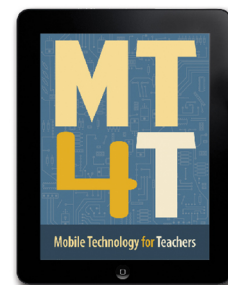




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MOBILE TECHNOLOGY FOR TEACHERS

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Mobile Technology for Teachers (MT4T)

*A Teacher Resource Kit Using Mobile Technology for
21st Century Learning in Southeast Asia*

Annotated Resources for Teachers

Second Edition





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For more resources on Mobile Technology for Teachers,
please visit our website at <http://www.seameo-innotech.org/mt4t>
or download the SEAMEO INNOTECH Reader from your Apple,
Android, or Windows device's application store.

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Introduction

Welcome to Mobile Technology for Teachers (MT4T), a teacher resource kit that uses mobile technology to promote twenty-first-century learning in Southeast Asia. It contains information, resources, examples, and best practices in using mobile technology for personal and professional growth. While MT4T recognizes the wide array of mobile technologies available today, it primarily focuses on smartphones and tablets.

MT4T is designed to provide teachers with easy access to information on the use of mobile technology for their own personal and professional growth. It will enable teachers to navigate mobile devices beyond the typical Short Messaging Service (SMS) or text messaging, and the call function. It is intended to help teachers recognize the huge potential of mobile devices as tools for teaching and learning.

MT4T will equip teachers with basic knowledge and skills to operate the three most popular mobile platforms—Android, iOS, and Windows. Also contained in this resource kit are discussions on built-in apps (including examples to expand their functionality) and social networking and blogging which aim to foster collaboration among teachers in Southeast Asia and beyond.

MT4T is composed of a set of e-books available in three mobile platforms—Android, iOS, and Windows. The e-books include the following:

- An Introduction to Mobile Technology for Teachers
- An Introduction to Teachers' Personal and Professional Learning Networks for 21st Century Learning
- Uses and Functionalities of Mobile Devices for Teachers
- e-Citizenship: An E-Book for Teachers on Cyber Wellness and Digital Citizenship
- Facebook for Teachers
- Twitter for Teachers
- Blogging for Teachers
- Edmodo for Teachers
- LinkedIn for Teachers
- Annotated Resources for Teachers

Users of MT4T are supported by a website which makes available the e-books in two file formats: e-pub and PDF. The e-pubs are best accessed using the SEAMEO INNOTECH Reader, which was designed to work consistently across mobile platforms and accord users with additional features like creating bookmarks, highlighting important phrases, and even creating drawings or doodles on the e-book pages. To

find out more about the other components of the MT4T Resource Kit, the users can search the e-Book on “An Introduction to Mobile Technology for Teachers (MT4T).”

Unique to the Resource Kit are discussions on using mobile technology to promote higher-order thinking skills (HOTS) and values among both students and teachers. Links to teaching and learning resources that promote HOTS have been provided in each e-book. Issues related to twenty-first century learning such as proper etiquette and digital citizenship are also discussed in several parts of the e-books.

Annotated Resources for Teachers

This e-book on Annotated Resources is meant to provide you with selected web links on topics relevant to 21st century learning, 21st century tools, higher order thinking skills, and digital citizenship that you can check while exploring the use of technologies and mobile devices for personal and professional development, particularly in enhancing your capacity as an educator of the 21st century.

The annotated resources are categorized into three main topics: (1) **Personal Development**; (2) **Professional Development**; and (3) **21st Century Teaching and Learning**. Each resource/web link under these main categories has a summary of what it is about and its possible use for you. If you think the resource appears interesting, looks useful and may improve teaching-learning processes, then tap on the link to read and learn more about it.

This e-book has already identified quite a wide array of useful resources to help you save time in trying to search for them. However, as you become adept at using technologies, mobile devices and the World Wide Web, you are encouraged to explore the many other resources available out there. You need to be selective, though, to ensure the applicability of any resources for your own benefit and that of your students.

In including the resources identified in this e-book, care was given to ensure that permissions were sought from the owners or holders of copyrights to the resources. Through this e-book, appreciation is given to the owners and authors of websites and links for allowing the Center to link to their resources for educational purposes.

Bear in mind that the linked websites are not under the control of SEAMEO INNOTECH. The Center is not responsible for the contents of the websites, including links contained therein, as well as changes and updates. While the links may be active as of this e-book's initial publication, third party sites may undergo changes in terms of names and server location, contents, and even deletion of web pages without warning, thus causing broken links and missing files. If you encounter such cases, please inform the Center by sending an email to info@seameo-innotech.org.

Chapter 1

Personal Development

According to teaching.about.com, "Personal growth and development is a critical component that all teachers must embrace in order to [maximize] their potential." There are many ways by which this can be done and listed below are some of the ways:

- Advanced degree – earning an advanced degree in an area within education is a fantastic way to gain a fresh perspective.
- Experience
- Journaling – this provides valuable learning opportunities through self-reflection. Learning opportunities arise daily, and journaling allows you to encapsulate these moments, reflect on them at a later time, and make adjustments that can help you become a better teacher.
- Literature – asking other teachers, talking to administrators, or doing a quick online search can provide you with a good list of must read literature, which can also help you improve in any area you may struggle with as a teacher.
- Professional development workshops/conferences – great teachers recognize their weaknesses and attend professional development workshops/conferences to improve on areas of weaknesses. Conferences also provide opportunity to network which can further enhance overall growth and improvement.
- Connect with other educators – all teachers should actively collaborate with other teachers outside and inside of their building. Teachers should be willing to share their best ideas and lessons with other teachers. Passing along a great idea maximizes the impact that it will have.

1.1 Personal Learning Networks

A personal learning network (PLN) is an informal learning network consisting of the people a learner interacts with and derives knowledge from in a personal learning environment. This network can be your colleagues, family, friends, students, co-members in a club—whoever! In a PLN, a person makes a connection with another person with the specific intent that some type of learning will occur because of that connection.

An important part of this concept is the theory of connectivism developed by George Siemens and Stephen Downes. Learners create connections and develop a network that contributes to their professional development and knowledge. The learner does not have to know these people personally or ever meet them in person.

The following is an excerpt from Dryden's and Vos' (2005) book on learning networks:

"For the first time in history, we know now how to store virtually all humanity's most important information and make it available, almost instantly, in almost any form, to almost anyone on earth. We also know how to do that in great new ways so that people can interact with it, and learn from it."

Personal learning networks share a close association with the concept of personal learning environments. Martindale & Dowdy describe a PLE as a "manifestation of a learner's informal learning processes via the Web".

Personal Learning Networks (PLN) are providing teachers with a new avenue for personal growth and development. (*Sourced from en.wikipedia.org*)

The following resources will help expand your knowledge and understanding of PLNs, its benefits to teachers like you and how to get started in establishing your own PLN.

- Burt, Ronnie and Michael Graffin. 23 September 2014. "What is a PLN?" Accessed from Edublogs Teacher Challenges at <https://teacherchallenge.edublogs.org/pln-challenge-1-what-the-heck-is-a-pln/>.

This post, which comes with video clips, explains what a PLN is, why it is important for educators to create their PLNs and be connected, how to build PLNs, and what you can do to start your own PLN.

- Morris, Kathleen. 23 September 2014. "Using Twitter to Build your PLN." Accessed from Edublogs Teacher Challenges at <https://teacherchallenge.edublogs.org/pln-challenge-3-using-twitter-to-build-your-pln/>.

This post, which is the second part of a series of posts, gives a brief introduction to Twitter, its benefits as part of a PLN, the steps in building PLNs via Twitter, and what you can do through Twitter to kick start your experience in building your own PLN.

- Waters, Sue. 23 September 2014. "Participate in Twitter Chats." Accessed from Edublogs Teacher Challenges at <https://teacherchallenge.edublogs.org/step-3-twitter-chats/>.

This is the third of a series of posts that extensively discusses how to build PLNs. It talks about getting started with Twitter Chats and provides tips for getting the most out of them. It also explains the benefits of participating in Twitter Chats as part of one's PLN.

- Waters, Sue. 23 September 2014. *"Making Time to Build your PLN."* Accessed from Edublogs Teacher Challenges at <http://teacherchallenge.edublogs.org/pln-challenge-4-making-time-to-build-your-pln/>.

This post is the fourth of a series of short articles that talks about PLN. It gives an overview of how PLN development can be overwhelming at times and how you can avoid this from happening.

- Waters, Sue. 24 September 2014. *"Using Blogs as Part of your PLN."* Accessed from Edublogs Teacher Challenges at <http://teacherchallenge.edublogs.org/pln-challenge-5-using-blogs-as-part-of-your-pln/>.

This short post offers an easy-to-understand approach in explaining what a blog is, its benefits as part of one's PLN, and how to set-up your own blog and start blogging. It also shares some tips on building PLNs via blogs. For anyone not familiar with blogs, the video tutorial embedded in the post gives a step-by-step instruction on how to set-up a blog account through Feedly, which is a blogging service.

- Waters, Sue. 25 September 2014. *"Using Curation Tools as Part of Your PLN."* Accessed from Edublogs Teacher Challenges at <http://teacherchallenge.edublogs.org/step-6-using-curation-tools/>.

People who have good content curation skills are a big help in this era of information overload. Online, you will find that educators with a big number of followers are usually those who have good curation skills and share excellent resources. This post, which is part of a series of posts related to establishing personal learning networks (PLNs), shares tips on how to conduct good curation. It also talks about the benefits of curation and lists down some of the more popular tools for it.

- Waters, Sue and Keith Ozsvath. 24 September 2014. *"Using Diigo as part of your PLN."* Accessed from Edublogs Teacher Challenges at <https://teacherchallenge.edublogs.org/pln-challenge-7-using-diigo-as-part-of-your-pln/>.

This is the seventh article of a ten-part series that focuses on building PLNs. "Diigo is a free social bookmarking tool that allows users to share online resources like websites and web 2.0 tools in a private or public group format." This post explains thoroughly what Diigo is all about and how to get started in using it for joining a group and organizing bookmarked sites through tags and lists.

- Waters, Sue and Jo Hart. 24 September 2014. *"Using Webinars as part of your PLN."* Accessed from Edublogs Teacher Challenges at <http://teacherchallenge.edublogs.org/pln-challenge-8-webinars-an-extra-dimension-for-your-pln/>.

Using webinars is one of the steps being suggested in building one's personal learning network. "A webinar is an online session or workshop delivered over the Internet using a video conferencing tool. Webinars are normally held at a set time and are a great way to receive information in an interactive format with audio, video and a chat channel." The co-author of this post, Jo Hart, enumerates from personal experience how being involved in webinars helped strengthen her PLN.

- Mirtschin, Anne. 24 September 2014. *"Back to Classroom 2.0."* Accessed from Edublogs Teacher Challenges at <http://teacherchallenge.edublogs.org/pln-challenge-10-back-to-the-classroom-of-2-0/>.

Classroom 2.0 is a Ning set up with over 79,000 members from all levels and tiers of education who are all passionate about the use of technology in education. It is free and it provides a space to make global connections and friends. The author shares some memorable stories from joining the Classroom 2.0 and gives tips on how to take advantage of the opportunities for networking.

- Avery, Shawn. 3 November 2014. *"Making connections."* Accessed from Edublogs Teacher Challenges at <http://teacherchallenge.edublogs.org/pln-challenge-10-making-connections/>.

Making connections with other classroom teachers provides many learning opportunities. This post explores what you can gain from connecting with other classroom teachers and gives tips for connecting with different educators from around the globe.

- Watanabe-Crockett, Lee. 3 June 2017. *"8 Tools Built for Perfecting Your Personal Learning Network."* Accessed from Global Digital Citizen Foundation at <https://globaldigitalcitizen.org/8-tools-personal-learning-network>.

Collaborative learning in the digital age is no longer limited to one's immediate social network. Obtaining and exchanging information with virtually anyone in the world is made easier by today's ICT. Sign up for an

account on a networking platform online, and you have instant access to a pool of people ready to share information. This blog entry lists down some of the best avenues online for advancing your careers through networking.

1. 2 Massive Open Online Courses

A massive open online course is an online course aimed at unlimited participation and open access via the web. In addition to traditional course materials, such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions between students, professors, and teaching assistants. MOOCs are a recent and widely researched development in distance education, which started in 2008 and emerged as a popular mode of learning in 2012. (Sourced from <https://en.wikipedia.org>)

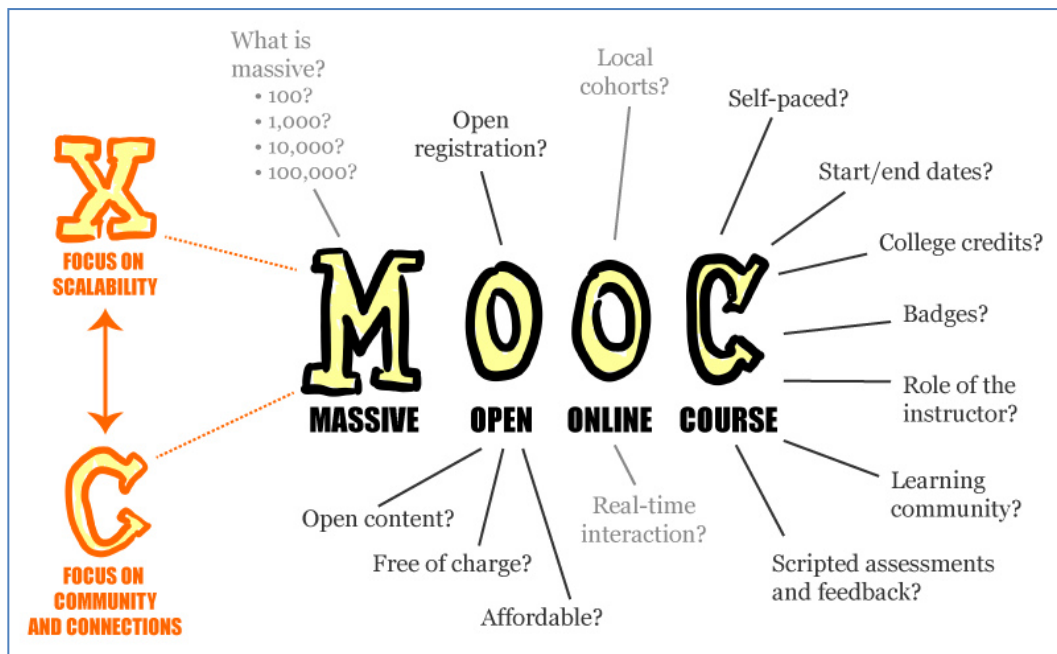


Image courtesy of Mathieu Plourde (<http://www.flickr.com/photos/>)

To jumpstart your personal development using MOOC, read through the platforms listed below and pick ones that suit your needs best.

- **Coursera.** Accessed at <https://www.coursera.org/>.

Take free courses online from top universities around the world through Coursera. "Coursera is an education platform that partners with top universities and organizations worldwide, to offer courses online for anyone to take, for free." You can "choose from hundreds of courses created by the world's top educational institutions," "learn on your own schedule," and achieve your goals of receiving "formal recognition for your accomplishment with an optional Verified Certificate."

- *edX*. Accessed at <https://www.edx.org/>.

edX was created for students and institutions that seek to transform themselves through cutting-edge technologies, innovative pedagogy, and rigorous courses. Through its institutional partners, the xConsortium, along with other leading global members, edX presents the best of higher education online, offering opportunity for everyone who wants to achieve, thrive, and grow. "From Science to Art to Technology, edX offers simply the best classes from the best professors and universities. edX will help you learn through cool tools, videos, and fame-like labs, at your own pace anytime, anywhere. You can also earn a Certificate of Achievement, or just audit the course. edX's virtual classroom is open 24/7 and everyone is accepted."

- *FutureLearn*. Accessed at <https://www.futurelearn.com/>.

FutureLearn offers "a diverse selection of courses from leading universities and cultural institutions from around the world. These are delivered one step at a time, and are accessible on mobile, tablet and desktop. FutureLearn have 60 partners from around the world...many of the best UK and international universities, as well as institutions with a huge archive of cultural and educational materials."

- *Canvas Network*. Accessed at <https://www.canvas.net/>.

Canvas Network offers open, online courses taught by educators everywhere. It provides a place and platform where teachers, students, and institutions worldwide can connect and chart their own course for personal growth, professional development, and academic inquiry. Canvas Network is developed and supported by Instructure, a technology company that partners with educators, institutions, and technologists to break down barriers to learning. Unlike other MOOCs, Canvas Network does not issue certificates but individual instructors or sponsoring institutions may offer a certificate of participation or completion.

- *Open2Study*. Accessed at <https://open2study.com>.

"Open2Study is an initiative of Open Universities Australia that brings the best online education with a four-week introductory subjects. It provides free, specialized short courses, entirely online, across the world in a range of subject areas. Upon successful completion of any course, you automatically get a Certificate of Achievement which can be used to demonstrate your interest in learning about a certain area."

- *openSAP*. Accessed at <https://open.sap.com>.

"Keeping pace with the rapidly developing world of information technology is a need that SAP helps to fill with openSAP. openSAP is developed and provided by SAP in cooperation with the Hasso Plattner Institute. It works according to the principle of massive open online course. The key difference between MOOCs and other types of e-learning lies in the way MOOCs demand commitment by leveraging tried and trusted classroom concepts in an online delivery format." Unlike other MOOCs, openSAP courses have a defined duration (usually between five and seven weeks) to which course participants need to adhere. Courses are based on video units, supporting materials, and self-tests.

- *Stanford Online*. Accessed at <http://online.stanford.edu/>.

This MOOC offers a variety of professional education opportunities in conjunction with many of the University's schools and departments. It also offers an array of free online courses taught by Stanford faculty for lifelong learning worldwide.

- *ALISON*. Accessed at <https://alison.com>.

ALISON is a "global online learning community, filled with free, high quality resources to help you develop essential certified workplace skills. Every course is standards-based and certified. That means bragging rights with family and friends, and employers, an edge in your work, and inspiration to be all you can be. There are over 750 courses at both certificate and diploma level, so you are to find what you need at a level that is right for you. Assessments on ALISON can be taken and re-taken anytime you want but must have a score of 80% or over to pass. ALISON, recognized as the first MOOC (Massive Open Online Courseware), has over 5 million learners in 200 countries. It has pioneered a "free learning ecology" where anyone can be tested on any subject at anytime, anywhere."

Chapter 2

Professional Development

This chapter provides information about resources that are useful for your classroom teaching and for furthering your professional development. The rich collection of web resources is intended to save you time from browsing through the many resources available on the internet and delimiting focus on topics that cater to your needs.

Professional development refers to the development of a person in his or her professional role. According to Glattenhorn (1987), gaining increased experience in one's teaching role systematically gains increased experience in one's professional growth through examination of one's teaching ability. Professional workshops and other formally related meetings are a part of the professional development experience (Ganzer, 2000). This perspective, in a way, is new to teaching in that traditionally professional development and in-service training simply consisted of workshops or short-term courses that offered teachers new information on specific aspects of their work (Brookfield, 2005).

In an article written by Simon Quattlebaum (2012) published in the online magazine *The Evolution*, he stated:

"Teacher development has moved beyond simple in-service workshops and has expanded into a more robust system of continuing education. In order to advance in their careers, teachers should seek out professional development opportunities that are ongoing and aligned with standards and assessments."

He also mentioned that educators must understand the concepts in processing professional development and what it means to education. To read the full article written in the online magazine, tap the following link: <https://evollution.com/opinions/why-professional-development-for-teachers-is-critical/>

Here are some more professional development information, websites, and digital resources that you may find interesting.

- Kharbach, Med. July 2013. "Top 8 Web Tools for Teacher's Professional Development." Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/07/top-8-web-tools-for-teachers.html>.

This link contains web tools for teacher's professional development which can be helpful when you need professional networking sites.

- Kharbach, Med. 23 January 2013. *"23 Excellent Professional Development Tools for Teachers."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/01/23-excellent-professional-development.html>.

This link contains professional development tools for teachers such as education world, Diigo, Web 2.0 and many more. You may tap on the link to find out more of the professional development tools.

- Hart, Michael. 1971. Accessed from Project Gutenberg website at <http://www.gutenberg.org/>.

This website offers over 45,000 free e-books that you can download or read online. The e-books are in different formats with suggestions on the top most downloaded books, the latest books, and a facility to search for books. There are also audio books and guides on how to read e-books using an e-reader app from different mobile devices.

- *"A History of the World."* Accessed from British Museum website at http://www.britishmuseum.org/explore/a_history_of_the_world.aspx.

This link from the British Museum can assist you in expounding on your knowledge about history and the world itself which can expand your professional development by being informed about the history of the world.

- Accessed from Kids Know It Network at <http://www.kidsknowit.com/>.

This link contains valuable resources about children's learning abilities and suggested activities from teachers who specialize in children's learning.

2.1 Research Studies for Teachers

The following are websites where you can access specific studies that are relevant to your work as an educator.

- Anderson, Ian. 25 November 2012. *"Video gaming addiction can control your thoughts."* Accessed from Fresh Science website at <http://freshscience.org.au/2012/video-gaming-addiction>.

This article talks about a research on video gaming done by a psychology researcher as part of her PhD at the Australian National University. Olivia Metcalf has collected some of the first scientific evidence that video gaming can be addictive in a way similar to gambling and alcohol.

- DeNeen, Julie. 29 November 2012. *"The Virtues of Daydreaming and 30 Other Surprising (and Controversial) Research Findings about How Students Learn."* Accessed from informED website at <http://www.opencolleges.edu.au/informed/features/30-surprising-research-findings-about-how-students-learn/>.

This post contains the virtues of daydreaming and 30 other research findings about how students learn.

- *"Education Research Studies."* Accessed from Institute of HeartMath website at <http://www.heartmath.org/education/education-research/education-research-studies.html>.

This section offers downloadable research papers related to education. Some of the papers include "effects of game-based relaxation training on attention problems in anxious children"; "coherence training in children with attention-deficit hyperactivity disorder"; "facilitating emotional self-regulation in preschool children"; and many more.

- *"Resource Studies Database."* Accessed from Education Commission of the States website at <http://www.ecs.org/rs/>.

This page offers a unique resource for research on education issues. The research studies contained here are concise and direct to the point with bulleted findings, policy implications, and recommendations.

2.2 Teacher Websites

Available below are websites and web resources specifically created for educators like you. These resources are designed to enhance your teaching experience in the classroom.

- Ogen, Karen. *"Interactive Sites for Education."* Accessed from Interactive Sites at <http://interactivesites.weebly.com/>.

