and 65' and 'Transformations of Functions'. The 'Studied' section shows a list of items with 'Learn' buttons and 'Last Studied' dates. The 'Statistics' section provides a summary of the user's activity, including the number of sets created, terms entered, and study sessions.

Sets created	52
Terms entered	1,112
Study sessions	202
Total answers (Test & Learn)	4,667
Discussion messages	4
Days of membership	1,004

---

---

---

---

---

---

---

---

## Wikipedia

- Consistently in the top 5 most-accessed Internet sites, behind only Google, Facebook, YouTube, and Yahoo
- Content is “open-source” – it can be edited and reproduced by anyone (crowdsourced information)
  - A hierarchy of volunteers enforce quality standards
- Content is increasingly integrated into other software and hardware products (e.g. Kindle)
- Not accepted as an academic source, but widely used at all academic levels to provide initial guidance for research and an overview of the relevant topics

---

---

---

---

---

---

---

---

## Spark Notes

- Cliff’s Notes for the Internet Generation
- Content includes traditional outlines and summaries along with live action and animated videos
  - Focus on Literature, but other subjects as well
  - “Translations” of Shakespeare
  - Writing and grammar guides
- Written by “top students or recent graduates”
- Available in print and mobile formats as well

---

---

---

---

---

---

---

---

## Skype

- Dedicated communication platform
- Works on a variety of devices
- Primary uses:
  - Instant messaging
  - Longer, ongoing text conversations
  - Collaborative group conversations
  - Video conferencing
- Some students will keep Skype open at all times
- Serves multiple functions, socially and academically

---

---

---

---

---

---

---

---

### Google Apps

- Multitude of uses beyond search engines
- Robust, free e-mail
- Multi-platform Calendar
- Google Docs allows free content creation and collaboration
- Blogger - easy creation of web content
- YouTube
- RSS Reader
- Google+ - social networking

---

---

---

---

---

---

---

---

### Multimedia Content Providers

- Major Providers:
  - Hulu
  - Netflix
  - YouTube
  - Vudu
- Serialized, network programming is still popular, but is not the only kind of video entertainment students follow – and it is rarely watched on a television
- Podcasts, short films, and a variety of sub-genres introduced by YouTube are all popular
- Music likewise is almost exclusively distributed online
- “Radio” stations are actually crowdsourced aggregators

---

---

---

---

---

---

---

---

### Khan Academy

- A mixture of traditional pedagogy with interactive methodologies and modern game achievements
- Students can watch videos for instruction, and then complete a wide variety of structured exercises that adapt to their abilities
- Progress, variety, and persistence are all rewarded with an enormous range of “achievements” that are incremented like those in a computer or console game
- Emphasis on math and science, but significant content for the humanities as well

---

---

---

---

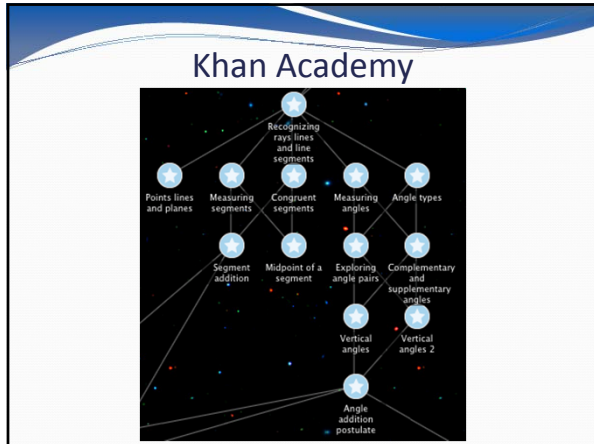
---

---

---

---





---

---

---

---

---

---

---

---

### Playing Games

- “We must play the game of learning, not the game of school.” – Elliott Galloway
- Electronic entertainment serves two functions:
  - Telling a story
  - Solving problems (either alone or collaboratively)
- Most modern games, with budgets and revenues larger than blockbuster movies, offer complex challenges in sophisticated environments with astonishing detail
- Games reward progress at carefully-calculated increments to encourage further play

---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

### A Video-Game Curriculum

- **Typing** – It's still the primary way to communicate
- **Internet Research** – Guides, forums, and hints
- **Math** – Statistics figure prominently in many games
- **Economics** – Many games have dynamic economies
- **Resource Management** – Essential in most games
- **Cognitive Mapping** – Fundamental skill for gaming
- **History and Politics** – In Strategy and Combat games
- **Teamwork** – Many games are collaborative
- **Storytelling** – Interactive – unlike movies, books, TV

---

---

---

---

---

---

---

---

### Additional Resources

[galloway.villines.com](http://galloway.villines.com)

for additional resources including links to all of the content providers mentioned here, detailed resources on those content providers and an extensive bibliography on pedagogy and gaming.

---

---

---

---

---

---

---

---