These web tools are geared towards K-5 students. They are basically online interactive, educational games and simulations. They also feature several activities that will work great with your "SMARTboard" or interactive whiteboard for whole group or small group instruction, and for use in the computer lab or at home for individual learning.

- Kharbach. Med. December 2012. *"Great Subject Area Web Tools for Teachers."* Accessed from the Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/12/great-subject-area-web-tools-for.html>.

This post recommends a list of web tools and resources for teachers, organized according to different subject and content areas.

- *"Teachers Network: By Teachers for Teachers."* Accessed at <http://teachersnetwork.org/>.

This website provides lesson plans, video resources, teacher-designed activities for different subjects, how-to articles, and a lot more resources.

- *"Free Teacher Resources."* Accessed from Discovery Education website at <http://www.discoveryeducation.com/teachers/>.

Discovery Education offers a broad range of free classroom resources that complement and extend learning beyond the bell.

- *"Ed Helper."* Retrieved at <http://www.edhelper.com/>.

"EdHelper" provides teachers with free printable, graphic organizers, worksheets, lesson plans, games and many other activities.

- *"K-12 News, Lessons, and Shared Resources by Teachers, for Teachers."* Accessed from Teach Hub website at <http://www.teachhub.com/>.

Teach Hub provides the latest news in education, free lesson plans and "the most current, complete and affordable resources" on K-12. It also showcases "real teacher blogs plus the tools and applications (that teachers) need to maintain a level of excellence in their classrooms."

2.3 Teacher's Guide

You can find inspiration for new learning activities for your students in these teacher's guides available on the following websites.

- Website owned by the Penguin Group (USA) LLC. *"Guides and Activity Kits."* Accessed from Teachers and Librarians: Penguin Young Readers website at <http://www.penguin.com/school-library/teaching-guides-activity-kits/>.

If you're looking for something extra to add to your lessons, then this web post is for you. It contains guides and activity kits that you can view and download to help spark classroom activities and discussions.

- *"The Teacher's Guides to Technology and Learning."* Accessed from the Edudemic website at <http://www.edudemic.com/guides/>.

This post contains a list of teacher's guides on the use of some of the most popular online resources available today. Edudemic went through hundreds of resources to narrow down its guides into something easy to read, easy to use, and easy to share. Just click on the title or the image to view the guide.

- *"Teachers Guide Series."* Accessed from the Oscars Academy website at <http://www.oscars.org/education-grants/teachers-guide-series>.

If you are into movies, you will find this section in the Oscars website very interesting. This contains "a series of guides for middle and high school teachers to facilitate the classroom exploration of the art and science of motion pictures." The activities are designed to capitalize on students' natural interest in current films and the excitement generated by the Academy Awards to teach valuable lessons in critical thinking and creative writing, and to develop visual literacy skills.

- *"Teaching guides and strategies."* Accessed from Study Guides and Strategies website at <http://www.studygs.net/teaching/>.

This post has indexed over 250 study guides and strategies. Aside from these, the guides are arranged according to topic, like curriculum, building tests, and resources/bibliographies.

The Microsoft computer company has established its own web-based portal containing a rich and wide array of educational resources for teachers. The following are samples of specific teacher's guides found on the Microsoft in Education website.

- *"Microsoft Educator Community."* Accessed from the Microsoft in Education website at <https://education.microsoft.com/>.

This web page includes a download link to a teacher's guide for Microsoft Office. It includes tips to organize class materials through Microsoft OneNote, express ideas through Microsoft PowerPoint, and access and share documents through Microsoft Office Web Apps.

- *"Office 365 Teacher Academy."* Accessed from Microsoft in Education website at <https://education.microsoft.com/Learning/LearningPrograms/Detail/2034>.

This web page provides a short learning program on how to access and use Microsoft Office Web Apps.

- “OneNote for Teachers.” Accessed from <https://www.onenoteforteachers.com/en-US/teachers/>

Microsoft OneNote allows teachers to “create notebooks that help them stay organized, deliver curriculum, and collaborate with students and colleagues.” This page provides teachers with information on how to get started on OneNote, enhance productivity, and access other related OneNote resources.

- “Creating a Digitally Inclusive Learning Community.” Accessed from <https://education.microsoft.com/Learning/LearningPrograms/Detail/1826>.

Technology permeates every aspect of people’s lives today including education. It is therefore imperative for every educator to engage every student in a “digitally rich environment.” To successfully do this, teachers should be able to respond to the specific learning needs of students. This webpage provides educators with a learning program on how to support every learner using technology regardless of their background and abilities.

2.4 Ted Resources

“TED is owned by a non-profit, nonpartisan foundation, devoted to spreading ideas, usually in the form of short, powerful talks (18 minutes or less). TED began in 1984 as a conference where Technology, Entertainment, and Design (TED) converged, and today covers almost all topics—from science to business to global issues—in more than 100 languages.” TED talks are free and offer various ways to learn about specific topics. Aside from watching and downloading the video, you can also get the full transcript of a TED talk and even share in other social networking sites.

You can find web articles below that compile TED talks relevant to educators like yourself.

- Bhaskar, Santosh. 30 November 2013. “5 TED talks to motivate and inspire teachers.” Accessed from EdTechReview website at <http://edtechreview.in/news/821-5-ted-talks-to-motivate-and-inspire-teachers>.

This post shares five TED Talks which the author believes are the “greatest TED Talks” which are very useful for educators.

- Kharbach, Med. 08 November 2013. “8 Must See TED Talks for Teachers.” Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/11/8-must-see-ted-talks-for-teachers.html>.

This compiles very inspiring and informative TED talks that teachers can enjoy watching.

- Walsh, Kelly. 11 June 2011. "8 Great TED Talks about the Future of Education and Teaching." Accessed from EmergingEdTech website at <https://www.emergingedtech.com/2011/06/8-great-ted-talks-about-the-future-of-education-and-teaching/>.

The TED talks included in this post offer insights, concerns, and inspiration while discussing current educational practices and shortcomings from a variety of perspectives.

The following are just a few of the TED talks related to education.

- Meyer, Dan. Filmed on March 2010. "Math class needs a makeover." Accessed from TED.com at http://www.ted.com/talks/dan_meyer_math_curriculum_makeover.

A high-school math teacher, Dan Meyer says the experience of teaching within the set curriculum is like "[selling] a product to a market that doesn't want it but is forced by law to buy it." His students don't learn how to retain information, but instead, how to decode a textbook. The key, for him, lies in trusting in students' ability to problem-solve. In this talk from "TEDxNYED," he imagines lessons where kids are involved in the formulation of problems.

- Jemison, Mae. Filmed on February 2002. Accessed from TED.com at http://www.ted.com/talks/mae_jemison_on_teaching_arts_and_sciences_together.html.

At TED2002, astronaut and designer Mae Jemison points out a false dichotomy: that the arts and sciences are mutually exclusive. In this outdated view, students are either creative or logical. Instead, she says, students need to be treated as both — because their curiosity often leads them to design and physics. Analysis, ingenuity and imagination all stem from our inclination towards creativity.

- Coleman, Liz. Filmed on February 2009. Accessed from TED.com at http://www.ted.com/talks/liz_coleman_s_call_to_reinvent_liberal_arts_education.html.

The president of Bennington College, Liz Coleman posits at TED2009 that modern liberal arts education pushes students towards a single discipline with an exclusive viewpoint with an aversion to social values. Coleman emphasizes that the responsibility of academics is to empower students instead of deflate them. She stresses the importance of action and self-driven education, and how, with them, new liberal arts can emerge.

- Schocken, Shimon. Filmed on June 2012. Accessed from TED.com at http://www.ted.com/talks/shimon_schocken_the_self_organizing_computer_course.html.

In this talk from "TEDGlobal 2012," computer science professor Shimon Schocken shares the idea that educators don't necessarily need to actively teach, but instead can provide an environment for self-learning. In his lessons, he gives his students the tools and guidance to build a computer from the bottom up, giving them ownership over their learning. Seeing the success of this model, Schocken then open-sourced the course online – and saw it take on a life of its own.

- Mulgan, Geoff. Filmed July 2011. Accessed from TED.com at http://www.ted.com/talks/geoff_mulgan_a_short_intro_to_the_studio_school.

Faced with droves of uninspired dropouts and employers who complained about the new generation's lack of experience, Geoff Mulgan asked, "What kind of school would have teenagers fighting to get in, not fighting to stay out?" At TEDGlobal 2011, he shares his findings — the simple idea that you learn by working. Thus, the Studio School was created, with pupils getting real world experience in business and the trades, while they contribute to their communities.

- DeWitt, Tyler. Filmed in November 2012. Accessed from TED.com at http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html

High school science teacher Tyler DeWitt had a scary classroom moment – he walked into school excited for a lesson on bacteria, only to find that his class hasn't understood any of the assigned reading. At "TEDxBeaconStreet," he calls for science teachers to rethink their lesson plans and ask: do they involve a lot of jargon? Are they so precise that they keep students from getting the basic concepts?

- Sethi, Kiran. Filmed in November 2009. Accessed from TED.com at http://www.ted.com/talks/kiran_bir_sethi_teaches_kids_to_take_charge.html

In schools across India, Kiran Bir Sethi began an experiment: to find out what would happen if you took students out of the classroom and showed them their potential to address injustice around them. At TEDIndia 2009, Bir Sethi shares the story of children who were taught the importance of literacy and who were inspired to hold a campaign to educate their illiterate parents.

2.5 Educational Social Networking

"Educational Networking" is the use of social networking technologies for educational purposes. Because the phrase "social networking" can carry some negative connotations for educators, the phrase "educational networking" may be a way of more objectively discussing the pedagogical value of these tools.

Just a few years ago, social networking meant little more to educators than the headache of determining whether to penalize students for inappropriate activities captured on Facebook or [MySpace](#). Now, teachers and students have a vast array of social networking sites and tools—from [Edmodo](#) to [Ning](#) to [VoiceThread](#) and [Second Life](#)—to draw on for such serious uses as professional development and project collaboration. Educators who support using social networking for education say it has

become so ubiquitous for students—who start using sites like [Webkinz](#) and [Club Penguin](#) when they are in elementary school—that it just makes sense to engage them this way.

Dasha Sokolova, in December 2016, wrote an article for the EdTechReview website titled "5 Free Educational Social Networks for Teachers and Students." Below are the five educational social networks she talked about:

1. [TEDEd](#) "allows you to create interactive lessons around YouTube videos by adding multiple choice and open-ended questions, discussion prompts, and additional resources. Once a lesson is created, a unique URL is generated that can be used for inviting students. You can monitor students' progress and monitor their answers and comments in your account."
2. [TweenTribune](#) "...helps students stay up to date with the latest news and develop reading and critical thinking skills."
3. [Edmodo](#) "...is a communication platform where educational topics, resources and documents are constantly shared and discussed both publicly and in private groups (classes)."
4. [Wikispaces Classroom](#) "...allows users to edit pages collaboratively, which is a great way to encourage students to get involved. By producing information rather than simply consuming it, they also learn to take responsibility for its authenticity. Additionally, you can define teams and assign projects to them, so that students work in small groups and learn to resolve tasks collaboratively."
5. [TeacherTube](#) "...hosts educational videos for students of various grades. Each of the 1 million videos presented on TeacherTube is suitable for classroom use, as the website regularly checks new content to ensure its appropriateness."

You may tap on the link to read more of Dasha Sokolova's article:
<http://edtechreview.in/trends-insights/trends/2606-educational-social-networks>.

Blogging in Education

The web resources below will provide educators like you with tips on how to use and maximize the benefits of blogging sites.

- *BlogBooker*. Accessed at <http://www.blogbooker.com/index.php>.

The site offers guidelines on how to do the process for both blogger and "Wordpress" users. It is very easy to use. All you need to do is provide an export file containing all your blog posts from your blog and follow the remaining steps.

- *Zinepal*. Accessed at <http://www.zinepal.com/>.

This is a great tool for turning blog posts into a newsletter.

- *WordPress*. Accessed at <http://wordpress.com/>.

"WordPress" is gaining more popularity online as the best blogging platform. Several webmasters recommend it for users basically because of the helpful plug-in it provides for free. Included in the suite of e-books that MT4T offers is "Blogging for Teachers," which also focuses on WordPress as a recommended platform for teachers to embark on blogging. You can access that e-book in PDF [here](#).

- *Anthologize*. Accessed at <http://anthologize.org/>.

This is a "WordPress" plug-in that will enable you to transform your "WordPress" blog posts into an electronic book

- *Edublog*. Accessed at <http://edublogs.org/>.

"Edublog lets you easily create & manage student & teacher blogs, quickly customize designs and include videos, photos & podcasts - it's safe, easy and secure so try out an 'Edublog' today."

- *Glogster EDU*. Accessed at <http://edu.glogster.com/>.

"Glogster EDU" is the leading global education platform for the creative expression of knowledge and skills in the classroom and beyond. It empowers educators and students with the technology to create "GLOGS" - online multimedia posters - with text, photos, videos, graphics, sounds, drawings, data attachments and more.

Evernote for Teachers

This note-taking app may seem intimidating for beginners compared to other apps of its kind. But spend some time learning your way around its features, and you will see how much your work can benefit from it. From keeping track of your tasks on multiple devices real-time to writing briefs that are ready for presentation with just one simple click, you are sure to enjoy organizing aspects of your work using Evernote.

The following web resources offer more information and tips on how to use Evernote.

- *Evernote*. Accessed at <https://evernote.com/>.

"From short lists to lengthy research, no matter what form your writing takes, Evernote keeps you focused on moving those ideas from inspiration to completion."

- Kharbach, Med. June 2012. *"The Ultimate Simplified Guide to the Use of Evernote in Education."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/06/ultimate-simplified-guide-to-use-of.html>.

Here is a simplified guide on how to make use of Evernote in classroom teaching.

- O'Neill, Mark. (N.D.) *"How to use Evernote: The Unofficial Manual."* Accessed from Make Use Of website at <http://www.makeuseof.com/pages/how-to-use-evernote-the-missing-manual-full-text>.

As the title suggests, this is the unofficial manual on how to use Evernote. Read through to understand the app better.

Google Plus

Google Plus (interchangeably referred to as *Google+*) is a social networking and identity service from Google. According to Google expert, Marziah Karch, Google Plus is "pretty similar to other social networking services, but (it allows) more transparency in who you share with and how you interact. It also integrates all Google services and displays a new Google+ menu bar on other Google services when you're logged into a Google account." Tap on this [link](#) to learn more from the article written by Marziah Karch.

The following web links should tell you more about Google Plus and some of the resources that can be found in it.

- Kharbach, Med. July 2013. *"Everything teachers need to know about Google Plus."* Accessed from Educational Technology and Mobile Learning at <http://www.educatorstechnology.com/2013/07/everything-teachers-need-to-know-about.html>.

The author Med Kharbach shares some tips on how you can make use of Google+ for educational purposes through this collection of articles and guides he had previously written and published on his website. This also includes a set of video tutorials "to help you get your feet wet in 'Google Plusing.'"

- *"Educational Technology Community."* Accessed from Google+ at <https://plus.google.com/communities/117916783328771901842>.

This is an online community, created by Educational Technology and Mobile Learning that can be accessed from Google+. It has over a thousand members who share resources and interact with each other on topics related to educational technology.

- *"G Suite for Education."* Accessed from Google+ at <https://plus.google.com/communities/101802680117484972712>.

This is an online community found in Google+ which has over 65,000 members connecting with each other, discussing and sharing resources with Google Apps for Education.

- *"Educational Technology."* Accessed from Google Plus at <https://plus.google.com/communities/113018638134660266670>.

A community of education professionals, technologists, students, and anyone else interested in sharing discussion of all things tech in education.

- *"Connected Learning."* Accessed from Google Plus at <https://plus.google.com/communities/113655426574061601680>.

This Community will be a welcoming space where learners of all ages and from all walks of life can come together to share their connected learning experiences, challenges, and thoughts.

- *"STEM Educators."* Accessed from Google Plus at <https://plus.google.com/communities/112904336188381403474>.

This is a community where STEM educators can meet to share ideas and experiences. Everyone is welcome here, however, because everyone is involved in the education process. If you have a passion for science,

technology, engineering, or mathematics education, you're in the right place.

Google Scholar

Google Scholar is an online search engine that helps you do scholarly research on many topics across a wide scope of disciplines and sources. Within the [Google Scholar website](#), you can conveniently search for articles, abstracts, books and other documents published online using keywords, names of author, and titles. The site, however, has some limitations because most search results don't give free access to the full text but are instead available via subscription. Nonetheless, Google Scholar is still a good place to start a search on academic literature. The following web links will point you to resources that can help you appreciate Google Scholar more and how it might be of use to you in your research activities.

- *"Some things you need to know about Google Scholar."* Accessed from The Ideophone at <http://ideophone.org/some-things-you-need-to-know-about-google-scholar/>.

This article discusses the advantages and disadvantages of using Google Scholar with real-life examples to demonstrate the author's claims.

- *"Google Scholar Search Tips."* Accessed from the Google Scholar at <https://scholar.google.com/intl/en/scholar/help.html>.

This page provides you with helpful tips on how you can make the most of your Google Scholar searches, including how to find recent papers, locating the full text of an article, and getting better search results.

- *"Advanced Google Searching: Google Scholar."* Accessed from New York University (NYU) Libraries at <https://guides.nyu.edu/googlescholar>.

This post provides a guide on how to link into NYU Libraries' full text subscriptions by modifying the settings of Google Scholar. At the bottom of the web page are tips for doing advanced search via [Advanced Scholar Search Page](#) for more precise searching.

- *"Google Scholar."* Accessed from LibGuides of Curtin University at <http://libguides.library.curtin.edu.au/c.php?g=202422&p=1332806>

This page sums about everything you need to know about Google Scholar. It offers quick tips on how you can find full text searches and related articles, how you can link it with EndNote, the referencing guides it provides, and a bit of information on the Google Scholar Library. It also offers a brief comparison of Google Scholar with other online databases.

- *"4 New things about Google Scholar – UI, recommendations, and citation network."* Accessed from Musings about librarianship at <http://musingsaboutlibrarianship.blogspot.com/2017/10/4-new-things-about-google-scholar-ui.html>

This post shares the discoveries of the author, Aaron Tay, about the enhancements on the features of Google Scholar and other things he learned from using it.

Personal Learning Networks

Learn more about how you can build or expand your personal learning network by accessing the web resources available below.

- *"Wiki Spaces."* Accessed at <http://www.wikispaces.com/>.

Wikis are collaborative spaces by nature and are ideal for classroom use. The best platform to host your classroom wiki is "Wikispaces." It is easy to use and is free of charge.

- *"Scoop It!"* Accessed at <http://www.scoop.it/>.

This is a web "curation" tool to organize and store your bookmarked articles. However, you can also use it for crowdsourcing and creating communities around given topics.

- *"Creative Commons."* Accessed at <http://creativecommons.org/>.

This site helps you share your knowledge and creativity with the world. Creative Commons develops, supports, and stewards legal and technical infrastructure that maximizes digital creativity, sharing, and innovation.

- *"10 Simple Ways to Create Your Personal Learning Network."* Accessed from Edudemic at <http://www.edudemic.com/wp-content/uploads/2013/07/pln.jpg>.

This image file enumerates the ways by which you can create your personal learning network.

- Watanabe-Crockett, Lee. 3 June 2017. "8 Tools Built for Perfecting Your Personal Learning Network." Accessed from Global Digital Citizen Foundation at <https://globaldigitalcitizen.org/8-tools-personal-learning-network>.

This article offers basic ways of using online tools to help you get started in creating and building your own personal learning network.

Pinterest

According to [Wikipedia](#), Pinterest is a web and mobile application company that offers a visual discovery, collection, sharing, and storage tool. Users create and share the collections of visual bookmarks (boards). Boards are created through a user selecting an item, page, website, etc. and pinning it to an existing or newly created board. Users save and share pins from multiple resources onto boards based on a plethora of criteria, e.g., similar characteristics, a theme, birthday parties, planning a vacation, writing a book, interior decorating, and holidays. Boards can develop projects, organize events, or save pictures and data together.

- *"The Teacher's Guide to Pinterest."* Accessed from Edudemic website at <http://www.edudemic.com/guides/the-teachers-guide-to-pinterest/>.

This article compiles a list of ideas on how to make use of Pinterest in an education setting.

- Kharbach, Med. June 2012. *"Educators Guide to the Use of Pinterest in Education."* Accessed from Educational Technology and Mobile Learning website at <https://www.educatorstechnology.com/2012/06/educators-guide-to-use-of-pinterest-in.html>.

This article first talks about what Pinterest is and how it works, and then gives tips on how it can be used for education. A list of suggestions for teachers is included in the article, as well as some tutorials on how Pinterest works.

- Kharbach, Med. 30 May 2013. *"30+ Ways Teacher Can Use "Pinterest."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/05/30-ways-teachers-can-use-pinterest.html>.

This post compiles web links to articles discussing the many uses of Pinterest in education.

- Infographic on *"Professors, Peers, and Pinterest."* Accessed from World Wide Learn website at https://www.worldwidelearn.com/imagesvr_ce/5719/professors-peers-pinterest.png.

This infographic presents some data on the role of Pinterest in and out of the classroom, as well as its popularity. It also offers tips for newbies and for teachers; presents how colleges are using Pinterest; and gives a number of reasons why you should try using it, too.

Skype in Education

If you are looking to know about how Skype can be adapted for classroom use, then the web resources listed below can help you achieve that.

- Kharbach, Med. June 2012. *"The Complete Guide to the Use of Skype in Education."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/06/complete-guide-to-use-of-skype-in.html>.

This article first talks about what Skype is and what its features are, and then discusses why you as a teacher would need this application. The article includes a discussion on the importance of Skype in education; some tips for teachers, including how Skype can be used in the classroom; stories shared by teachers who have successfully used Skype with their students; and some video tutorials on how to use Skype.

- *"Three ways to use Skype in the Classroom."* Accessed from Skype in the Classroom at https://education.skype.com/?utm_source=newsletter&utm_medium=email&utm_campaign=update_mar_2013.

Skype Group Video Calling gives you the ability to participate in group video calls with up to nine different classrooms. This means that your class can connect with many classrooms from different cities, countries or continents at the same time.

Wikis in Education

You can access Wikis covering different topics at the links below. Keep in mind that the contents of these websites are collaboratively created by Internet users; therefore, you should always seek other references to validate information sourced from Wikis.

- *"Wikianswers."* Accessed at <http://wiki.answers.com/>.

Wikianswers is a great platform for teachers and students. You can use it to look for answers pertaining to any field of study from astronomy to education.

- *"Wikihow."* Accessed at <http://www.wikihow.com/Main-Page>.

Wikihow is a collaborative effort to create the world's most helpful how-to guides. Like Wikipedia, Wikihow is a Wiki, in that anyone can write or edit a page on the site. Thousands of people from all over the world have collaboratively written 147,179 how-to articles. Over 35 million people a month read Wikihow according to Google Analytics, and Quantcast ranks it as the 150th most popular website.

- *"Wiktionary."* Accessed at <http://www.wiktionary.org/>.

Wiktionary is a collaborative project for creating a free lexical database in every language, complete with meanings, etymologies, and pronunciations.

- “Wikiquote.” Accessed at <http://www.wikiquote.org/>.

Wikiquote is a free online compendium of sourced quotations from notable people and creative works in every language, translations of non-English quotes, and many more.

- “Wikisbooks.” Accessed at <http://www.wikibooks.org/>.

Wikibooks is a Wikimedia project for collaboratively writing open-content textbooks that anyone, including you, can edit right now by clicking on the edit link.

- “Wikispecies.” Accessed at http://species.wikimedia.org/wiki/Main_Page.

Wikispecies is a wiki-based online project supported by the Wikimedia Foundation. Its aim is to create a comprehensive free content catalogue of all species.

- “Wikiversity.” Accessed at <http://www.wikiversity.org/>.

Wikiversity is a Wikimedia Foundation project devoted to learning resources, learning projects, and research for use in all levels, types, and styles of education.

- “Wikinews.” Accessed at <http://www.wikinews.org/>.

Wikinews is a free-content news source wiki and a project of the Wikimedia Foundation. The site works through collaborative journalism.

- “Wikisource.” Accessed at http://wikisource.org/wiki/Main_Page.

Wikisource is a Wikimedia project to build a library of free texts. It was initially called “Project Sourceberg.”

- “Wikivoyage.” Accessed at <http://www.wikivoyage.org/>.

“Wikivoyage” is a free web-based travel guide for both travel destinations and travel topics written by volunteer authors.

YouTube Channel for Teachers

The following are YouTube Channels that create free educational content for you and your students. Videos on a wide range of topics can be accessed on these channels, which will be helpful for students who learn best visually.

- “The Video Math Tutor.” Accessed at <http://www.youtube.com/user/videomathtutor>.

This is a great channel that provides several tutoring math videos covering different topics including basic math lessons, calculator tips, brain teasers, and many more.

- “Khan Academy.” Accessed at <http://www.youtube.com/user/khanacademy?gl=CA>.

This is one of the most popular channel on YouTube with more than 200 million video views and 424 thousand subscribers. Khan provides great educational videos on math, geometry, physics and many more.

- “YouTube Education.” Accessed at <http://www.youtube.com/education>.

This page compiles all education-related videos that include videos with tags on medicine, lifelong learning, primary and secondary education, university, and many more.

- “YouTube Teachers.” Accessed at <http://www.youtube.com/user/teachers> on 10 October 2014.

This section in YouTube includes over 700,000 videos on higher education from over 800 channels.

- “Buck Institute for Education.” Accessed at <http://www.youtube.com/user/BIEPBL>.

Buck Institute for Education (BIE) is dedicated to improving 21st century teaching and learning by creating and disseminating products, practices and knowledge for effective project-based learning.

- “Mental Floss.” Accessed at <https://www.youtube.com/user/MentalFlossVideo>.

The channel releases crash course videos on a variety of topics. Teachers and students can find introductory materials on just about anything from world history to popular culture.

- “TeachingChannel.” Accessed at <http://www.youtube.com/user/TeachingChannel>.

This is a channel that provides awesome educational videos with more than 3470 subscribers.

Chapter 3

21st Century Teaching and Learning

Every teacher is concerned about their teaching practices and the skills involved in the process. How many times have you wondered about a better way to teach the same lesson you have delivered to an earlier class? How often have you used technology to engage your students and improve their learning? These are some questions you keep asking yourself each time your teaching skills are put to a test. It is amazing how technology has changed the whole world, giving rise to new forms of education you never thought of. The teaching-learning process can immensely benefit from technology. For one, technology offers a variety of tools that can help you guide students in exercising higher order thinking skills, including critical and creative thinking skills. Keep in mind that your students nowadays are generally more digitally focused than those who came before them. They spend more time interacting with their mobile devices and rely on online sources in doing their homework or research projects. Take this as an opportunity to further develop your students' HOTS, such as their critical and creative thinking, by interacting with them through media they understand best.

In this chapter you will find websites, videos, articles, researches, and many more educational resources for 21st century teaching and learning.

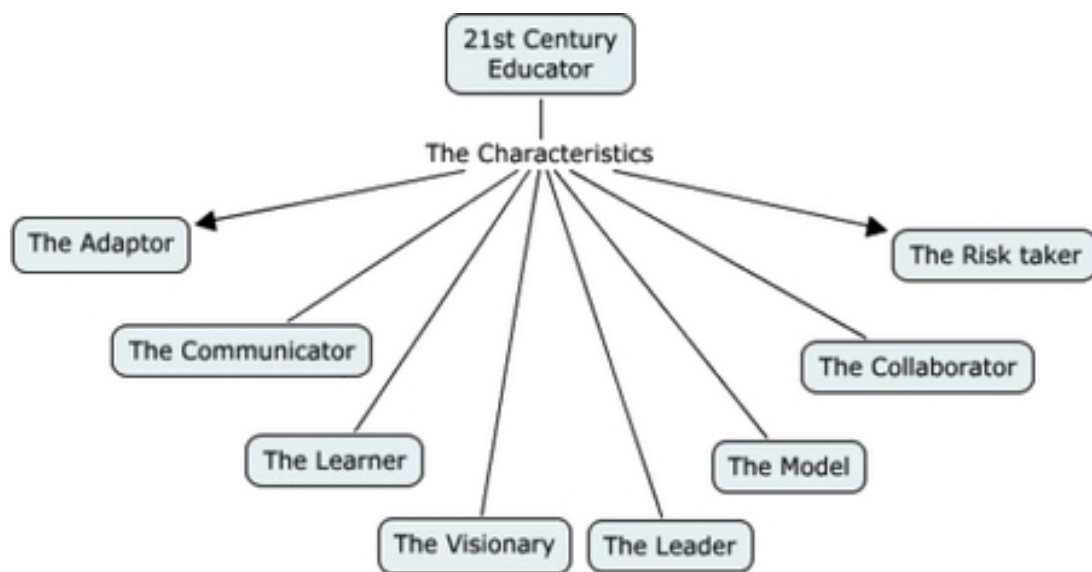
3.1 Knowledge and Skills

21st Century Teaching Skills

The following links to websites and web articles provide you with insights, tips, and strategies for 21st century teaching and learning.

- Churches, Andrew. 04 September 2009. *"Teaching Skills: What 21st Century Educators Need to Learn to Survive?"* Accessed from Master New Media website at <http://www.masternewmedia.org/teaching-skills-what-21st-century-educators-need-to-learn-to-survive/#ixz2fCNE ozC3>.

This web page discusses traits of an ideal 21st century teacher given the new trends emerging inside schools and other educational environments. Andrew Churches presents a diagram of the profile of what this new breed of educators look like. Study the diagram.



- Junco, Rey. 01 November 2010. "Academic Excellence in 140 Characters." Accessed from YouTube at http://www.youtube.com/watch?feature=player_embedded&v=SVOY2x81_bg.

Created by a college student, this short video summarizes the results of a research conducted on the effects of Twitter on student engagement and grades. The study reveals that "social media can be used in educationally relevant ways." The abstract of the journal article based on this research is also available online at: <http://dx.doi.org/10.1111/j.1365-2729.2010.00387.x>

- Kharbach, Med. December 2012. "Check Out If You Correctly Integrate Technology Using This Awesome Rubric." Accessed from Educational Technology and Mobile Learning website at <http://www.educators-technology.com/2012/12/a-must-have-rubric-to-correctly.html>.

This article presents a downloadable rubric that can be used to determine if technology is being used correctly for classroom teaching. The rubric, called "Technology Integration Matrix," provides a framework for defining and evaluating technology integration. It sets a clear vision for effective teaching with technology and gives teachers and administrators a common language for setting goals. The rubric also helps target professional development resources effectively.

- Opfer, V. Darleen and Anna Rosefsky Saavedra. N.d. "Teaching and Learning 21st Century Skills: Lessons from the Learning Sciences." Accessed from <https://asiasociety.org/education/teaching-and-learning-21st-century-skills>

The article distills decades of research on the science of learning into nine brief points that discuss how teachers can respond to the learning needs of students today. In addition, the science of learning provides many insights

on how educational institutions can move from the transmission model of pedagogy to a constructivist one where students' active learning is given emphasis.

- Sakamoto, Barbara. 10 December 2011. *"Tools for 21st Century Teachers (by Nour Alkhalidy)." Accessed from Teaching Village website at <http://www.teachingvillage.org/2011/12/10/tools-for-21st-century-teachers/>.*

This is a guest post by Nour Alkhalidy, a Jordanian computer teacher, who shared her experiences on using technology tools, or web 2.0 tools, for classroom and for her own career advancement. The tools she identified are all free, promote the 4Cs (critical thinking, communication, collaboration, and creativity), and support her native language. Among these tools are Popplet, Twitter, and Wordle.

Bloom's Taxonomy

Bloom's Taxonomy is a framework for classifying thinking skills and learning objectives. Named after education psychologist Dr. Benjamin Bloom, it identifies three types of learning domains: cognitive, affective, and psychomotor. This paradigm is especially useful to teachers in structuring classroom activities and assessments that promote higher order thinking skills among students.

The following links to websites and articles provide you with insights on recent development and application of Bloom's Taxonomy.

- Clark, Donald. 07 July 2014. *"Bloom's Taxonomy of Learning Domains."* Accessed from A Big Dog & Little Dog's Performance Juxtaposition at <http://www.nwlink.com/~donclark/hrd/bloom.html>.

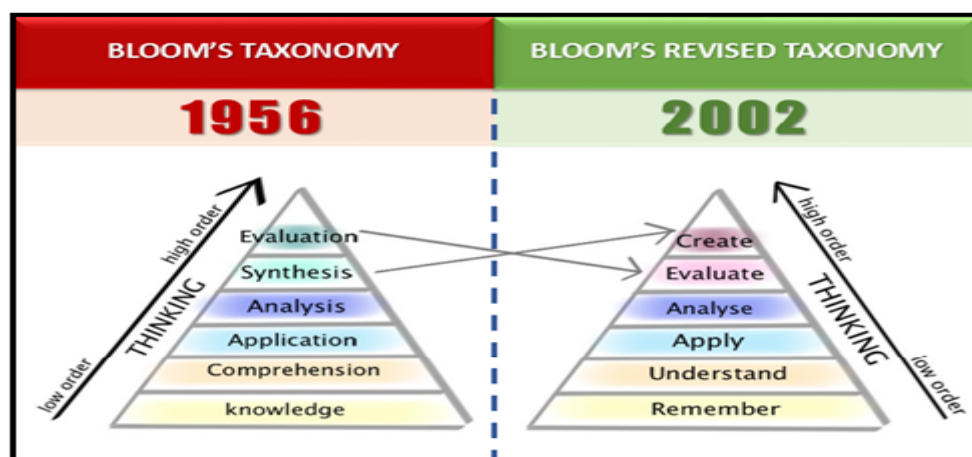
This presents a discussion on the three learning domains of Bloom's Taxonomy. Trainers often refer to these three categories as knowledge, skills, and attitudes, or simply as KSA. The resource provides matrices of the original and revised taxonomy, as well as an alternative model—the Structure of Observed Learning Outcome (SOLO) taxonomy. While Bloom's Taxonomy and even its revised version have both been quite useful, the author argues that newer models like SOLO Taxonomy have been proven more useful.

- Schrock, Kathy. 11 July 2011. "Bloomin' Apps." Accessed from Kathy Schrock's Guide to Everything website at <http://www.schrockguide.net/bloomin-apps.html>.

This web page gathers all of the Bloomin' Apps projects in one place as compiled by Kathy Shrock, administrator of the website, "Kathy Schrock's Guide to Everything." Here you can find links to several apps from iPad, Android, Google, Web 2.0, and others that support Bloom's Revised Taxonomy. There are also downloadable images (jpg) and PDF files, and links to creative visualizations of Bloom's taxonomies (original and revised). It also invites discussions with the blog owner through Twitter.

- Zaid Ali Alsagoff. 12 May 2014. "Pedagogy Wheel - A new twist on Bloom's Taxonomy." Accessed from ZaidLearn blog site at <http://learn2teachtech.blogspot.com/2013/05/pedagogy-wheel-new-twist-on-blooms.html>.

This blog post refers to a pedagogy wheel designed by Allan Carrington, which offers an interesting twist to Bloom's Taxonomy. The pedagogy wheel marries Bloom's Taxonomy with activities and digital tools, as well as links to relevant applications in an educational setting.



Source: zaidlearn.blogspot.com

- Rao, Aditi. 19 April 2013. "25 Ways to Use Pinterest with Bloom's Taxonomy." Accessed from Pinterest at <http://teachbytes.com/2013/04/19/25-ways-to-use-pinterest-with-blooms-taxonomy/>.

This blog post from TeachBytes presents in graphic form several ways to use Pinterest—an online bookmarking website—to apply Bloom's Taxonomy to classroom activities. Author Aditi Rao further recommends ways to use other social networking sites and presentation tools in combination with Bloom's Taxonomy for classroom activities and as an assessment tool.

- Kharbach, Med. January 2013. "Web-Based Version of Bloom's Taxonomy (30+ Digital Tools)." Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/01/web-based-version-of-blooms-taxonomy-30.html>.

This post compiles links to various online applications, websites and tools that are useful to promote the principles of Bloom's Taxonomy.

Classroom Management

In an introduction to an online teacher's module on classroom management, Tom Kratochwill, PhD, from the University of Wisconsin, wrote that classroom management, often called "classroom discipline," has been a priority for teachers for nearly 40 years, or for as long as there have been opinion surveys of educational priorities.

In a [2006 survey](#) by the American Psychological Association (APA) on the needs of Pre-K through 12th grade teachers, teachers identified classroom management and instructional skills as the areas where they need the most help. Results from over 2,300 responses showed that teachers wanted assistance in classroom management because of their concerns about student safety and their desire for strategies to deal effectively with students' negative and/or disruptive behaviors.

According to Evertson and Weinstein (2006), classroom management has two distinct purposes: *"It not only seeks to establish and sustain an orderly environment, so students can engage in meaningful academic learning, it also aims to enhance student social and moral growth"* (p. 4). The authors identify five specific tasks that show classroom management is a multi-faceted activity. It extends beyond some of the more traditional behavior management techniques frequently recommended to deal with students who have disruptive behaviors. Specifically, they note that teachers should do the following:

1. develop caring, supportive relationships with and among students;
2. organize and implement instruction in ways that optimize students' access to learning;
3. use group management methods that encourage student engagement in academic tasks;
4. promote the development of student social skills and self-regulation; and
5. use appropriate interventions to assist students who have behavior problems.

To read more about classroom management as published in the American Psychological Association website, tap on the following link: <http://www.apa.org/education/k12/classroom-mgmt.aspx>.

Here are other links to more web resources about classroom management.

- Terrell, Shelly. 19 December 2013. *"Survival Tips for Classroom Management."* Accessed from Teacher Reboot Camp blog site at <http://teacherrebootcamp.com/survivaltips/classroommanagement/>.

Shelly Terrell, in her blog site Teacher Reboot Camp, shares from experience what she learned about classroom management as an educator for many years. According to her, while it is not adequately taught in most teacher development programs, classroom management is actually one of the most important skills for a teacher. In her post, she shares tips and resources contained in a SlideShare presentation that she hopes teachers like you will find useful. One of her tips includes knowing the kind of students a teacher has in her class and preparing ahead to meet their various learning needs and attention spans. She also suggests making students accountable for their behavior, and engaging parents.

- Foley, Dave. *"Six Classroom Management Tips Every Teacher Can Use."* Accessed from National Education Association website at <http://www.nea.org/tools/51721.htm>.

This article shares some of the most important techniques in classroom control and management that will enable teachers to maximize their time devoted to the learning of students.

Critical Thinking

Whether you are looking to better understand the concept of critical thinking or looking to get new ideas on how to go about discussions that exercise students' critical thinking, the web resources listed below will be able to help you.

- Scriven, Paul, et al. *"Defining Critical Thinking."* Accessed from The Critical Thinking Community website at <http://www.criticalthinking.org/pages/defining-critical-thinking/766>.

"The Critical Thinking Community" published an article that offered overlapping definitions of the term "critical thinking" to substantiate the concept. There was the definition offered by the National Council for Excellence in Critical Thinking as presented by Michael Scriven and Richard Paul during the 8th Annual International Conference on Critical Thinking and Education Reform in 1987. There is also the brief conceptualization from Linda Elder, and another one taken from *The Miniature Guide to Critical Thinking Concepts and Tools* also by Linda Elder and Richard Paul.

- “Critical Thinking on Pinterest.” Accessed from Pinterest at <http://www.pinterest.com/mentoringminds/critical-thinking>.

This web page provides 25 pins on developing critical thinking skills in the classroom which you may find useful.

- Kharbach, Med. September 2009. “What Does Critical Thinking Mean in Education?” Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/09/critical-thinking-learning.html>.

This post contains a video that describes critical thinking as a diverse range of intellectual skills concerned with evaluating information and thoughts in a disciplined way. It also describes a multitude of benefits that critical thinking offers for educators.

- Kharbach, Med. December 2012. “6 Great Videos on Teaching Critical Thinking.” Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/12/6-great-videos-on-teaching-critical.html>.

This article recommends links to short videos on critical thinking, which you can use to stimulate discussions with your learners. Apart from the video links, the article also lists related articles on critical thinking found within the Educational Technology and Mobile Learning website.

Digital Citizenship

According to the Digital Citizenship website, “digital citizenship” is a concept that helps teachers, technology leaders, and parents to understand what students, children, and technology users should know to use technology appropriately. Digital citizenship is more than just a teaching tool. It is a way to prepare students/technology users for a society full of technology including dealing with cyber-related risks and threats, as well as maximizing opportunities of the digital universe. Likewise, digital citizenship includes the norms of appropriate and responsible technology use.

In this section on digital citizenship, you will find descriptions of web resources that can help teachers like you to promote safe and responsible technology use among students. Among the topics covered are:

- anti-bullying,
- copyright,
- cyberstalking,
- internet addiction,

- misinformation and fake news,
- plagiarism, and
- trolling.

MT4T also has an e-book on digital citizenship, entitled [*e-Citizenship: Cyber Wellness and Digital Citizenship for Teachers*](#). Tap on the link to access the e-book. Additionally, you can expound your knowledge and understanding of digital citizenship through the following web resources:

- Ribble, Mike. *"Nine Themes of Digital Citizenship."* Accessed from Digital Citizenship website at <http://www.digitalcitizenship.net/nine-elements.html>.

This post defines different themes of digital citizenship, which include digital citizenship, digital commerce, digital communication, digital literacy, digital etiquette, digital law, digital rights and responsibilities, digital health and wellness, and digital security.

- Watanabe-Crockett, Lee (infographic created by knowthenet.org). *"Manners Matter: Be a Better Digital Citizen."* Accessed from <https://globaldigitalcitizen.org/manners-matter-digital-citizenship-infographic>.

This infographic presents a simple guide on how to become a better digital citizen. It gives a list of what to do and not to do to avoid "looking like a fool online." One of the don'ts is not to forget the human behind the (computer) screen. It says, "Remember that all internet users are real human beings with feelings. Don't say anything online that you wouldn't say to someone's face." Most likely, you know about this already, but you tend to forget so it's nice to be reminded through this infographic. Your students will likely appreciate this, too, so share this with them.

- Silver, James. 12 May 2013. *"20 Ways to Keep Your Internet Identity Safe From Hackers"* Accessed from The Observer website at <http://www.guardian.co.uk/technology/2013/may/12/20-ways-keep-internet-identity-safe>.

This post enumerates tips on how to protect your identity online from opportunists and hackers. It will be good if you can share these with your students, too.

- Kharbach, Med. May 2013. *"A Must-Have List of Resources on Digital Citizenship for Teachers."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/05/a-must-have-list-of-resources-on.html>.

This post compiles several useful resources on digital citizenship from the website, Edutopia. It has links to topics on cyber bullying, the importance of netiquette, and internet safety, among others, which you can make use of for classroom teaching and in daily life.

- *"Digital Citizenship and Safety Course."* Accessed from Google for Education website at https://edutrainingcenter.withgoogle.com/digital_citizenship/preview.

This online course developed by Google for Education provides teachers with resources on how they can integrate lessons and activities on digital citizenship and safety into their classroom curricula.

- NSW Curriculum and Learning Innovation Centre. 2011. *"Digital Citizenship."* Accessed from NSW Education & Communities website at <http://www.digitalcitizenship.nsw.edu.au/>.

This website contains essential information for students, teachers and parents about digital citizenship and about being safe, positive and responsible online. The resources are divided into three major sections: Primary, Secondary, and Parents. The Primary and Secondary sections offer games, learning activities, videos, and teacher resources. The section on parents, on the other hand, contains guides about digital citizenship.

- *"The 8 core DQ Citizenship Skills Children Need."* Accessed from DQ World website at https://www.dqworld.net/lang:en_GB/#!/landing/whatisdqworld.

This page on the DQ World website provides an infographic of the eight (8) core DQ Citizenship Skills that DQ world identified as necessary for children to become responsible and intelligent digital citizens. A brief explanation of every skill is also available on the page.



- *"Experts' Meeting for Fostering Digital Citizenship through Safe and Responsible Use of ICT."* Accessed from UNESCO Bangkok website at <http://www.unescobkk.org/education/ict/ict-in-education-projects/responsible-use-of-ict/experts-meeting-for-fostering-digital-citizenship-through-safe-and-responsible-use-of-ict/>.

This meeting held in March 2014 was the first step in UNESCO Bangkok's new initiative that aims to "promote policy dialogue on the issues of responsible and safe use of ICTs and in building the education sector's capacity in fostering students' digital citizenship." SEAMEO INNOTECH's project on Mobile Technology for Teachers, formerly referred to as TRK-MT21, was among those projects featured in this meeting. Check out this page to learn about other projects, best practices and researches shared by experts and practitioners during the meeting.

➤ **Anti-Bullying**

On the Internet where adult supervision over students' online activities is difficult to exercise, students may find themselves to be the subject of a discomforting interaction with other Internet users. Teachers like you should be equipped with knowledge on how to guide students in protecting themselves from situations that may put their well-being at risk. Listed below are resources on anti-bullying which you can read through to learn more about its dangers and possible interventions on it.

- *"Stop Bullying! Infographic."* 6 November 2015. Accessed from eLearning Infographics website at <https://elearninginfographics.com/stop-bullying-infographic/>.

This infographic provides general information on the things you should know about bullying including its nature and some statistics. It also defines bullying and what actions would qualify as such.

- *"Prevention: Teach kids how to identify bullying and how to stand up to it safely."* Accessed from <http://www.stopbullying.gov>.

This website provides information from various government agencies to answer questions about what bullying is, what cyber bullying is, who is at risk, and how you can prevent and respond to bullying. There are many documents and images that you can use and share with students, parents, and colleagues.

- Bullying UK. Accessed from <http://www.bullying.co.uk/>.

This website provides detailed advice on a range of problems including cyber bullying inside and outside school. It features a section called "Guidance for Schools" where teachers and education professionals can get advice and tips on how to deal with bullying.

- Anti-Bullying Network. Website established by the University of Edinburgh. 1999. Accessed from Anti-Bullying Network at <http://www.antibullying.net/resourceswwwlinks.htm>.

This "Anti Bullying Network" is a website devoted to fighting bullying. It includes links to several other resources that you will definitely find educative on this topic. It also features websites for young people in its homepage with links to some great websites where students can learn how to protect themselves from bullying.

- *"DQ Challenge."* Accessed from the DQ World website at <https://www.dqworld.net/#!/doc/dqchallenge>.

DQ World hosts an annual competition centered on the 8 digital skills that if mastered will enable the youth to become intelligent digital citizens. The competition is open to all school children ages 8-12. Further information on how to register and earn points, eligibility, and the awards and prizes can be found on their website.

➤ Copyright

Dealing with intellectual and creative work, and their copyright can be quite tricky. The resources available below will give you more information about what to look out for to avoid copyright infringement. There are also web resources that offer tips on how intellectual property rights can be taught in class.

- “Creative Commons.” Accessed from visual.ly at http://visual.ly/what-creative-commons?utm_source=visually_embed.

This post contains information on what Creative Commons is about, how to use it, what it is all about, and how publishers allow users to use their published books and articles.

- “Teaching Copyright” website. Accessed at <http://www.teachingcopyright.org/>.

This website offers a detailed, customizable learning plan to help educators raise interesting questions about copyright, technology, and law.

- “Copyright Advisory Network” website. Accessed at <http://librarycopyright.net/>.

This website offers a way for librarians to learn about copyright and see feedback and advice from fellow librarians and copyright specialists.

- Stanford University Libraries. “Copyright & Fair Use.” Accessed from the Stanford University Libraries website at <https://fairuse.stanford.edu/overview/fair-use/what-is-fair-use/>.

This page can help you learn a great deal about the basics of copyright and fair use.

- “Reasoning.” Accessed from Copyright Confusion website at <http://copyrightconfusion.wikispaces.com/Reasoning>.

This post contains suggestions and guidelines on the fair use of online resources and copyrighted materials. This can be useful for understanding how copyrighted materials are protected.

- Fryer, Wesley. 2002. “Tools for the Teks: Integrating Technology in the Classroom.” Accessed from Wikispaces website at <https://teamdelearning.wikispaces.com/file/view/Tools-for-the-TEKS.pdf>.

This link contains a must-read page about the implications of copyright issues when using technology in the classroom.

- “TeachersFirst’s Copyright and Fair Use Resources.” Accessed from TeachersFirst website at <http://www.teachersfirst.com/spectopics/copyrightandfairuse.cfm>.

This provides a collection of reviewed resources from TeachersFirst, selected to help teachers, parents, and students understand concepts of copyright and Fair Use. The collection includes instructional activities about copyright and collections/tools to use images, music, and texts legally, either through Fair Use or Creative Commons licensing.

➤ **Cyberstalking**

Cyberstalking can pose real threats to people's privacy and security, considering the amount of information shared about people's personal lives on social media platforms. Teenagers frequent use of networking sites make them even more vulnerable to becoming targets of this malicious activity. The good news is that students can learn effective and easy techniques to protect themselves when using the Internet for socializing.

The following are web resources that you can use to learn more about cyberstalking.

- "Cyberstalking." Accessed from techopedia website at <https://www.techopedia.com/definition/14326/cyberstalking>

This article is a helpful resource for those seeking introductory information on cyberstalking and how to protect oneself from it. If one is suspecting that they are being stalked online, the article also suggests legal and technical preventive measures to take.

- Katehakis, Alexandra. 19 April 2016. "10 Tips to Protect Yourself from Cyberstalking." Accessed from Psychology Today website at <https://www.psychologytoday.com/us/blog/sex-lies-trauma/201604/10-tips-protect-yourself-cyberstalking>.

Available in this article are tips on how to increase privacy and security on the Internet. As the age-old adage goes, an ounce of prevention is worth a pound of cure.

- ReputationDefender. 21 March 2017. "6 Guidelines to Protect Yourself from Cyber Stalking." Accessed from ReputationDefender page on Medium at <https://medium.com/@ReputationDefender/6-guidelines-to-protect-yourself-from-cyber-stalking-48db8b00a0a4>.

In this digital age where no one is immune from the risks of online interaction, everyone must be informed about the ways they can protect themselves. This page offers guidelines on how users of the Internet can heighten their protection against cyber stalking.

- Kavanagh, Emma. *"Cyber Stalking: Protecting Yourself against Cyber Harassment."* Accessed from Norton Security Online website at <https://www.nortonsecurityonline.com/blog/cyber-stalking/>.

Being the subject of cyberstalking can take its toll on one's psychological well-being, especially because the dangers of cyberstalking can extend into one's life outside of the internet. Learning about some of the precautionary measures that internet users can take then becomes of paramount importance. In this article, cyberstalking and its prevention are discussed.

- *"Relevant Literature and Future Readings (on cyberstalking)."* Accessed from Google Sites website at <https://sites.google.com/site/onlineriskthecyberstalker/relevant-literature-and-future-readings>.

This page on Google Sites provides you with a list of suggested readings on the subject of cyberstalking.

➤ Internet Addiction

Mobile devices made the Internet more accessible to the general public. This undeniably has made some aspects of daily life easier and more convenient. People can pay bills wherever they are, they can monitor what is happening in their homes remotely, and many other benefits. However, this development also paved the way for some new challenges and risks associated with internet use. Specifically, people are at risk of falling into internet addiction. Just like substance abuse and other types of behavioral addiction, internet addiction disorder is marked by excessive use that interferes with one's normal, daily functioning.

The following are web resources that you can use to learn more about internet addiction.

- Konnikova, Maria. 26 November 2014. *"Is Internet Addiction a Real Thing?"* Accessed from The New Yorker website at <https://www.newyorker.com/science/maria-konnikova/internet-addiction-real-thing>.

The author explores the legitimacy and reality of internet addiction. Confusion as to the validity of the condition arises when internet is viewed as a medium even when it elicits the same behavioral and neurochemical manifestations. This then leads to the inevitable question of whether one really is addicted to the internet or to the activity made possible by the internet.

- Greenfield, David. 20 October 2017. *"Digital Distraction: Internet and Smartphone Addiction."* Accessed from Psychology Today website at <https://www.psychologytoday.com/blog/virtual-addictions/201710/digital-distraction-internet-and-smartphone-addiction>.

In this article, the compounding effect of smartphone on internet addiction is discussed in detail. Smartphones gave a whole new dimension to internet use by enabling users to access it more conveniently. This recent technological advancement poses new challenges in educating the public about the risks and actual dangers of unmonitored and excessive use of ICT.

- Gregory, Christina. *"Internet Addiction Disorder: Signs, Symptoms, and Treatments."* Accessed from PSYCOM website at <https://www.psycom.net/iadcriteria.html>.

As digital technology becomes more easily accessible and more connected to every aspect of people's lives, educators should be equipped with information on one major risk associated with ICT use, namely internet addiction. Teachers can access this web resource to learn more about what internet addiction is, what causes it, how to spot someone who suffers from this condition, and the available treatment options.

- *"Choosing the Best Internet Addiction Rehab Program."* Accessed from Rehabs website at <https://www.rehabs.com/about/internet-addiction-rehabs/>.

Available in this webpage are descriptions of different rehabilitation options for those who are suffering from internet addiction. It gives a bird's eye view of the entire process, from treatment duration, treatment methods, residential and outpatient arrangements, to what one can expect after undergoing treatment. This can help teachers guide students battling with this condition to seek professional help.

- *"16 Best New Internet Addiction Books to Read In 2018."* Accessed from Book Authority website at <https://bookauthority.org/books/new-internet-addiction-books>.

This page lists down book recommendations on the subject of internet addiction. Every book recommendation shows a brief description, rating, available reviews, and a live link to Amazon where you can purchase the book online.

➤ Misinformation and Fake News

The advent of the internet gave rise to a more democratic access to and exchange of information. With the ease in sharing of information comes the risk of enabling biased, misleading, and false information to perpetuate and shape public opinion. Children are susceptible to this risk considering the amount of time they spend online. It is therefore important that teachers become a part of students' support system in developing their critical thinking to deal with digital information for their own use in an intelligent and responsible way.

The following are web resources that you can use to learn more about misinformation and fake news.

- o Vis, Farida. 24 April 2014. *"To Tackle the Spread of Misinformation Online We Must First Understand It."* Accessed from The Guardian website at <https://www.theguardian.com/commentisfree/2014/apr/24/tackle-spread-misinformation-online>.

The article is a reminder to everyone to approach information online with reasonable skepticism. Understanding that information circulated on the internet can be maliciously altered or completely fabricated is the first step to stopping the spread of fake news. Educators can get a lot of insights from this to share with their students.

- o Lee, Rainie and Anderson, Janna. 19 October 2017. *"The Future of Truth and Misinformation Online."* Accessed from The Pew Research Center website at <http://www.pewinternet.org/2017/10/19/the-future-of-truth-and-misinformation-online/>.

"Experts are evenly split on whether the coming decade will see a reduction in false and misleading narratives online. Those forecasting improvements place their hopes in technological fixes and in societal solutions. Others think the dark side of human nature is aided more than stifled by technology."

- o Vis, Farida. 25 January 2014. *"The Rapid Spread of Misinformation Online."* Accessed from The Huffington Post website at https://www.huffingtonpost.com/farida-vis/the-rapid-spread-of-misinformation-online_b_4665678.html.

Social media or the internet in general may have facilitated the spread of false information but it is not solely responsible for the phenomena. The author further emphasizes this by saying that social, political, and cultural circumstances should also be taken into

account. Tackling the issue of misinformation should examine the specific and unique contexts in which they occur.

- o Menczer, Filippo. 28 November 2016. *"Misinformation on Social Media: Can Technology Save Us?"* Accessed from The Conversation website at <http://theconversation.com/misinformation-on-social-media-can-technology-save-us-69264>.

Many technological fixes can be introduced to stop fake news – from labeling information online as verified or not, to designing algorithms that will offer social media users differing points of view. This, however, may not suffice in addressing such a complex issue. The author of the article asserts that this will require coordinated efforts of specialists in the social sciences, journalism, and computer studies among others.

- o Orlando, Joanne. 26 June 2017. *"How to Help Kids Navigate Fake News and Misinformation Online."* Accessed from The Conversation website at <http://theconversation.com/how-to-help-kids-navigate-fake-news-and-misinformation-online-79342>.

Considering the average amount of time spent daily on the internet, it is imperative that educators exercise students' critical thinking in dealing with digital information. To reiterate the author, it is not enough that children's computer use is supervised; they should be engaged in conversations that will inform them how to assess and responsibly use what they find online.

- o Rappler. 04 October 2017. *"How to Spot Fake News."* Accessed from Rappler website at <https://www.rappler.com/technology/183701-how-to-spot-fake-news>.

The article gives tips on how to tell reliable news from false or misleading ones. It also provides a one-minute informational video about the topic.

- o Tavlin, Noah. 27 August 2015. *"How False News Can Spread."* Accessed from TED-Ed channel on YouTube at https://www.youtube.com/watch?v=cSKGa_7XJkg.

"In previous decades, most news with global reach came from several major newspapers and networks with the resources to gather information directly. The speed with which information spreads now, however, has created the ideal conditions for something called circular reporting. Noah Tavlin sheds light on this phenomenon."

- o Smolenova, Ivana. 7 July 2017. "*Disinformation Phenomenon: Its Roots and the Way Forward*." Accessed from TEDx Talks channel on YouTube at <https://www.youtube.com/watch?v=1lm84J0pDxs>.

"In her talk Ivana addresses the problem of disinformation and fake news, untangles the root causes of it and suggests what we can do about it."

As a response to the slew of false information on the internet, concerned organizations put up websites to catalogue fake news. This offers internet users another way to verify information quickly. The following are just a few of those websites.

- o *Snopes*. Accessed from <https://www.snopes.com>.

"Internet reference source for urban legends, folklore, myths, rumors, and misinformation."

- o *Real or Satire*. Accessed from <https://www.realorsatire.com>.

"The internet is full of fake news websites and people that fall for fake news. Use this handy tool for quick analysis of some of the biggest satire websites."

- o *Hoax-Slayer*. Accessed from <http://www.hoax-slayer.net/>.

Hoax-Slayer debunks email and social media hoaxes, thwarts internet scammers, combats spam, and educates web users about email, social media, and internet security issues.

- o *Truth or Fiction*. Accessed from <https://www.truthorfiction.com/>.

Truth or Fiction is a website that debunks rumors, false information, urban legends, and fake news.

- o *PolitiFact*. Accessed from <http://www.politifact.com/#>.

"PolitiFact is a fact-checking website that rates the accuracy of claims by elected officials and others on its Truth-O-Meter."

- o *Sebenarnya*. Accessed from <https://sebenarnya.my/>.

Sebenarnya is a fact-checking site available in Bahasa Melayu.

- o *VERA Files*. Accessed from <http://verafiles.org/>.

“VERA Files tracks the false claims, flip-flops, misleading statements of public officials and figures, and debunks them with factual evidence. Guided by the code of principles of the International Fact-Checking Network at Poynter, a global alliance of fact-checkers committed to advance accountability journalism.”

- o *Factually*. Accessed from the Singapore Government website at <https://www.gov.sg/factually>.

The Singapore Government created this site where authenticity of local and foreign news can be verified.

➤ **Plagiarism**

The temptation students grapple with to get around a school assignment by passing off someone else’s work as one’s own is even more palpable and difficult to resist because of how instant information can be accessed on the internet. Even in the presence of actual academic consequences to cheating, students still find themselves drawn to taking the easy way out. This is where the role of teachers as advisers becomes more pronounced. In this section, resources on plagiarism are provided to further enable teachers to guide students toward a meaningful practice of academic integrity.

The following are web resources that you can use to learn more about plagiarism.

- o Panter, Michaela. “*Defining Plagiarism*.” Accessed from American Journal Experts from <https://www.aje.com/en/arc/editing-tip-defining-plagiarism/>.

One of the reasons students give when confronted with a plagiarism charge is lack of knowledge about what exactly constitutes plagiarism. This reason may in fact have a valid basis given the many forms of plagiarism. In this article, which later has been adopted as a white paper, plagiarism is defined and its types are identified.

- o 7 June 2017. “*Plagiarism: Facts and Stats*.” Accessed from Plagiarism website at <http://www.plagiarism.org/article/plagiarism-facts-and-stats>.

In this article, studies and surveys conducted on the case of plagiarism in high schools and universities are summarized. This can help teachers situate the bigger problem of cheating in their classrooms.

- o Vannest, Allison. 18 February 2015. "5 Most Effective Methods for Avoiding Plagiarism." Accessed from Grammarly Blog website at <https://www.grammarly.com/blog/5-most-effective-methods-for-avoiding-plagiarism/>.

Committing plagiarism unintentionally does not excuse students from academic sanctions. Hence, the need for teachers to encourage students to be diligent in taking steps to ensure that in their school work, credit is given where credit is due. Teachers can get some ideas from this blog entry on Grammarly about some of the ways one can avoid plagiarizing somebody else's work.

- o Qureshi, Huma. 18 April 2009. "A Cut and Paste Affair." Accessed from The Guardian website at <https://www.theguardian.com/education/2009/apr/18/university-life-academic-cheating>.

Dreadful stories of students who once engaged in plagiarism whether by accident or by their own doing can help teachers reinforce the idea among their students that plagiarism has real-life consequences. This article from The Guardian shares experiences of university students who had to deal with a plagiarism charge.

- o Spieler, Gery. 12 January 2013. "Why Students Plagiarize?" Accessed from The Huffington Post website at https://www.huffingtonpost.com/geri-spieler/student-plagiarism-b_2119463.html.

In this brief article, the author explains some of the top reasons students choose to plagiarize. She then proceeds to offering tips on how teachers can help students veer away from such dishonest behavior.

- o Huesman D'Annunzio, Melissa. 14 June 2013. "The Punishable Perils of Plagiarism." Accessed from TED-Ed channel on YouTube at <https://www.youtube.com/watch?v=SrjoaalxajI>.

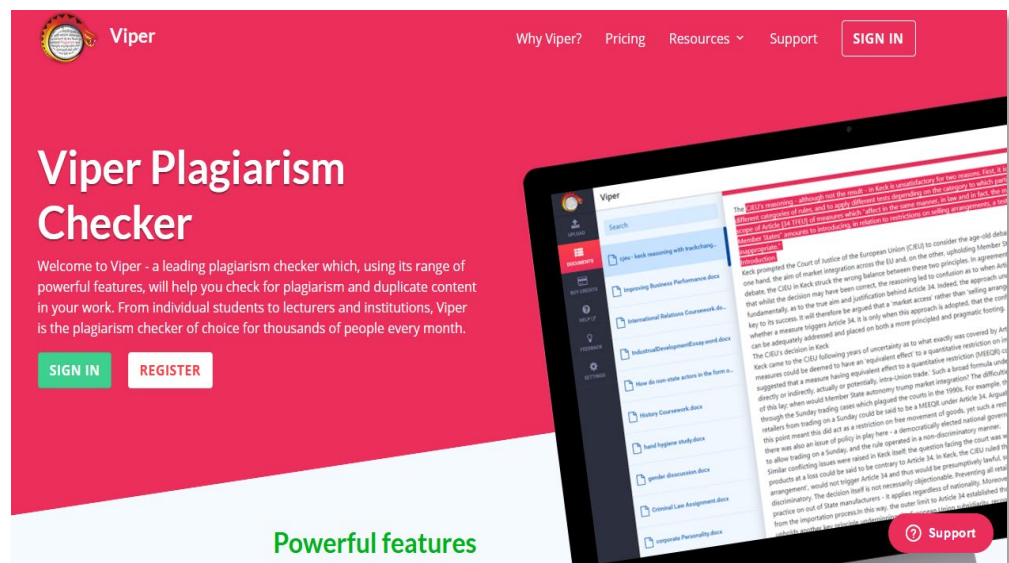
"Fighting plagiarism is serious business. From brainchild-snatching to wholly quotables, plagiarists have plenty of wily ways to pass others' work off as their own -- and all of them are threats to original thinking. Melissa Huseman D'Annunzio imagines what would happen if a Department of Plagiarism Investigation were on the case."

The internet is just as much of a tool for plagiarism as it is for combatting the problem of plagiarism. Specifically, the web offers many applications that check a submitted school work for possible plagiarism. Teachers can

access these applications for free or for a minimal charge. Examples of these anti-plagiarism web-based tools can be found in the succeeding pages.

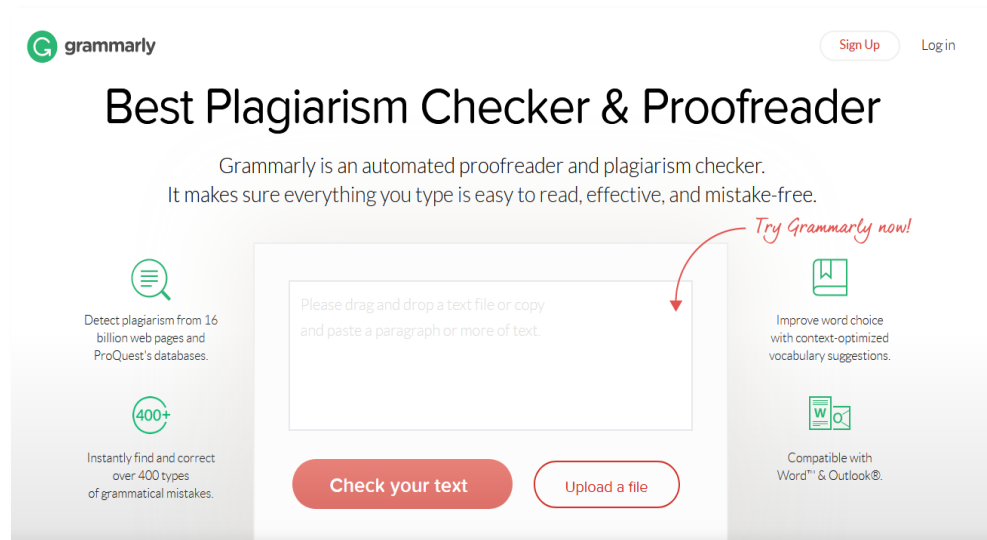
- o "Viper." Accessed from Viper website at <https://www.scanmyessay.com/>.

"A leading plagiarism checker which, using its range of powerful features, will help you check for plagiarism and duplicate content in your work. From individual students to lecturers and institutions, Viper is the plagiarism checker of choice for thousands of people every month."



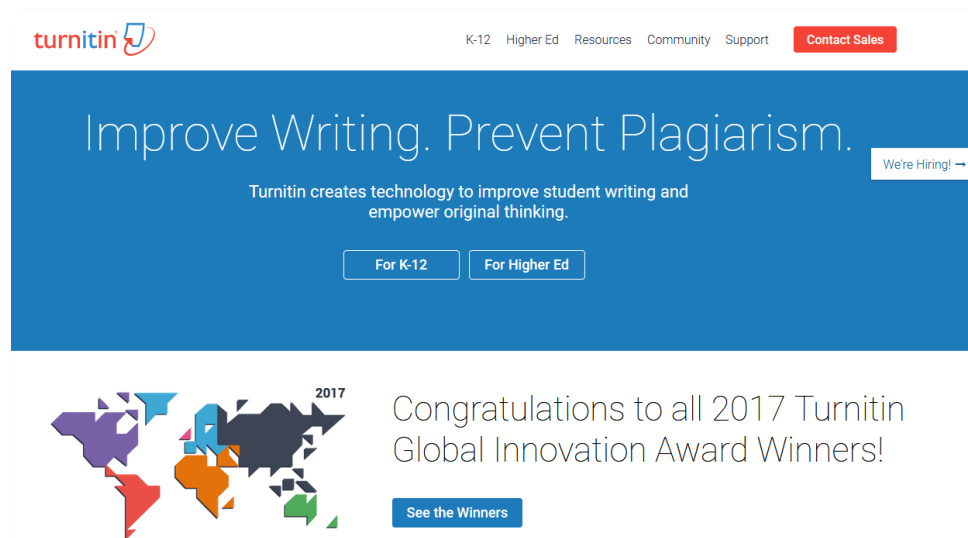
- o "Grammarly." Accessed from Grammarly website at <https://www.grammarly.com/plagiarism?gclid=COHCqbqYyLMCFStgMgod2z8Agw>.

Grammarly is an automated proofreader and plagiarism checker. It makes sure everything you type is easy to read, effective, and mistake-free. Detects plagiarism from 16 billion web pages and ProQuest's databases."



- o "Turnitin." Accessed from Turnitin website at <http://turnitin.com/>.

"Turnitin creates tools for K-12 and higher education that improve writing and prevent plagiarism. Turnitin's formative feedback and originality checking services promote critical thinking, ensure academic integrity, and help students become better writers."



➤ Trolling

In its everyday sense, trolling can pertain to a range of activities, from simply leaving disruptive comments on online forums to provoking someone to self-harm (Williams, 2012). Trolling's potential to cause actual harm to people online is the reason many has turned their attention to the issue. In fact, there have been reported cases of suicide believed to have been provoked by offensive messages from strangers. This further underscores

the need for our youth to be informed about issues in cyber-safety and cyber-wellness, and teachers have a huge role to play in it.

The following are web resources that you can use to learn more about trolling.

- Coco, Glen. 11 May 2012. *"Why Does Nobody Know What Trolling Means?"* Accessed from Vice website at https://www.vice.com/en_us/article/ppqk78/what-trolling-means-definition-UK-newspapers.

Trolling is a recent concept born out of interactions by users of the internet. It is no surprise then that many are still confused about what a troll actually does, which can mean mislabeling someone who is simply rude or annoying. In this article, the author clarifies what exactly trolling entails, and makes a distinction between trolling and other similar online behavior. To further illustrate the idea, the author also includes snippets of actual instances online where the term trolling has been used.

- Williams, Zoe. 12 June 2012. *"What is an Internet Troll?"* Accessed from The Guardian website at <https://www.theguardian.com/technology/2012/jun/12/what-is-an-internet-troll>.

In this article, trolling on the internet is clarified by discussing it against similar activities people engage in online. Zoe Williams makes the case that identifying those who are genuine trolls is necessary to avoid getting wound up unnecessarily by debating with them or the complete opposite of shutting off those who are just rude in their behavior but happen to advance valid points.

- Moreau, Elise. 02 January 2018. *"Internet Trolling: How Do You Spot a Real Troll?"* Accessed from Lifewire website at <https://www.lifewire.com/what-is-internet-trolling-3485891>.

Spotting a real troll means being able to see through their intentions for spewing inflammatory messages online. Engaging them by adding fuel to the fire will only mean indulging trolls and putting yourself under unnecessary stress. This article will help you learn more about where trolls loiter on the internet, possible motivations of people who troll, and how to respond to them.

- SciShow. 7 July 2016. *"The Psychology of Trolling."* Accessed from SciShow channel on YouTube at <https://www.youtube.com/watch?v=5gqHTIBp6iY>.

“As denizens of the internet, most of us are familiar with the trolls. In this episode of SciShow, learn a little about how social scientists think trolls came to be, and how online communities are figuring it all out.”

- AsapSCIENCE. 17 January 2016. “*The Science of Internet Trolls.*” Accessed from AsapSCIENCE channel on YouTube at https://www.youtube.com/watch?v=6Zxy_dScjsM.

Looking at the psychological side of trolling can definitely add another dimension to your understanding of this online behavior. This video presents how psychological conditions, specifically sadism, narcissism, and psychopathy, underpin the urge of some internet users to engage in trolling.

- Rampton, John. 9 April 2015. “*10 Tips to Dealing with Trolls.*” Accessed on Forbes website at <https://www.forbes.com/sites/johnrampton/2015/04/09/10-tips-to-dealing-with-trolls/#335af4a054f4>.

As John Rampton puts it, everyone who is on the internet will inevitably have to deal with a troll. This, however, doesn’t always have to be an excruciatingly uncomfortable and frustrating thing to deal with. In his article, John shares some insightful tips on how to effectively get around this problem and restore the friendly and engaging atmosphere in your own little internet community.

Higher Order Thinking Skills

Promoting the development of higher order thinking skills (HOTS) is one of the important goals of the MT4T (Mobile Technology for Teachers) resource kit. This resource kit was developed to enhance Southeast Asian teachers' knowledge, skills, and values in using mobile technologies for personal and professional growth with a special focus on developing HOTS.

It is hoped that as a teacher, you will engage in the content of the MT4T resource kit to inspire you to continuously explore opportunities for using mobile technologies to promote active learning as part of your own personal and professional development and promote HOTS in your teaching and learning process.

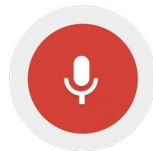
This section contains descriptions of a wide range of online resources that will help you develop and promote HOTS in yourself and your students for each of the three mobile operating systems—Android, iOS, and Windows. These resources are listed per operating system and are further organized based on thinking abilities defined

in the cognitive domain of Bloom's Taxonomy of Learning. These thinking abilities are **remembering, understanding, applying, analyzing, and creating.**

➤ **Android Applications that Promote HOTS**

The following are applications that educators can use to promote HOTS. Applications listed below are available for download on mobile devices that run on the Android operating system.

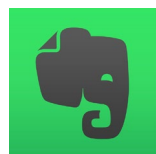
○ **Remembering**



["Google Search"](#) and ["Voice Search"](#) app for Android is the fastest, easiest way to find what you need on the web and in your Android mobile device. You can quickly search the web with your phone or tablet. You can also use your voice to search the internet using "Voice Search" app. There is no need to enter a word; you simply speak what you want to search. In addition, "Google Search" and "Voice Search" apps can show personalized results based on your location. This means that it will show results on your location first before it looks elsewhere.



["Mindomo"](#) is an online mind mapping tool for visual learning, improving creativity and problem solving. With "Mindomo," you can organize and get an overview of thoughts, ideas, links, and other information visually. In order for the brain to remember what you learn, knowledge needs to be categorized. To make the learning process easier and more fun, you can use the mind map tool to make a map of your thoughts and sort them thematically. The mind map is well suited for exploring new material, looking at connections between new and known knowledge, and organizing material for further development.



["Evernote"](#) is an easy-to-use, free app that helps you remember everything across all of the devices you use. You can stay organized, save your ideas, and improve productivity. "Evernote" lets you take notes, capture photos, create to-do lists, record voice reminders and make these notes completely searchable. Parts of the "Analyzing" domain of HOTS are organizing, linking, and validating. You can use this app to organize your files, link your documents to files, and validate your files using your mobile device. You can ask a colleague to make changes on a document in "Evernote" from a Personal Computer and you can easily validate the changes using your mobile device.

- **Understanding**



["Skitch"](#) is a free app which can help you communicate visually. With "Skitch" you can annotate images with arrows, shapes, text, and more. You can use "Skitch" to sketch something new, mark up maps, screen captures, or even a photo, and then save or share your "Skitch" annotation to help others see and understand your ideas.



["Tumblr"](#) is a blogging platform and social networking website. "Tumblr" allows users to post multimedia and other content to a short-form blog. Users can follow other users' blogs, as well as make their blogs private. Much of the app's features are accessed from the 'dashboard' interface, where the option to post content and posts of followed blogs appear.

- **Applying**



["Drawing cartoons"](#) is an animation editor that allows you to create your own movies. You don't need to draw every frame to get smooth motions. Instead, simply create key frames; intermediate frames are built automatically. You can add pictures and voices and upload the movie on YouTube or Facebook.



["Google Drive"](#) is a file storage and synchronization service provided by Google which enables user cloud storage, file sharing and collaborative editing. "Google Drive" is now the home of Google Docs, a suite of productivity applications that offers collaborative editing on documents, spreadsheets, presentations, and more. In "Bloom's Digital Taxonomy" written by Andrew Churches, he mentions that parts of the "Applying" domain of HOTS are uploading, sharing, and editing. You can use "Google Drive" to upload documents, share them with your students or colleagues, and you can also ask them to comment or edit the contents of the document you shared in "Google Drive".

- **Analyzing**



["Memento Database"](#) is a highly flexible and customizable personal database management tool. Created for anyone seeking to store various data on their Android devices, the software enables users to create custom libraries with unique sets of data fields, quickly add

new entries and share entries with friends or colleagues or export them to other systems with just a few taps. Parts of the "Analyzing" domain of HOTS are finding, structuring, and integrating. You can use this app to structure your documents into an easy-to-find and easy-to-integrate database.

- **Evaluating**



["Google Hangouts"](#) is a free video chat service from Google that enables both one-on-one chats and group chats with up to ten people at a time. While somewhat similar to Skype, "Google Hangouts" focuses more on "face-to-face-to-face" group interaction as opposed to one-on-one video chats and utilizes sophisticated technology to seamlessly switch the focus to the person currently chatting. In addition to video chatting, "Google Hangouts" users can share documents, scratchpads, images and "YouTube" videos with other users. "Google Hangouts" also offers a "Hangouts on Air" feature for broadcasting live video conversations that are accessible to anyone with a web browser. Parts of the "Evaluating" domain of HOTS are conferencing and networking. You can use "Hangouts" for voice and video conferencing, and you can also broaden your network by meeting people with the same expertise as yours in "Hangouts".



["Google+"](#) is literally Google with a plus. The "+" is the social networking it adds to all of Google's other services, including Gmail, YouTube, and Blogger. "Google+" brings popular social-media features like comments, photo- and music-sharing, videochat, etc. to your social circles. Parts of the "Evaluating" domain of HOTS are moderating and critiquing. You can use "Google+" to moderate forums and conversations among your students, and you can also critique their posts in "Google+."

- **Creating**



["Audio Photo"](#) works just like your normal camera, but it records audio a few seconds before and after the photo is taken. It adds another dimension to your photos by adding ambient sound to your photos. When you play back your audio photos, you'll hear a few seconds of your recorded audio to go along with it. Parts of the "Creating" domain of HOTS are making and mixing. You can use "Audio Photo" to make photos and by mixing sound in your photos you can make your pictures come alive. Pictures

that were taken using "Audio Photo" are a combination of picture and sound.



["Broadcastr"](#) brings the world around you to life by delivering multimedia content directly to your phone based on your location. Learn more about the architecture of a building straight from the architect. Listen to historians, comedians, food fanatics, sports fans and more as they put their stories on the map. Follow your favorite "broadcastrs" and add your own broadcasts.

➤ **iOS Applications that Promote HOTS**

The following are applications that educators can use to promote HOTS. These are available for download on devices that run on Apple mobile operating system or iOS.

- **Remembering**



["Flashcards Deluxe Lite"](#) is an easy-to-use, yet powerful flashcard app which you can use to study just about anything you want. You can create flashcards either on your computer or directly within the app. If you don't want to make your own, you can browse and download flashcards from "Quizlet.com" and "FlashcardExchange.com." Creating cards on your computer is an easy process of making a two-column list of questions and answers on a text editor or spreadsheet, copy/pasting your list onto the website, and then downloading it to your device.



["Diigo"](#) is a free social bookmarking, research, and knowledge sharing tool created to mimic the ease of taking notes while providing a network for sharing and discovering information. "Diigo" allows teachers to take personal notes and highlight text information on web pages just as they would on a piece of paper. Teachers can then bookmark and save this information for further review, while adding tags to keep everything organized. In bookmarking information, teachers can also choose to share with colleagues and friends to allow them to access the web page, view their notes and highlights, and add their own annotations. All of this information is also saved online and can be accessed by any computer or browser, including mobile devices with browsing capabilities.

- **Understanding**

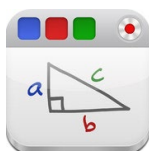


["Twitter"](#) is an online social networking and microblogging service that enables users to send and read "tweets," which are text messages limited to 140 characters. Registered users can read and post tweets, but unregistered users can only read them. Parts of the "Understanding" domain of HOTS are tweeting, tagging, and commenting. You can use "Twitter" to send tweet to your students and colleagues to remind them about assignments or paperwork or even collaborative activities. In return, your students or colleague can tag your tweet or comment on it. There is a separate e-book in MT4T on the use of Twitter to promote HOTS.



["WordPress"](#) is designed for both iPhone/iPod Touch and iPad. "WordPress" for iOS makes it easy to share photos, write posts, and edit your content. You can create and edit posts; you can also add photos and check your spelling. When you're writing and you'd like a bit more room, just rotate the screen. "WordPress" will automatically adjust to a more comfortable widescreen layout. Parts of the "Understanding" domain of HOTS are blogging and explaining. You can use "WordPress" to create blogs and explain your thoughts to your students or colleagues.

- **Applying**



["Educreations"](#) turns your iPad into a recordable whiteboard. Creating a video tutorial is as simple as touching, tapping and talking. You can explain a math formula, create an animated lesson, add commentary to your photos, diagram a sports play with voice recording, realistic digital ink, photos and text, and simple sharing through email, Facebook or Twitter. Parts of the "Applying" domain of HOTS are presenting, sharing and editing. You can use "Educreations" to present to your students, share the lessons you created and edited in "Educreations" with your colleagues and students.



["Drawing Box"](#) is recommended by schools for their students for its creativity tools and recreational features. "Drawing Box" is a suitable app to learn and practice drawing and painting. With responsive smooth pencil and brush strokes, graphical and intuitive interface, you can use it to make a quick sketch or a detailed study.

- **Analyzing**



["iCardSort"](#) is an excellent brainstorming tool that helps you to visually organize ideas quickly and easily. Whether working on a school project or trying to decide on this year's vacation destination, you simply place each of your options on a card. "iCardSort" allows you to group, order, and explore your possibilities and then share it with everyone involved when you are ready. "iCardSort" lets you manage and create as many decks as you like.



["Popplet"](#) is a tool that allows users to visualize ideas. Teachers and students can create graphic organizers, timelines, and many other forms of visual organization. "Popplet's" strength as a collaborative brainstorming tool, however, should not lead teachers to overlook its usefulness as an effective presentation tool.

- **Evaluating**



["Edmodo"](#) makes it easy for teachers, students, and parents to stay connected and share information. You can use your iOS mobile device to send notes, submit assignments, post replies, and check messages and upcoming events while away from the classroom. Teachers can post messages, keep tabs on and grade recent assignment submissions. Students can view and turn in assignments and check their latest grades. Class discussions can be conducted securely, both during and outside of school hours. Edmodo is explained further in the MT4T e-book on ["Edmodo for Teachers"](#).



["Viber"](#) is a free service that lets you send texts and share both photos and videos with friends and family. You can also make high-quality VoIP calls (phone calls using internet) with your existing mobile number. "Viber" automatically syncs with your contacts and knows which of your friends have "Viber," making it easy to stay in touch. With "Viber," you can message anyone for free, but you can only make free calls to other "Viber" users. Users can also send or take photos and videos from within the app as well as share their current location. "Viber" supports group chats with up to 40 participants. Parts of the "Evaluating" domain of HOTS are monitoring, posting and moderating. You can use "Viber" to message your students to remind them about their homework or upcoming quiz. You can also post the news of the week in "Viber" group chat and ask the students to

comment on the news and then you moderate the comments of the students whether appropriate or not in an educational setting.

- **Creating**



["Animoto Video Maker"](#) can help you turn your photos into stunning, professional-quality videos, complete with music and text. You can choose your photos, video clips, music, and video style. Within minutes, you'll have an amazing video slideshow you can save and easily share with everyone.



["FlipBook Lite"](#) easily makes your pictures come to life and share them with your friends. "FlipBook Lite" has everything you need to get started animating, from an eraser to onion skinning (which lets you see a faint image of the previous and next frames) to layered drawing. Load images from your photo library, including images taken with your iPhone's camera, and draw on top of them. If you make a mistake, just touch "Undo." Touch "Play" when you're ready to see how your movie looks. Share your movie by uploading it to flipbook.tv so that everyone can see it.

➤ **Windows Mobile Applications that Promote HOTS**

The following are applications that educators can use to promote HOTS. Applications listed below are available for download on devices that run on Windows mobile operating system.

- **Remembering**



["Bing"](#) is a search engine that helps you find what you're looking for quickly and easily. The application has a new look and feel that make searching the web more instinctive. One of the features of "Bing" is it will constantly evolve to give even better results, through innovative features like instant answers to your questions, image search, voice search, categorized search, and best match.

- **Understanding**



["Instagram"](#) is an online photo-sharing, video-sharing and social networking service that enables its users to take pictures and videos and share them on a variety of social networking services, such as Facebook or Twitter. If you're using Facebook or Twitter, you may have come across a

photo that looks like it had a very elegant vintage appearance applied to it. Chances are it was uploaded to Facebook or Twitter via "Instagram." On Instagram, you can follow other users' photo streams as they post them and you can be followed back by those users (or other users) as well. Parts of the "Understanding" domain of Higher Order Thinking Skills (HOTS) are tweeting, tagging, and commenting. You can use "Instagram" to compliment Twitter by taking photos or videos from "Instagram" and sharing them on Twitter. You can also post pictures and videos on "Instagram" so that your students, colleagues, and friends can tag and comment on them.

- **Applying**



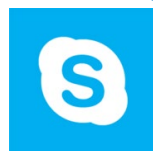
["OneDrive,"](#) formerly called SkyDrive, is a virtual place to store your files so you can access them from any device. Windows Phone has built-in access to "OneDrive" from the Office and Pictures hubs. It can also automatically upload pictures that you take to "OneDrive" for easy access. In "Bloom's Digital Taxonomy," written by Andrew Churches, he mentioned that parts of the "Applying" domain of Higher Order Thinking Skills (HOTS) are uploading, sharing, and editing. You can use "OneDrive" to upload documents, share these with your students or colleagues, and you can also ask them to comment or edit the contents of the document you shared in "OneDrive."

- **Analyzing**



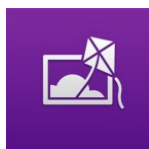
["Smartboard Calculator"](#) is the blackboard that calculates everything for you: algebra, geometry, trigonometry, and statistics problems as well as problems with units of time, distance, velocity, weight, temperature, energy, pressure, and more.

- **Evaluating**



Skype has a new product called ["Skype for Education."](#) This new product enhances collaboration between educators and classroom of the world. It offers tools that let you create lessons and let you share them with the rest of the members all over the world. Make free Skype to Skype video and voice calls as well as send instant messages to friends and family around the world.

- **Creating**



[“Cinemagraph”](#) is a blend of photo and movie-like animation, creating pictures that seem almost alive. Take a photo, in landscape or portrait form, and helpful on-screen assistance lets you easily select the animated area of your picture to create your very own “Cinemagraph.”

For additional readings on the promotion of higher order thinking skills and values, refer to the MT4T e-books on Facebook, Twitter, and LinkedIn. Each has a section that discusses how teachers can use social media platforms to promote HOTS.

3.2 Tools

Web-based tools for teachers continue to flourish, giving teachers more tools to use to facilitate 21st century teaching and learning. However, it can be hard to determine which resources are worth spending time exploring. This section on teachers’ web tools has various collections of web services that teachers and students can use for educational purposes. Online tools and resources have made it easier for teachers to instruct students; students for their part are able to collaborate with their teachers and fellow students.

Audio Tools

One of the important skills in digital literacy is being able to record and edit audio. There are several Audio Tools available on the internet today that can allow you to work around with audio tracks and customize them the way you want. Because of the diverse ways Audio Tools are used in the classroom, there are a number of very different applications where audio can be used as a teaching tool.

The following are some more links that will introduce you to the use of audio tools in your teaching and learning activities.

- Grantham, Nick. 17 January 2012. *“Audio Becomes a Powerful Teaching Tool with SoundCloud.”* Accessed from Fractus Learning website at <https://www.fractuslearning.com/2012/01/17/audio-teaching-tool-soundcloud/>.

This post features a teaching tool that can bring a new level of engagement in your class, the SoundCloud, which is a popular sharing platform for sharing audio developed by Alexander Ljung and Eric Wahlforss. Read the post to learn more about this exciting app.

- Kharbach, Med. December 2012. *"Teacher's Guide on the Use of Podcasting in Education."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/12/teachers-guide-on-use-of-podcasting-in.html>.

This post talks about podcasting, which is an online audio file delivered via an RSS feed. Through podcasts, listeners can watch or listen to audio files anytime, anywhere from various mobile devices. This post further shares how podcasts can be used for educational purposes and suggests tools that can be used to create podcasts.

- Waters, Sue. 26 May 2009. *"What Everybody Ought to Know about Podcasting: Part I."* Accessed from The EduBlogger blog site at <http://www.theedublogger.com/2009/05/26/what-everybody-ought-to-know-about-podcasting-part-i/>.

This is a two-part series of posts that talks about podcasting how-to's. This first part gives a general understanding of what podcast means, while the second post explains how podcasts can be hosted on a blog, and how to create audio and video podcasts.

- Waters, Sue. 29 May 2009. *"What Everybody Ought to Know about Podcasting: Part II."* Accessed from The EduBlogger blog site at <http://www.theedublogger.com/2009/05/29/what-everybody-ought-to-know-about-podcasting-part-ii/>.

This is the second part of a series of posts that talks about podcasting how-to's. The first part gives a general understanding of what podcast means, while this second post explains how podcasts can be hosted on a blog, and how to create audio and video podcasts.

- McElhearn, Kirk. 11 July 2005. *"Beginner's guide to podcast creation."* Accessed from iLounge website at <http://www.ilounge.com/index.php/articles/comments/beginners-guide-to-podcast-creation/>.

"Creating podcasts isn't simple, but it's not too hard, either. You'll need a small combination of hardware and software in order to create your own recordings, and in this iPod 101 tutorial on 'Beginner's Guide to Podcast Creation,' we'll walk through the different elements you need to create a simple podcast, from computer and microphone through to the finished product."

- Sanders, Jessica. 15 June 2015. *"10 Educational Podcast Channels for Teachers."* Accessed from Whooo's Reading The Blog website at

<http://blog.whoosreading.org/10-educational-podcast-channels-for-teachers/>.

This blog lists down free-access, educational podcast channels for teachers. Whether teachers are looking to expand their professional development or learn how to integrate technology in their classrooms, they are sure to find hundreds of podcasts to choose from.

- Kharbach, Med. 10 May 2012. *"10 Free Text-to-Speech Tools for Educators."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/05/10-free-text-to-speech-tools-for.html>.

This post introduces some exciting tools that you can use to "easily select any part of a text and hear it in the voice and accent" you want. "These free tools can be very helpful for language teachers and for students, too."

Bookmarking Tools

A *bookmark* is a Uniform Resource Identifier (URI) that is stored for later retrieval in any of various storage formats. All modern web browsers have bookmarking features ([Wikipedia](#)). Here are web links to some of the best bookmarking tools on the web today.

- Moreau, Elise. (N.D.) *"10 Great Bookmarking Tools for the Web."* Accessed from About Technology website at <http://webtrends.about.com/od/pro5/tp/bookmarking-tools-bookmarklets.htm>.

This post presents ten of the best bookmarking tools available on the web. Among these are Instapaper, Xmarks, Pocket, Readability, Stashmarks, Find my Bookmarks, Pinterest, Chill, and Delicious. Read on to learn more about each tool.

- Kharbach, Med. December 2012. *"Top 10 Bookmarking Websites for Teachers."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/12/top-10-bookmarking-websites-for-teachers.html>.

This post presents ten of the best social bookmarking websites as reviewed by the author.

- Staff Writers of OEDb.org. 15 March 2013. *"101 Web 2.0 Teaching Tools."* Accessed from Open Education Database website at <http://oedb.org/ilibrarian/101-web-20-teaching-tools/>.

This site presents online tools and resources that can help you stay organized and generally make your online experience easier. The tools are

arranged per category in alphabetical order, and the links to each tool are also listed alphabetically within those categories.

- *"Social bookmarks."* Accessed from WebTools4U2Use at <http://webtools4u2use.wikispaces.com/Social+Bookmarks>.

This post contains a short video that explains what social bookmarking is. It also suggests uses of social bookmarking, five social bookmarking tools, tutorials on getting started with bookmarking website, and a lot more.

- *"Social Bookmarking Tools."* Accessed from Teaching Hacks at http://www.teachinghacks.com/wiki3/index.php?title=Social_bookmarking_tools.

This site provides an explanation of what social bookmarking is, how it works, and its features. It also has a guide on how to create your own social bookmarking site and on how social bookmarking can be put to good use in education. Links to several social bookmarking sites focused on education are also given.

Brainstorming Tools

Brainstorming is a [group or individual creativity technique](#) by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its members. ([Wikipedia](#))

The following resources intend to provide you with a deeper understanding of brainstorming and give you ideas on how you can make use of it effectively.

- *"Brainstorming."* Accessed from Mind Tools website at <http://www.mindtools.com/brainstm.html>.

This article gives you the answers to the following questions: What is brainstorming? Why use brainstorming? How do you get the most out of brainstorming?

- *"Brainstorming Process."* Accessed from Businessballs website at <http://www.businessballs.com/brainstorming.htm>.

Brainstorming with a group of people is a powerful technique. This post not only talks about group brainstorming, but also about personal brainstorming, and suggests links to other tools and models that can be used in the brainstorming process.

- *"Stormboard: Online Brainstorming and Collaboration."* Accessed at <https://www.stormboard.com/>.

Stormboard is an online platform where you can do real time brainstorming and collaboration, whether in the same room or around the world.

- Wallen, Jack. 19 February 2014. *"Five free tools to help brainstorm solutions and spark innovation."* Accessed from TechRepublic website at <http://www.techrepublic.com/blog/five-apps/five-free-tools-to-help-brainstorm-solutions-and-spark-innovation/>.

"Visualize project requirements, sketch out a new org structure, identify workflow bottlenecks, or discover creative solutions to stubborn problems—all with the help of these free mind-mapping tools."

Collaborative Tools

With the development of web technologies, a wide range of educational tools has emerged. Collaborative tools are one of the examples. Using collaborative tools can help teachers to have online and real-time discussions with students, help them in their projects and assignments, guide their learning, and at the same time moderate discussions.

Ephraim Freed, in an [article](#) posted in the Thought Framer blog, gave a simple definition of what collaboration means. This refers to "two or more people working together towards shared goals." The following resources offer collaboration tools that you and your students can use in the classroom.

- Pappas, Christopher. 18 October 2013. *"The 5 best Free Collaboration Tools for Teachers."* Accessed from eLearning Industry website at <https://elearningindustry.com/the-5-best-free-collaboration-tools-for-teachers>.

This post not only suggests five great collaboration tools, but also suggests ways to use the tools. "Utilize these (tools) to collaborate effectively with your colleagues or to encourage your students to come together and create something amazing."

- Sabo, Rob. 20 November 2013. *"Digital Project-Based Learning: 7 Tools for Student Collaboration."* Accessed from te@chthought blog site at <http://www.teachthought.com/technology/digital-project-based-learning-7-tools-student-collaboration/>.

"Choosing the right tools for small group collaboration is crucial for facilitating easy communication between small groups of students and teachers — no one benefits from a clunky platform that frustrates students and inhibits smooth peer-to-peer communications." Check out the seven collaboration tools and share these with your students.

- Mccrea, Bridget. 05 June 2013. *"8 Free Collaboration Tools for Educators."* Accessed from Campus Technology website at <http://campustechnology.com/articles/2013/06/05/8-free-collaboration-tools-for-educators.aspx>.

Here's another list of free apps and tools that you can use to get your students working and learning together in and out of the classroom. On top of this list is Flowboard, which is a touch-publishing mobile app that lets students create, publish, and share their work and ideas using iPads.

- *"Collaborative Tools."* Accessed from Web 2.0: Cool Tools for Schools website at <http://cooltoolsforschools.wikispaces.com/Collaborative+Tools>.

This provides a list of email and collaboration tools for educators and students at all levels. Use one of these collaborative tools to create and upload course content for real-time and anytime collaborative learning.

- Purdy, Kevin. (N.D.) *"Top 10 Web Collaboration Tools (That Aren't Google Wave)."* Accessed from Life Hacker website at <http://lifehacker.com/5373339/top-10-web-collaboration-tools-that-arent-google-wave>.

This post recommends some of the best free collaboration tools available on the web. This includes Cc:Betty, MediaWiki, TimeBridge, Google Groups, TextFlow, DimDim, MindMeister, present.io, Campfire, and Zoho. Learn more about each of these tools and decide which one best suits your needs.

- Posted on 11 June 2014. *"The 20 best tools for online collaboration."* Accessed from Creative Bloq at <http://www.creativebloq.com/design/online-collaboration-tools-912855>.

This post gathers some of the best available online tools. While some of the tools are created specifically for designers, there are still some in the list that can serve as a concept crafting whiteboard and some that include an element of project management.

- Kharbach, Med. August 2012. *"The Top 27 Free Tools to Collaborate, Hold Discussions, and Backchannel with Students."* Accessed from Educational Technology and Mobile Learning website at <http://www.educators technology.com/2012/08/the-top-27-free-tools-to-collaborate.html>.

This site suggests free online tools that you can use to do collaborative work with your colleagues or with your students. One of the suggested tools is ChannelMe which allows users to browse a particular website simultaneously. Using ChannelMe, users are able to review the same content with friends in real time and even chat with each other.

Collaborative Whiteboards

A collaborative whiteboard is a web-based whiteboard that makes collaborative work to take place among people from their computer, tablet or smart phones. This section offers resources for collaborative whiteboards.

- Kharbach, Med. 03 March 2013. *"3 Excellent Real Time Collaborative Whiteboard Tools for Teachers."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/03/3-excellent-real-time-collaborative.html>.

The author recommends these collaborative whiteboard tools that are web-based and therefore do not require software installation and you can access them anywhere with internet connection.

- Kharbach, Med. 07 November 2012. *"7 Awesome Collaborative Whiteboard Tools for Teachers."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/11/7-awesome-collaborative-whiteboard.html>.

Collaborative learning is one of the much needed skills in 21st century education. One of the collaborative whiteboards in the list is Groupboard, which is a free online shared whiteboard and chat app that works on any platform including iPhone, iPad and Android with no plugins required.

Creativity Tools

This section offers resources that you can use to boost your creativity and your students'.

- *"Creativity Techniques – Start Here."* Accessed from Mind Tools website at http://www.mindtools.com/pages/article/newCT_00.htm.

"The tools in this section can help you become more creative. (These) are designed to help you devise creative and imaginative solutions to problems and find opportunities that you might otherwise miss."

- Boss, Suzie. 20 August 2012. *"How to Turn Your Classroom into an Idea Factory."* Accessed from Mind Shift website at <http://blogs.kqed.org/mindshift/2012/08/how-to-turn-your-classroom-into-an-idea-factory/>.

This article provides tips for turning K-12 classrooms into innovation spaces. Among the tips is to welcome authentic questions, encourage effective teamwork, build empathy, uncover passion, know when to say 'no,' and encourage breakthroughs. Read the full article to understand these suggestions better.

- Segev, Elad. 09 May 2013. "When there is a correct answer: An Exercise in creative thinking." Accessed from YouTube at http://www.youtube.com/watch?v=9TskeE43Q1M&feature=player_embedded.

"A correct answer kills the creativity." Find out from this two-minute video what happens when third grade students think there is actually a correct answer to a question.

- McNerney, Sam. 31 May 2014. "What Motivates Creativity?" Accessed from Big Think blog site at <http://bigthink.com/insights-of-genius/what-motivates-creativity>.

This article points out that the role of intrinsic and extrinsic motivators in influencing students' drive to learn should be considered in designing pedagogical strategies.

- Lifted from the February 2013 issue of Educational Leadership, "Creativity Now!" Accessed from ASCD website at http://www.ascd.org/ASCD/pdf/journals/ed_lead/el201302_takeaways.pdf.

This is an attractive one-page PDF file that presents collective wisdoms of eight authors regarding creativity as published in the journal, *Educational Leadership*.

- McClure, Laura. 8 May 2015. "10 ways to teach creativity in the classroom." Accessed from TED-Ed Blog website at <https://blog.ed.ted.com/2015/05/08/10-ways-to-teach-creativity-in-the-classroom/>.

Apart from providing an insightful list of ways to teach creativity in the classroom, the author, Laura McClure, also shared online resources and tools to help teachers try out her tips.

Digital Scrapbook Tools

A scrapbook is simply a decorated photo album that also preserves the stories behind the photos (called journaling). It can also hold memorabilia (tickets, certificates, letters, etc.). You might have a family album as well as smaller theme albums for vacations or home improvement. ([Paper Wishes](#))

A digital scrapbook allows you to create a digital book or poster that can contain annotations, video, audio and photographs. This is primarily a visual tool which can be an alternative to PowerPoint slide presentation. Digital scrapbook can also contain a wealth of embedded information for the audience to explore at their own leisure or through a guided presentation on an Interactive Whiteboard. ([Ed Galaxy](#))

Tap on this [link](#) to see an example of a digital scrapbook.

- Cummins, Kevin. 13 January 2010. *"The Ultimate Guide to Digital Scrapbooking for Educators."* Accessed from Ed Galaxy website at <http://www.edgalaxy.com/journal/2010/1/13/the-ultimate-guide-to-digital-scrapbooking-for-educators.html>.

Learn more about what digital scrapbooking is about, its uses in the classroom, and resources to generate a digital scrapbook with links to instructional videos.

- Aune, Sean. *"10 Resources for Online Scrapbooking."* Accessed from Mashable Asia website at <http://mashable.com/2008/09/16/online-scrapbooking/#yDZ5pRFqisqx>.

The smartphones and tablets these days have made picture-taking easier and more fun. Instead of having these pictures remain in your phone's memory drive, you can opt to have these printed on a book, or, try the online scrapbook applications offered in this article.

- *"Best Scrapbooking Sites and Digital Scrapbooking Websites."* Accessed from Best Scrapbooking Sites at <http://www.bestscrapbookingsites.com/>.

This site evaluates and rates scrapbooking sites available on the web based on actual traffic and popularity. Browse through the list and check out free downloads and giveaways.

- McDonough, Michele. 11 December 2009. *"List of the Top 5 Digital Scrapbooking Software Applications."* Accessed from Bright Hub website at <http://www.brighthub.com/multimedia/photography/articles/58947.aspx>.

This recommends software applications that you can avail of in case you decide to embark on a wide range of digital scrapbooking projects. Each application was rated based on the review of Bright Hub.

- Kharbach, Med. July 2012. *"A Great tool to easily create digital scrapbooks for your classroom."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/07/great-tool-to-easily-create-digital.html>.

This post presents Beeclip Edu, which the author recommends as a great tool to use with students for scrapbooking projects. Beeclip Edu allows collaborative work among students, as they can comment on each other's work and exchange ideas. Added to these, Beeclip Edu has a student-friendly interface which makes learning how to use it a lot easier.

Digital Storytelling Tools

Digital stories allow students to take a linear series of events and turn them into a multidimensional experience. It encourages them to communicate, collaborate, and research as well as to infuse media into the process. A plethora of tools exists to create these projects—both in terms of software as well as hardware—and all of them enable students to gain a deeper understanding of history as they explore the most effective way to retell it. ([Ed Tech Teacher](#))

- *"Digital Storytelling in the Classroom."* Accessed from Ed Tech Teacher at <http://edtechteacher.org/tools/multimedia/digital-storytelling/>.

This post gives examples of digital storytelling and media resources, as well as suggests ways to integrate digital storytelling.

- *"Create Digital Stories."* Accessed from Ed Tech Teacher website at <http://edtechteacher.org/apps/stories/>.

This post lists recommended digital storytelling apps for mobile devices. An overview of all these apps is found at the bottom of the post.

- Kharbach, Med. June 2012. *"A List of the Best Free Digital Storytelling Tools for Teachers."* Accessed from Educational Technology and Mobile Learning at <http://www.educatorstechnology.com/2012/06/list-of-best-free-digital-storytelling.html>.

This post recommends tools that can be used to generate digital stories for educational purposes. It also has a link to another post that suggests tools for developing creative writing among students.

- *"Story Starter – Tell a story in 7 steps."* Accessed from Story Jumper website at <http://www.storyjumper.com/main/starter>.

This page gives a step-by-step guide on how to tell a story using the Story Starter tool. This tool is useful for teaching students the creative writing process. There are links on the side of the page to guide the author and teachers in the process. A downloadable worksheet is also provided at the bottom of the post to help students get started in their digital storytelling journey.

- Schrock, Kathy. (N.D.) *"Digital Storytelling."* Accessed from Kathy Schrock's Guide to Everything at <http://www.schrockguide.net/digital-storytelling.html>.

This page offers a comprehensive list of resources to support the use of digital storytelling for teaching and learning. There are presentation

resources; classroom ideas and practices; assessment and research; samples of digital storytelling books; tools for planning, producing, creating/hosting digital stories; research on digital storytelling; and video clips on the topic.

- *"Educational Uses of Digital Storytelling."* Accessed from Digital Storytelling website, run by the University of Houston, at <http://digitalstorytelling.coe.uh.edu/page.cfm?id=27&cid=27&sublinkd=29>.

This website is devoted to digital storytelling. It has different sections that tackle (1) the definition of digital storytelling; (2) its educational uses; (3) the seven elements of digital storytelling; (4) a discussion on the 21st century skills as it relates to digital storytelling; and (5) web 2.0 resources on digital storytelling and related technology tools and techniques.

- *"The Literacy Sched."* Accessed at <http://www.literacyshed.com/>.

This website provides a huge variety of teaching resources, including teaching ideas on how to use stories in the classroom.

- *"Pixar's 22 Rules of Storytelling."* Accessed from Tumblr at http://25.media.tumblr.com/tumblr_m5ohvjXZpF1qbriah01_1280.jpg.

This is an image file that enumerates the rules when telling stories. The rules are stated in short sentences and are direct to the point.

The succeeding resources list down some storytelling apps that are available for download.

- Kharbach, Med. 05 July 2013. *"5 Good Digital Storytelling Apps for Android."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/07/5-good-digital-storytelling-apps-for.html>.

This is a collection of digital storytelling apps that you can download and install in your Android device. The app "Talking Tom and Ben" have already become famous TV news personalities. You can talk to the dog Ben and the cat Tom and record funny conversations.

- Scheffer, Jenn. 25 September 2014. *"8 Digital Storytelling Apps for the iPad."* Accessed from Burlington High School Help Desk at <http://bhs.helpdesk.com/2014/09/25/8-digital-storytelling-apps-for-the-ipad/>.

"As the term indicates, digital storytelling is essentially telling a story through the use of digital tools. The added bonus of digital storytelling is that it's fun! While it's not highlighted on the list, the video at the bottom of this post was created by app smashing Tellagami and iMovie."

- *"Lumia Storyteller."* Accessed from Windows Phone at <http://www.windowsphone.com/en-us/store/app/lumia-storyteller/b0940143-e67e-4f74-8f68-16b7ad872dd2>.

"Lumia Storyteller automatically groups all your photos, videos and cinemagraphs into individual events called stories. In your timeline you can browse your stories and modify them, then view them as slideshows or share them with friends."

Drawing Tools

Drawing is an important skill in education. Some studies have shown that painting and drawing can improve complex reasoning, writing, and reading readiness, partly because the critical and creative faculties required to generate and appreciate drawing transfer cognitively to future learning experiences, and partly because drawing and art in general make learning fun. ([Educators Technology website](#))

- Kharbach, Med. 15 July 2012. *"15 Free Awesome Drawing and Painting Tools for Teachers and Students."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/07/15-free-awesome-drawing-and-painting.html>.

This post recommends free drawing and painting tools that are suitable even for mobile devices. If your device has a stylus, then some of the apps in the list are even easier to use, though "a steady finger and a good imagination" are all that's required for most of the apps.

- Henry, Alan. 27 May 2014. *"Five Best Tablet Drawing Apps."* Accessed from Life Hacker website at <http://lifehacker.com/5913489/five-best-tablet-drawing-apps>.

This post suggests five great drawing apps that are best for tablet devices running on either iOS or Android operating systems. The list was generated based on a poll survey among active users of tablet drawing apps, and topping the list of most popular app is Sketchbook Express, which has both an iOS and an Android free versions.

- Byrne, Richard. 24 November 2011. *"11 Free Online Drawing Tools."* Accessed from Free Technology for Teachers website at http://www.freetech4teachers.com/2011/11/11-free-online-drawing-tools.html#.VBlcWRZdC_1.

This post offers five drawing tools that you can consider if you and your class need free and easy-to-use drawing tools.

- Posted on 22 July 2010. *"Top 15 Online Tools for Drawing and Sketching."* Accessed from Smashing Apps website at <http://www.smashingapps.com/2010/07/22/top-15-online-tools-for-drawing-and-sketching.html>.

This post contains a list of online tools for sketching and drawing. Try out each one and see which service best suits your tastes. Don't forget to share and recommend to your students.

Infographics

[Merriam-Webster](#) defines an infographic as "a chart, diagram, or illustration (as in a book or magazine, or on a website) that uses graphic elements to present information in a visually striking way." The following resources are intended to give you a better understanding of infographics, its many uses, and interesting samples, among others.

- Kharbach, Med. February 2013. *"Ways to Teach Using Infographics."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/02/ways-to-teach-using-infographics.html>.

This short post shares a short video on how infographics can be used as creative assessments. It defines already what you can expect to see in the video. Apart from the video, Med Kharbach, the blog owner of Educational Technology and Mobile Learning, also provided a page where you can find links to the most popular infographics there are and another page where you can access some cool apps to help you create your own infographics for free.

- Schrock, Kathy. Web page created on 10 July 2011 and updated on 28 August 2014. *"Infographics as an assessment."* Accessed from Kathy Schrock's Guide to Everything blog at <http://www.schrockguide.net/infographics-as-an-assessment.html>.

This web page shares a wealth of resources about infographics. It's like a one-stop shop on infographics as it shares links to (1) books on infographics; (2) creating an infographic; (3) general overview of infographics; (4) infographic samples; (5) online tutorials on creating infographics; (6) literacies and standards through infographics; (7) using infographics in the classroom; and (8) student handouts for steps in creating infographics; (9) other cool, useful information links; (10) sources of data sets for infographics; (11) infographics for advocacy and promotion; and many other infographic-related topics (education infographic, computer infographic, iPad infographic, Twitter infographic, etc.).

Below is one of the resources on literacies and standards which the website owner herself, Kathy Schrock, had developed. Tap on the image for a bigger view or to download the file into your device.

INFOGRAPHIC RUBRIC ©2012. KATHY SCHROCK (KATHY@KATHYSCHROCK.NET)
REPRODUCIBLE FOR CLASSROOM USE. ALL OTHER USES, PLEASE ASK PERMISSION.

COMPONENTS	EXCEEDS EXPECTATIONS	MEETS EXPECTATIONS	NEEDS MORE WORK
TOPIC	The topic of the infographic is specific in nature and is intended to inform or convince the viewer.	The topic of the infographic may be a bit too broad to allow the viewer to understand the main points.	The topic of the infographic is hard to ascertain and needs to be made more specific.
TYPE	The type of infographic chosen (i.e. timeline, informational, etc.) highly supports the content being presented.	The type of infographic chosen represents the content being chosen but another type may lead to more clarity for the viewer.	The type of infographic chosen does not convey the information well or support the content being presented.
OBJECTS	The objects included in the infographic are repeated to support various data points and to make it easier for the viewer to understand the infographic.	Some objects included in the infographic are repeated but the infographic did not seem to include enough repeated elements to make it understandable.	Too many different types of objects are used in the infographic and that makes it hard for the viewer to understand the content.
DATA VISUALIZATIONS	The data visualization formats chosen make the data presented easy for the viewer to understand the information.	The data visualization formats chosen showcase the data, but some may make it difficult for the viewer to understand the points.	Other data visualization formats should be chosen to best showcase the data presentation for the viewer.
FONTS	The infographic includes an appropriate font to both complement the content and make the text readable.	The infographic includes multiple fonts and/or the fonts do not seem related to the infographics topic.	The font(s) used in the infographic make the text almost unreadable.

- S. Natalija. 23 October 2013. "Infographics in education." Accessed from Piktochart.com at <http://piktochart.com/infographics-in-education/>.

Learn about what teachers have to say about their experiences in using infographics in the classroom and see samples of the infographics these teachers have created.

- "Infographics." Accessed at <http://infographicsineducation.wikispaces.com>.

If you would like to know more about infographics, this website offers information about how you can search for infographics; the tools for creating infographics, like adding data, facts, and graphics; ideas for creating infographics with students; and tutorials for enhancing your infographics.

Below are samples of infographics related to 21st century teaching.

- Infographic created by InternationalQualification.com and shared by Santosh, Bhaskar K. 10 September 2013. "Steps into 21st Century Classroom." Accessed from EdTechReview at <http://edtechreview.in/trends-insights/trends/576-21st-century-classroom-infographic>.

This infographic, which first appeared in visual.ly website, shows data and statistics of all educational technologies that are introduced into the 21st century classroom.

- Infographic created by OpenColleges. "*Components of a 21st Century Classroom.*" Accessed from OpenColleges website at https://www.opencolleges.edu.au/infographic/21st_century_classroom.html.

This infographic created by OpenColleges lays down some of the key advancements in educational technology, particularly in the classroom. It also enumerates reasons as to why teachers should integrate technology in the learning process.

- MacMeekin, Mia. 01 April 2014. "*Morphing into a 21st Century Teacher.*" Accessed from An Ethical Island blog site at <http://anethicalisland.wordpress.com/2013/04/01/morphing-into-a-21st-century-teacher-updated/>.

The [Edutech for Teachers blog site](#) recommends this infographic by Mia MacMeekin as a useful guide for teachers to transform their classrooms into "a place where learning is meaningful, relevant and real-world." It contains over two dozen ways to engage students in the learning process.

- Infographic shared by eLearning Infographics. 19 March 2014. "*A Day in the Life of a 21st Century Connected Teacher Infographic.*" Accessed from eLearning Infographics at <http://elearninginfographics.com/a-day-in-the-life-of-a-21st-century-connected-teacher-infographic/>.

As defined in the post, a connected teacher refers to an educator who is involved in collective learning, sharing and exploration of what learning is for themselves and their students. The featured infographic gives you an insight into the life of a typical 21st century educator. The fifth-grade teacher, Susan, makes full use of available technologies and social media for her class, and for professional development, as well.

- Wahlert, Tina. "*Educational Infographics.*" Accessed from Pinterest at <http://www.pinterest.com/twahlert/educational-infographics/>.

This page contains a collection of infographics pinned (or bookmarked online) by Tina Wahlert, which offers two things for you: (1) teaches you how to create infographics, and (2) shows you samples of educational infographics. The pinned infographic on "How to Create an Awesome Infographic" gives an easy to follow step-by-step guide to help you create your very first infographic. Discover other infographics that will interest you from more than 200 pins in this post.

- Nicholas, Rebecca. 07 January 2014. *"Infographics: A 21st Century Skills."* Accessed from "Mind's Wonderings: Education and Technology" blog site at <http://mindswonderings.blogspot.com/2013/01/infographics-21st-century-skill.html>.

This blog post shares the thoughts of a secondary geography teacher on how infographics can indeed be an important tool in a 21st century classroom. Rebecca Nicholas, blog owner of Mind's Wonderings, did research on the importance of infographics. With each article she came across with online, she became more convinced of the role of infographics in promoting 21st century skills, particularly HOTS.

- Holsheimer, Michiel. *"46 Tools to Make Infographics in the Classroom."* Accessed from Teach Thought website at <https://www.teachthought.com/technology/46-tools-to-make-infographics-in-the-classroom/%20%20>.

This post recommends tools that you can use to generate your own infographics. Each recommended tool comes with a brief description to help you decide which tool will fit your needs best.

Below are sample infographics on random topics.

- Infographic by WordStream. *"The Google Graveyard: A Resting Place for Great Ideas."* Accessed from [WordStream](http://www.wordstream.com/articles/retired-google-projects) website at <http://www.wordstream.com/articles/retired-google-projects>.

This infographic created by WordStream lists down through an interesting infographic all Google innovations that did not quite succeed. It likens the discontinued Google products and services to dead people that were buried in a graveyard. The link to the [full article](#) on the topic is also provided in the page.

- Kharbach, Med. 23 February 2014. *"Flipped Classroom Visually Explained for Teachers."* Accessed from Educators Technology and Mobile Learning website at <http://www.educatorstechnology.com/2014/02/flipped-classroom-visually-explained.html>.

This page has an infographic on flipped classroom that should help you better understand what the concept is about.

- *"5 Degrees to Becoming a Common Core Ninja."* Accessed from visual.ly website at <https://visual.ly/community/infographic/other/5-degrees-becoming-common-core-ninja-infographic>.

This is an infographic depicting ninjas as models that should be followed by educators because of five principles that ninjas apply in their life: learn,

reflect, leap, collaborate, and execute. One enviable trait of ninjas is that they never attack a problem alone—they collaborate. It advises educators to join one of the many collaborative communities to have a common framework with the CCSS.

- MacMeekin, Mia. June 2013. *"Rethinking Innovation: 27 Ways to help your students be innovative."* Accessed from An Ethical Island blog site at <http://anethicalisland.files.wordpress.com/2013/06/innovation.png>.

This article describes 27 innovative ways to help students to think about innovation. There are also some inspiring quotes about innovation in the classroom.

- MacMeekin, Mia. *"27 More Ways to Increase Participation."* Accessed from Teach Thought website at <http://www.teachthought.com/wp-content/uploads/2013/06/27-ways-to-increase-engagement-in-learning.jpg>.

This infographic shows 27 more ways to engage students in learning. In this infographic you will find different ways to use data for learning, formative assessment, mobile learning, and flipped classroom.

- Written by staff writers of OnlineUniversities.com. 13 February 2012. *'The Digital Classroom.'* Accessed from OnlineUniversities.com at <http://www.onlineuniversities.com/digital-classroom>.

This infographic by staff writers of the website Online Universities.com, shows five important elements of a 21st century classroom. The infographic contains tools and technologies in a digital classroom.

- Infographic by Edudemic.com shared on Pinterest by Anka Bratu. May 2013. *"The Risks of Posting in Social Networks."* Accessed from Pinterest at <http://www.pinterest.com/pin/256564509994608499/>.

This infographic explains the risk of posting too much information online.

- Infographic by Internet Innovation Alliance. *"Not Just Generation Text."* Accessed from visual.ly at <http://visual.ly/not-just-generation-text>.

This is another infographic by Mia MacMeekin that shows how students are using the power of internet in their day-to-day life, not just for surfing, but also for doing educational research.

- MacMeekin, Mia. 12 April 2013. "27 Things Your Teacher Librarian Does." Accessed from An Ethical Island blog site at <http://anethicalisland.files.wordpress.com/2013/04/teacherlibrarian.png>.

This infographic contains quotes on 27 things teacher librarians can do to encourage students to study their lessons.

- Infographic by OnlineColleges.net. Shared by Lena Long. 18 May 2013. "Music and Learning." Accessed from Daily Infographic blog site at <http://dailyinfographic.com/musics-effect-on-learning-infographic>.

This post includes an infographic that demonstrates how music affects learning. Quoting from the infographic, "Music impacts us in powerful ways. It can evoke strong emotions and make us want to tap our fingers and feet, and even help with learning and memory."

- Infographic shared by Lacy, Micaela. May 2013. "How Does the Act of Writing Affect Your Brain?" Accessed from Daily Infographic blog site at <http://www.dailyinfographic.com/how-does-writing-affect-your-brain-infographic>.

This infographic shows how writing affects the brain in many ways. It explains why writing things down helps to remember; why telling stories is more memorable than being presented with bare facts; and why clichés in writing should be avoided.

- Infographic shared by the Interactive Schools website. "A new breed of social media personalities." Accessed from Interactive Schools website at <http://interactive-schools.co.uk/library/client/images/blog-images/infographics/social-media-personalities.jpg>.

This infographic shows a classification of distinct breeds of social media personalities, according to extensive studies by conversation experts.

- Infographic shared by Teach Thought. 18 August 2012. "The Elements of a Digital Classroom." Accessed from Teach Thought blog site at <http://www.teachthought.com/wp-content/uploads/2012/07/Digital-Classroom.png>.

This infographic shows the major role of technology on how textbooks and education are changing as a whole.

Web-based Tools

- Schwartz, Katrina. 08 July 2013. *"13 Free Web Tools Students and Teachers Should Know About."* Accessed from MindShift website at <http://blogs.kqed.org/mindshift/2013/07/13-free-web-tools-students-and-teachers-should-know-about/>.

This post talks about some of the favorite web-based tools of two educators, Adam Bellow (founder of [EduClipper](#)) and Steve Dembo (Online Community Manager for Discovery Education), who are both considered as early adopters of ed-tech classroom strategies. Below are some of the apps included in their list. To get the complete list and have a full understanding of what these apps are, tap the link indicated above.

- [Padlet](#) is essentially a virtual board with sticky notes that can be easily moved, shared and embedded. The privacy and moderation settings make it easy for students to become members of a board where a teacher can post resources and encourage them to do the same.
- [Ipiccy](#) is a photo editing tool similar to Photoshop, but less complicated. It has intuitive editing control panels that allow for simple photo editing tasks like filters, effects, cropping and resizing. Ipiccy has layers that like Photoshop allow a user to make very professional final products. It's easy to upload projects to Facebook, Twitter, and other social networks that a class might be using to house finished work.
- [Thinglink](#) makes it easy for students and teachers to create a project that is more dynamic and interactive. For example, a student could display a map of Washington, D.C. and add a video explaining how a bill becomes a law over the Capitol building. The user just clicks a spot on the image and adds text, a link to a website, or an embed code for video.
- [Easel.ly](#) makes it easy to create an infographic or a visual depiction of information. The tool offers set themes that can be dragged onto a blank canvas to give students somewhere to start. It's good for those uncertain of their tech skills, but who want to begin integrating some digital tools into the classroom.
- [Poll Everywhere](#) is a polling tool that has been around for several years, and a familiar tool with many teachers. It's built with HTML 5 so it can be used with any device and is responsive to screen size. Teachers can create both multiple-choice questions and open-ended questions that students (can) respond to via text.

- [WeVideo](#) is a simple web-based video editing tool that turns video projects from a huge time consumer to an easy and fun experience. The tool allows users to upload content, save it in the cloud, and can link to other storage space like Google Drive. The video can be published using different file sizes, the smallest of which is free. The tool also offers a number of themes, effects and transitions to spiff up any video.

3.3 Instructional Design Resources

The creation and transmission of knowledge is essential for teaching and learning. Accomplishing the highest levels of pedagogical approach in the classroom and beyond is what makes content truly great. Practical resources that foster the enhancement of teaching and learning covering different content areas are listed here in alphabetical order.

Leagan Gaeilge wrote an article in the website "Project Maths" regarding the importance of selecting and making effective use of learning and teaching resources. Leagan suggested the following guidelines in selecting content resources:

1. content resources should be in line with the learning outcomes in the syllabus;
2. content resources should take students' prior knowledge into account;
3. content resources should present concepts and ideas in an active and effective way;
4. content resources should engage students actively in learning;
5. content resources should provide knowledge but also scaffold learning;
6. content resources should provide for students' differences by offering varied learning activities at different levels of difficulty;
7. content resources should be used to complement textbooks and should promote and extend independent learning in addition to what was learned in class; and
8. content resources should facilitate discussion and inquiry.

You may tap on the link to read more about this article: <http://www.projectmaths.ie/learningResources/guideline.asp>

Art Teaching

Available below are web resources on art teaching.

- "Songs for Teaching: Using music to promote learning" website. Accessed at <http://www.songsforteaching.com/index.html>.

This website recommends music that teachers and students alike will find enjoyable and educationally useful. It contains links to thousands of children's songs, lyrics, sound clips and teaching suggestions.

- Quirk, Penelope. "*Art Smarts: After School Art Lessons*" website. Accessed at <http://www.artsmarts.net/>.

This website contains resources on art lessons that kids can do after school. The website aims to provide quality art instruction to children after school. It offers lesson plans which they claim can go on for approximately four years.

- "*Federal Registry for Educational Excellence*" website. Accessed at <https://www2.ed.gov/free/index.html>.

The website, FREE, provides over 1,500 teaching and learning resources from the US federal government. The resources here are alphabetically arranged according to subject matter.

- "*Teaching Ideas*" website. Accessed at <http://www.teachingideas.co.uk/art/contents.htm>.

The website "Teaching Ideas" has a page devoted to art lessons. Art teachers will have a field day accessing the free art lessons and resources offered here. Each art lesson even indicates the age group that the lesson will be most suited for.

- "*Teacher Vision*." Accessed at <http://www.teachervision.fen.com/art/teacher-resources/6681.html>.

The website "Teacher Vision" compiles art resources for teachers in the elementary, middle and high school levels. The resources include lesson plans, printable activities, quizzes, and references.

- Bartel, Marvin. "*Planning Art Lessons and Units*." Accessed at <http://olc.spsd.sk.ca/de/resources/artideas/index.htm>.

The website provides detailed instructions for teachers on how to plan and prepare art lessons. It guides teachers from gathering information about the students' knowledge on art to planning activities for analysis and abstraction.

[Astronomy \(NASA\)](#)

Available below are web resources on some of the projects of the National Aeronautics and Space Administration (NASA) that can supplement your lessons in science, specifically astronomy.

- "Jet Propulsion Laboratory." Accessed at <http://www.jpl.nasa.gov/infographics/>.

This section in the Jet Propulsion Laboratory (JPL) website is designed specifically to provide awesome infographics on its different missions and projects.

- "NASA Education." Accessed at http://www.nasa.gov/audience/for_educators/index.html.

This is NASA's section devoted to educators. A wealth of resources on NASA topics and materials may be found in this section, including mobile apps and e-books that you can download for free, education pages for NASA missions, print materials, educational publications, and many more.

- "Mars Exploration." Accessed at <http://mars.jpl.nasa.gov/participate/marsforeducators/>.

This is another resource page from NASA, designed specifically to provide teachers and students with lesson plans, activities, projects, workshops, videos, and images about Mars.

Biology

The following are web resources on the subject of biology.

- "BioDigital" website. Accessed at <https://www.biodigitalhuman.com/home/>.

This website provides free resources that offer "a better way to understand health and the human body." It lets users view the human body in 3D, hide or remove layers, create custom views, and many more.

- "Penn Medicine" website. Accessed at http://www.pennmedicine.org/health_info/animationplayer/.

The "Penn Medicine" website has a great resource on medical topics, which are arranged alphabetically, grouped according to medical specialties, and are presented through animations or videos.

- "Inner Body" website. Accessed at <http://www.innerbody.com/>.

This is a website where students can learn about human anatomy and physiology. It provides charts, diagrams, animations, graphics, descriptions and many more.

- “Healthline” website. Accessed at <http://www.healthline.com/human-body-maps#2/16>.

This web page gives animated lessons on the different parts of the human body. You can point your mouse over to any part of the image and get more information about it. You can also “peel away” layers of the body to look at different levels.

- “Visible Body” website. Accessed at <http://www.visiblebody.com/>.

This website presents resources that help teaching and learning anatomy and physiology visual and engaging through 3D models. It offers apps that advance the way students learn and healthcare professionals practice.

- “eSkeletons” website. Accessed at <http://www.eskeletons.org/>.

This website by the University of Texas at Austin offers interactive skeletal anatomy of humans and primates. It has a page offering activities and teaching resources that include life-size printouts, scramble puzzles, word search puzzles, crossword puzzles, and songs, among others.

- Bailey, Regina. “10 Great Biology Activities and Lessons.” Accessed from About Education website at http://biology.about.com/od/biology_lessonplans/a/aa081304a.htm.

This post contains a list of Biology activities and lessons that allow students to investigate and learn through hands-on experience.

- Simulation game on open heart surgery. Accessed from [ABC](http://www.abc.net.au/science/lcs/heart.htm) website at <http://www.abc.net.au/science/lcs/heart.htm>.

This link allows you to play the role of a surgeon performing a coronary artery bypass surgery. The process is very simple and in each step, instructions are provided to help you work. At the start of the page is a disclaimer that says the simulation activity is not for the faint-hearted.

Book Reviews

Listed below are websites where book reviews are made available. Access these websites by tapping on the links below.

- Accessed from LibraryThing website at <http://www.librarything.com/>.

This link is a community of over a million and a half book lovers. It requires a signup. Once you are registered you can then connect to people who read what you post and also interact with what they publish.

- Chandler, Otis. January 2007. Accessed from Good Reads website at <http://www.librarything.com/>.

This website allows you to decide upon titles and genres you like and "Good Reads" gives you insightful recommendations and right into your inbox. You can also join in discussions about books you or your friends read.

- "Goodreads" website. Accessed from <http://www.goodreads.com/>.

This is a community-powered encyclopedia for book lovers. It lets you create a virtual bookshelf, discover new books, connect with friends and learn more about your favorite books for free.

- Ghara, Marjan. "*BiblioNasium*" website. Accessed at <https://www.biblionasium.com/>.

This link is a platform where kids connect to their teachers, friends and parents to share and recommend their favorite books and good reads. It also provides books with different reading levels and has a great and intuitive reading log.

- "Figment" website. Accessed at <http://figment.com/>.

This link from "Figment" is a community where you can share your writing, connect with other readers, and discover new stories and authors.

- "Scholastic" website. Accessed at <http://teacher.scholastic.com/activities/swyar/>.

This page allows teachers and students to share what they are reading and discover new books based on their friends' recommendations.

Documentary Websites

Listed below are websites where you can access documentary films. Resources available on these websites can be helpful to you as a teacher in further illustrating lessons taught in class.

- DOCUMI website. Accessed at <http://documentarystorm.com/category/art-artists/>.

The DOCUMI website lists down into different categories over 2,000 full-length documentaries from several online resources. Each documentary is

provided with a short description, the length of videos, and the approval rating from readers on a scale of 1 to 10.

- "FreeDocumentaries.org" website. Accessed at <http://freedocumentaries.org/>.

This website streams full-length documentary films free-of-charge and with no registration needed. The films are gathered by the website's researchers who scour the web for well-produced videos. The website aims to bring thought-provoking, educational, and entertaining documentaries to anyone with high-speed internet connection.

- "Documentary Educational Resources" website. Accessed at <http://der.org/>.

The main purpose of this website is to foster cross-cultural understanding through the distribution and promotion of quality educational ethnographic, documentary, and non-fiction films and videos from around the world.

Educational Posters

In a guest post on the blog coolinfographics.com, ("What Makes a Cool Infographic," July 2013.), Kim Reese and Dino Citraro of the data viz firm Periscopic pointed out that many of the visuals published on the web are being referred to as infographics even when they are merely 'digital posters.' According to them, "Digital posters are everywhere and almost entirely presented under the auspices of being an infographic. These distant cousins confuse the definition of an infographic because, while they often might be easy to read and quick to digest, they fail to expand the essence of the data by adding context and metaphor."

Tap on the link to get a clearer idea of the difference between infographics and digital posters.

- "Free Educational and Classroom Posters." Accessed from Kids Know It Network website at <http://www.kidsknowit.com/free-educational-posters/> and at <http://www.kidsknowit.com/free-educational-posters/free-classroom-posters.php>.

These pages contain links to educational posters that are completely free to download. All posters are copyrighted but permission is granted freely. The files are in PDF at 19" x 13".

- Venosdale, Krissy. "Venspired" website. Accessed at <http://life-long-learners.com/free-motivational-educational-posters/>.

This website contains beautifully created classroom posters and tons of student ideas and classroom themes.

- McDonald, Heidi. *"Quotes about Education."* Accessed from Unique Teaching Resources website at <http://www.uniqueteachingresources.com/Quotes-About-Education.html>.

This contains 600+ quotes about education and general motivational quotes that you can use for school and social media purposes. The list of quotes about education is arranged in alphabetical order. There are 12 free posters that you can download.

Educational Presentations

According to the website Texas 4-H, an educational presentation is a great way to increase public speaking skills. It provides an opportunity for you to get up in front of a group of people and showcase knowledge.

- AgriLife. *"What is an Educational Presentation?"* Accessed from AgriLife website at https://agrilife.org/wharton4h/files/2015/06/educational_presentation.pdf.

While educational presentation is discussed here in the context of an online learning community for the youth, this short paper should give you an idea of what educational presentation is, its importance, how it should be done, and where to get resources to develop an educational presentation.

- Nield, David. 27 December 2016. *"7 Great Drawing and Sketching Apps That Turn Anyone Into an Artist."* Accessed from Gizmodo website at <https://fieldguide.gizmodo.com/these-drawing-and-sketching-apps-turn-anyone-into-an-ar-1790354782>.

This contains links to mobile apps that the author had compiled and reviewed himself, which guarantees the validity of each app. These are useful in helping you create visually appealing teaching materials and educational presentations.

- *"Free Presentations in PowerPoint Format and Free Interactive Activities for Kids."* Accessed from Pete's Power Point Station website at <http://www.pppst.com/index.html>.

This is where you can access a wide range of great educational slide presentations arranged into categories such as language and arts, social studies, science, math, and many others.

Educational Quotes

Available below are web pages that compile quotes related to education.

- "Education Quotes." Accessed from Brainy Quote website at http://www.brainyquote.com/quotes/topics/topic_education.html.

This section in the website Brainy Quotes contains hundreds of quotes about education. The website also offers access to many quotes arranged according to authors, topics, and even picture quotes.

- Cummins, Kevin. "101 Excellent Educational Quotes." Accessed from Ed Galaxy website at <http://www.edgalaxy.com/education-quotes/>.

"These quotes will make your students and fellow (teachers) think you are a deep and intellectual thinker, and hopefully, (these) inspire and motivate them, too." The quotes included are based on inspiration and motivation, teaching, learning and education.

- "Quotes about Education." Accessed from Good Reads website at <http://www.goodreads.com/quotes/tag/education>.

This page lists down over 2,000 quotes about education. You can see how many "like" hits a specific quote has, and the tags or key words under which the quotes may be categorized. Clicking on the pictures of the authors leads to another page where information about the authors is found.

- Teach Junkie. "27 Classroom Poster Sets: Free and Fantastic." Accessed from Teach Junkie website at <http://www.teachjunkie.com/organization/27-classroom-posters-free/>.

This page offers a collection of posters containing education quotes that teachers can download, print, and use for their classrooms.

Educational Technology Blogs

A [post](#) in Edudemic.com published in November 2013 (Lepi, Katie. 2013) underscored the importance of web articles that already list and recommend resources worth checking out. Sorting through an array of resources can be time consuming, and more so when you have to skim through the contents of a website to decide if it has what you need. The following links are online articles that list down great education technology blog sites.

- Brainscape Team. 20 January 2017. "Top 10 Education Tech Blogs." Accessed from Brainscape website at <https://www.brainscape.com/blog/2015/01/top-education-tech-blogs/>.

The team at Brainscape listed down their top 10 favorite education technology blogs, which they described as smart, concise, and immediately useful. The blog sites featured can be relied on for the best and latest strategies for using technology in education.

- Neilsen, Lisa. 12 March 2012. *"Top 10 Technology Blogs for Education."* Accessed from Lisa Neilsen: The Innovative Educator blog site at <http://theinnovativeeducator.blogspot.com/2012/03/top-10-technology-blogs-for-education.html>.

This is a cross post from another website, [College Online](#), where the blog site *The Innovative Educator* was included in the list of top ten educational technology blogs. The post contains brief descriptions of each blog site and the links to each site. According to the post, most of the blogs in the list are maintained by experts in educational IT and are truly useful for teachers who want to get great ideas in integrating technology to enhance traditional teaching methods.

- Ribelro, Ricky. 03 June 2013. *"The 2013 Honor Roll: EdTech's Must-read K-12 IT Blogs."* Accessed from Ed Tech website at <http://www.edtechmagazine.com/k12/article/2013/06/2013-honor-roll-edtechs-must-read-k-12-it-blogs>.

This post offers a great resource for teachers as it contains a list of 50 educational technology blogs, as reviewed and recommended by the website EdTech. The blogs are "a mix of voices ...and authored by teachers, administrators, and technology vendors. They share real-world classroom experiences, offer inspiration, and distribute valuable best practices."

- Smith, Frank. 21 May 2014. *"The 2014 Dean's List: 50 Must-Read Higher Education Technology Blogs."* Accessed from EdTech website at <http://www.edtechmagazine.com/higher/article/2014/05/2014-deans-list-50-must-read-higher-education-technology-blogs>.

This post contains the 2014 must-read ed tech blogs as reviewed and recommended by the website EdTech. According to the author, majority of the blogs in the list are new to "Must-Read list" compiled by EdTech yearly. Some of the blogs were recommended by the website's readers, and some are already "veterans" from the previous year's list.

- Burt, Ronnie. *"Best Ed Tech / Resource Sharing Blog 2014."* Accessed from The Edublog Awards website at http://edublog_awards.com/2014-awards/best-ed-tech-resource-sharing-blog-2014/.

This page contains the finalists in the 2014 Edublog Awards under the category Best Ed Tech Blog.

- Tenkely, Kelly. *"iLearn Technology."* Accessed at <http://ilearntechnology.com/>.

This website is all about integrating technology into the classroom. It offers great resources for teachers with easy-to-implement ideas using technology in the classroom.

- *"Virtual School Meanderings."* Accessed at <http://virtualschooling.wordpress.com/about-vhsm/>.

This blog focuses on issues related to distance education at the K-12 level, specifically on the use of virtual and cyber schools.

- Nash, Susan S. *"E-Learning Queen."* Accessed at <http://elearnqueen.blogspot.com/>.

This blog focuses on distance training and education, from instructional design to e-learning and mobile solutions, and pays attention to psychological, social, and cultural factors. The edublog emphasizes real-world e-learning issues and appropriate uses of emerging technologies.

- Davis, Vicki. *"Cool Cat Teacher Blog."* Accessed at <http://coolcatteacher.blogspot.com/>.

This blog contains articles on teaching students with new tools, enthusiasm, and belief that teaching is a noble calling.

- Walsh, Kelly. *"EmergingEdTech."* Accessed at <http://www.emergingedtech.com/>.

This website engages students in enhancing their learning outcomes with internet and instructional technologies which can be useful in promoting learning.

Educational Search Engines

The [webopedia](#) (Beal, Vangie.) defines *search engines* as "programs that search documents for specified keywords and returns a list of the documents where the keywords are found. A search engine is really a class of programs; however, the term is often used to specifically describe systems like Google, Bing, and Yahoo! Search that enable users to search for documents on the World Wide Web."

The following are search engines that are devoted specifically to education searches.

- "iSEEK." Accessed at <http://education.iseek.com/iseek/home.page>.

iSEEK offers to make a web search better by making it more relevant, direct, productive, and intelligent. In fact, it had dropped the term "searching" and instead refers to their service as "targeted discovery"—the new era of information retrieval on the web.

- Sponsored by the Institute of Education Sciences of the US Department of Education. "ERIC – Education Resources Information Center." Accessed at <http://eric.ed.gov/>.

This is an internet-based digital library of education research and information. ERIC aims to "provide a comprehensive, easy-to-use, searchable, internet-based bibliographic and full-text database of education research and information for educators, researchers, and the general public.

- "ipl2: Information you can trust." Accessed at <http://www.ipl.org/>.

According to the website, Ipl2 is a public service organization and a learning/teaching environment. This website merges the collections of resources from the Internet Public Library and the Librarians' Internet Index (LII) websites. It features searchable, subject-categorized director of authoritative websites; links to online texts, newspapers, and magazines. Visitors of this website can ask a reference question from what they refer to as "ipl2 librarians."

- "Virtual LRC.com" Accessed at <http://www.virtuallrc.com/>.

"This Virtual Learning Resources Center indexes thousands of the best academic information websites, selected by teachers and library professionals worldwide to provide students and teachers with current and valid information for school and university academic projects."

- Bielefeld University Library. "Basefield Academic Search Engine." Accessed at <https://www.base-search.net/>.

Basefield is a search engine that pulls materials from scholarly sources on the Internet. The site can generate results from over 100 million documents, which can then be narrowed down into the researcher's specific needs by using its advanced search feature.

Educational Videos

The following are websites that publish video content on education.

- "Teaching Channel." Accessed at <https://www.teachingchannel.org/>.

Teaching Channel, launched in June 2011, is a video showcase on the internet and TV of innovative and effective teaching practices in America's schools. Its video library offers educators a wide range of subjects for grades K-12.

- Dunn, Jeff. 10 August 2012. "The 100 Best Video Sites for Educators." Accessed from Edudemic website at <http://www.edudemic.com/best-video-sites-for-teachers/>.

This is an exhaustive list of websites where teachers can get video learning resources.

- "Teachers TV Videos." Accessed from TES Connect website at http://www.tes.co.uk/article.aspx?storyCode=6081830&s_cid=RESads_TTV_videos#.VBa_iLFdC_0.

This page offers free videos that you can view and download. Teachers can view relevant videos on teaching and learning in early years, primary, secondary and whole school, as well as films to help with continued professional development.

- Smith, Adam and Smith, Jason. Launched on 06 March 2007. "TeacherTube.com" Accessed at <http://www.teachertube.com/videos/>.

This section of the TeacherTube.com contains educational videos that are created by teachers and designed for students. The website provides an online community for sharing instructional videos.

Flipped Classroom

Available below are web resources that are meant to help you learn more about flipped classroom as a pedagogical approach and how to structure classroom activities following its principles.

- February 2012. "7 Things You Should Know About Flipped Classrooms." Accessed from EDUCAUSE website at <https://library.educause.edu/resource/2012/2/7-things-you-should-know-about-flipped-classrooms>.

The EDUCAUSE website presents an article that talks about "7 Things You Should Know about Flipped Classrooms." The article defines flipped classroom as "a pedagogical model in which the typical lecture and homework elements of a course are reversed.... The notion of a flipped

classroom draws on such concepts as active learning, student engagement, hybrid course design, and course podcasting.

The value of a flipped class is in the repurposing of class time into a workshop where students can inquire about lecture content, test their skills in applying knowledge, and interact with one another in hands-on activities. During class sessions, instructors function as coaches or advisors, encouraging students in individual inquiry and collaborative effort."

- Gerstein, Jackie. 13 June 2011. *"The Flipped Classroom Model: A Full Picture."* Accessed from User Generated Education website at <http://usergeneratededucation.wordpress.com/2011/06/13/the-flipped-classroom-model-a-full-picture/>.

Here's a good resource to widen your perspectives and understanding of flipped classrooms. This post by Dr. Jackie Gerstein provides an explanation of the flipped classroom model, where video lectures and vodcasts fall within a larger framework of learning activities.

- Gerstein, Jackie. 03 April 2013. *"A Little More on the Flipped Classroom."* Accessed from User Generated Education website at <http://usergeneratededucation.wordpress.com/tag/flipped-classroom/>.

This is a related post from the User Generated Education website, which also talks about flipped classroom approach and provides links to more articles on the topic as found in [Teach 100](#). This post also shows some materials and resources that the author uses (in SlideShare) to present the full picture of a flipped classroom.

- Blackboard, Inc. 06 February 2013. *"A Realist's Guide to Flipping the Classroom."* Accessed from SlideShare at <https://www.slideshare.net/BlackboardInc/social-flipped-classroomslidesharefinal>.

This resource uploaded in SlideShare by Blackboard, Inc. enables you to learn from experiences of teachers using flipped classroom approach. It will also give you some tested-in-the-real-world tips for doing a flip of your own.

- Grafton, Daniel. 02 December 2012. *"The Fuss over Flipped Classrooms."* Accessed from visual.ly at <http://visual.ly/fuss-over-flipped-classrooms>.

This infographic by Daniel Grafton details the pros and cons of the flipped classroom. Read about what supporters and critics say about flipped classroom approach.

- Kharbach, Med. September 2012. "Great Video Tutorials on Flipped Classroom." Accessed from Educators Technology and Mobile Learning at <http://www.educatorstechnology.com/2012/09/great-video-tutorials-on-flipped.html>.

This post compiles four interesting video resources from [avatargeneration](#). The videos provide more insights on flipped classroom which should enable teachers to explain the concept better to both students and their parents.

- Bergmann, Jonathan and Sams, Aaron. 15 April 2012. "How the Flipped Classroom is Radically Transforming Learning." Accessed from The Daily Riff website at <http://www.thedailyriff.com/articles/how-the-flipped-classroom-is-radically-transforming-learning-536.php>.

This article gives you an idea of how the flipped classroom was born.

- Douglas, Emily. 02 February 2012. "Flipped Classroom: Flipped Talent Management Practices." Accessed from Education Week blog K-12 Talent Manager at http://blogs.edweek.org/topschooljobs/k-12_talent_manager/2012/02/flipped_classroom_flipped_talent_management_practices.html?cmp=ENL-EU-VIEWS2.

This post published in the blog site Education Week is inspired by an infographic that provides a detailed explanation of the flipped classroom. The concept of flipped classroom is clearly captured by Bill Tucker, Education Next blogger:

"With teacher-created videos and interactive lessons, instruction that used to occur in class is now accessed at home, in advance of class. Class becomes the place to work through problems, advance concepts, and engage in collaborative learning. Most importantly, all aspects of instruction can be rethought to best maximize the scarcest learning resource--time."

Gaming in Education

Learn more about the possible benefits of incorporating games in your classroom activities and assessments.

- Mackay, R.F. 01 March 2013. "Playing to learn." Accessed from Stanford News website at <http://news.stanford.edu/news/2013/march/games-education-tool-030113.html>.

In a forum on "Playing to learn" hosted by Stanford University in 2013, the leading figures in academia, design, and policy, were one in saying that using games as an educational tool provides opportunities for deeper

learning. Tap on the link to learn more about what distinguished experts on education and gamification have to say about the promise of using games in pedagogy.

- Hudson, Hannah. 31 October 2013. "*The Teacher Report: Game-based Learning vs. Traditional Classroom Game Play.*" Accessed from WE are TEACHERS website at <http://www.weareteachers.com/community/blogs/weareteachersblog/blog-wat/2012/10/31/the-teacher-report-game-based-learning-vs.-traditional-classroom-game-play>.

How does game-based learning differ from the games you've been incorporating in your classroom all these years? This post provides a summary of the key differences between game-based learning and traditional classroom game play.

- Mullich, David. 27 September 2013. "*Game-Based Learning.*" Accessed from slideshare.net at <https://www.slideshare.net/dmullich/game-based-learning-26636013>.

This gives an idea of the important benefits and characteristics of a learning game. It also discusses how games can be adapted for classroom use to support learning.

- Gee, James Paul. 30 September 2013. "*Why are Video Games Good for Learning?*" Accessed from AADL Co-Lab website at <http://www.academiccolab.org/resources/documents/MacArthur.pdf>.

This paper written by James Paul Gee elaborates on the value of gaming in learning. One of Gee's main arguments is that video games are good for learning, but not because they are games. Even when not using games, the learning principles built into good video games can still be used in many different curricula. He also clarified the kind of video games that are most interesting for learning.

- Oblinger, Diana. "*Simulations, Games, and Learning.*" Accessed from EDUCAUSE website at <https://library.educause.edu/resources/2006/1/simulations-games-and-learning>.

The author, Diana Oblinger, talks at length about games in education; how these can facilitate learning; how these can be blended with other educational tools; and the implementation issues like the high development costs that go against the use of games in education.

- Hopkins, David. 28 December 2008. "Games in the Classroom... Are you Sure?" Accessed from Don't Waste Your Time website at <http://www.dontwasteyourtime.co.uk/?s=games+in+the+classroom>.

"Games have often been thought of as unhelpful, disruptive, and even potentially dangerous for a child's development. Yet research has shown that we are at our best at learning when we are being entertained." David Hopkins, in this article, talks about how games can actually boost intended learning outcome in the classroom.

- Clark, Douglas, Tanner-Smith, Emily, Killingsworth, Stephen. March 2014. "Digital Games, Design, and Learning: A Systematic Review and Meta-Analysis (Executive Summary)." Accessed from SRI International website at <http://www.sri.com/work/publications/digital-games-design-and-learning-systematic-review-and-meta-analysis-executive-su>.

This scholarly article shared by SRI International systematically reviews research on digital games and learning for K-16 students in light of the recent NRC report on education for life and work in the 21st century (NRC, 2009).

- Burns, Mary. April 2012. "Immersive Learning for Teacher Professional Development." Accessed from eLearn Magazine website at <http://elearnmag.acm.org/featured.cfm?aid=2181208>.

"Immersive environments" allows learners to be totally "immersed" in a self-contained artificial or simulated environment, while experiencing it as real. "Immersive learning" is the kind of learning that takes place in an immersive environment. This article talks about how "immersive learning," while still used more for student learning, can also be applied for teacher learning because it can offer the same learning opportunities for teachers—development of content knowledge, behavioral skills, creativity, high order thinking and persistence—as they do for students.

- Ross, Peter. 15 June 2012. "Case Study in Gamification." Accessed from Scribd at <http://www.scribd.com/doc/97223668/Case-Study-in-Gamification>.

This post is a case study of a math teacher who uses a gamified high school math program to help at-risk students succeed, a case study. The teacher also details the challenges she encountered in using gamification.

- Barseghian, Tina. 29 June 2012. "The Educational Value of Games: A 13-Year-Old's View." Accessed from KQED blog site at <http://blogs.kqed>

[.org/mindshift/2012/06/the-value-of-educational-games-a-13-year-olds-view/](http://www.mindshift.org/mindshift/2012/06/the-value-of-educational-games-a-13-year-olds-view/).

This shows a video of Lewis Tachau, a 13-year-old middle school student and an avid online gamer talking about how his favorite online game taught him not just everything he knows about World War II, but also how to socialize with his peers and share his interests, knowledge, skills, and thoughts with others.

- Jackson, Sarah. 16 May 2012, "*Camp Virtual: Your Guide to Making Summer Learning Fun*." Accessed from Common Classroom, the Common Sense Education blog site at <https://www.common sense media.org/educators/blog/camp-virtual-your-guide-to-making-summer-learning-fun>.

This links to a free virtual guide on 50 apps, games and websites for kids ages 2 to 17, which you can download and pass on to parents. The digital activities highlighted in the guide were selected using a resource that rates the educational value of new technologies to help teachers and parents choose products with great learning potentials for kids and teens.

- Andersen, Paul. 24 April 2012. "*Classroom Game Design: Paul Andersen at TEDxBozeman*." Accessed from YouTube at http://www.youtube.com/watch?v=4qIYGX0H6Ec&feature=player_embedded.

This short video shows a high school science teacher who explains how he is using technology and the elements of games to increase student engagement and learning in his classroom.

- "*Make My Own Game*." Accessed from Sploder website at <http://www.sploder.com/free-game-creator.php>.

This page offers a chance for you to create your own game through free game creator apps. With Sploder, you can create arcade games, platformer flash games, 3D space adventure games, and classic shooter games.

Grammar Learning Websites

Available below are web resources on learning English grammar.

- "*No Red Ink*" website. Accessed at <http://www.noredink.com/>.

This is an online learning platform that helps students improve their grammar and writing skills. The web site is currently free for everyone—teachers, students, parents, tutors, school administrators, and all who want to improve their grammar.

- Koltai, Anastasia. 21 January 2013. "10 Websites to Learn and Practice English Grammar." Accessed at <http://www.myenglishteacher.eu/blog/english-grammar-9-websites-to-learn-and-practice-english-grammar/>.

This web post first shows you an advertisement that promises to improve your English 110% faster with a qualified native English teacher via Skype. This is the service offered by the website "My English Teacher.eu." It also encourages you to subscribe to the website and receive grammar lessons in your email every day. Below these advertisements, though, is the post that lists down nine websites where you can learn and practice English grammar. The tenth website on the list offers English courses but only for English-speaking countries.

- Hart, Jane. 13 November 2011. "Top 100 Tools for Learning 2011." Accessed from [SlideShare.net](http://www.slideshare.net/janehart/top-100-tools-for-learning-2011) at <http://www.slideshare.net/janehart/top-100-tools-for-learning-2011>.

This is a collection of some of the best resources on web tools for teachers compiled by Jane Hart of the Centre for Learning and Performance Technologies.

History Teaching

The following are online resources on history that can supplement your lessons and activities.

- Website created by EdTechTeacher Inc. *Best of History Websites*. Accessed at <http://www.besthistorysites.net/>.

This website is an award-winning portal that contains annotated links to over 1200 history websites, as well as links to hundreds of quality K-12 history lesson plans, teacher guides, games, quizzes, and more.

- An initiative of the Weatherhead East Asian Institute at Columbia University. "Asia for Educators" website. Accessed at <http://afe.easia.columbia.edu/>.

This website is designed to serve faculty and students in world history, culture, geography, art, and literature at the undergraduate and pre-college levels. The website provides resources for teachers and students.

- About.com, an IAC Company. "About Asian History" website. Accessed at <http://asianhistory.about.com/>.

This website features Asian History resources for both students and teachers. There's a section where users of the website recommend and share readings that they have found.

- Voss, Jon. "Look Back Maps" website. Accessed at <http://www.lookbackmaps.net/index.php#lat=37782000%7Clng=122412000%7Czoom=13%7Cchecked=2,5,6,7%7Ctype=1>.

This website allows users to view historical pictures of various locations on Google Maps, search for specific locations, and even add images.

- Hand, Brian is co-founder and chairman of *World History Project*. Accessed at <http://worldhistoryproject.org/>.

The website gives people the opportunity to collaboratively record, discover, and share history. "It's history recorded by the people, for the people." One of the features of this website allows people to discover events and history around the globe on a specific day, month, or year and cites similarities of events throughout time and location.

- "Timeline Index" website. Accessed at <http://timelineindex.com/content/home.php>.

This is a recording of the major historical events arranged into timelines. You can search for people, periods, places and events in a chronological context. It offers many ways to browse the contents: by using keywords, indicating specific year or period, or combining keywords with specific year.

- Owned by the A&E Television Networks, LLC. "Planet H" website. Accessed at <http://www.planethistory.com/>.

This website offers an exciting and fun way to learn history. It is designed for kids ages 7 to 11. It has a selection of mobile games that allows kids to explore history topics through play.

- Developed by a team at the US Library of Congress, with support from UNESCO. "World Digital Library" website. Accessed at <http://www.wdl.org/en/>.

This website lets you browse and discover important historical documents and materials from all around the globe, as well as view ancient maps, manuscripts, pictures and many more. The materials are available free of charge and in multilingual formats.

- Developed and maintained by the Center for Grassroots Oversight. "History of Commons." Accessed at <http://www.historycommons.org/>.

The "History of Commons" is a tool for open-content participatory journalism. It allows people to investigate important issues by providing space where people can collaborate on the documentation of past and current events. The website contains over 20,000 events on topics such as global warming, free trade, bombing in 9/11, the Iraq war, and many more.

- Originated and conceived by Paul Trainor and Andrew Chater. "*Timelinetv*." Accessed at <http://timelines.tv/>.

This is a free-to-use video rich history resource. Just browse through the timeline already provided here and let your journey into the past starts.

- Gascoigne, Bamber and Henghes, Ian. 2007. "*Time Search*." Accessed at <http://www.timesearch.info/timesearch/>.

This link is like a search engine that lets you look for historical timelines. You can choose a specific period of time to search or if you want to be focused, then use the "Areas" and "Themes" menus.

- Site created by the National Archives Experience and the Foundation for the National Archives. "*Docs Teach*." Accessed at <http://docsteach.org/>.

This website provides thousands of historical documents from the National Archives. You can either read the documents online or print them and save them with you.

- Stauber, Matan. "*Histography*" website. Accessed at <https://histography.io/>.

The website features an interactive timeline of historical events starting from the Big Bang up until 2015. Resources in this website are sourced from Wikipedia and are automatically updated daily as new events become part of recorded history.

Language Arts

You can find web resources on language arts listed below.

- Kharbach, Med. August 2012. "*Great Free Web Resources on Language Arts*." Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/08/great-free-web-resources-on-language.html>.

This post contains a list of links to free online resources for language arts.

- Sheppard, Brad Jr. and Chapgar, Jasmine. *"Language Arts Games."* Accessed from Sheppard Software website at http://www.sheppardsoftware.com/web_games_vocab.htm.

This page features a variety of fun games for different grade levels to improve English vocabulary, grammar, capitalization, and punctuation.

- *"Language Arts."* Accessed from IXL Learning website at <http://www.ixl.com/ela/>.

This page offers hundreds of adaptive online practice skills on language arts for second grade through eighth grade levels.

- Ogen, Karen. *"Interactive Sites for Education."* Accessed from Interactive Sites for Education at <http://interactivesites.weebly.com/>.

This page contains a list of recommended links to websites offering fun, educational, interactive games and simulations for language arts. The resources are grouped according to topics.

Literature

Below are websites that can assist you and your students in reading and studying literature.

- *"The Literature Network."* Accessed at <http://www.online-literature.com/>.

This website offers online literature for students, educators, and enthusiasts. It currently has over 3,500 full books and over 4,400 short stories and poems by over 260 authors. The quotations database has over 8,500 quotes, and its quiz system features over 340 quizzes. The website also features a forum where there are thousands of members ready to answer queries or share their thoughts.

- "Project Gutenberg" website. Accessed at <http://www.gutenberg.org/>.

Project Gutenberg's online collection of classic literature offers over 56,000 free e-books which can be read online or downloaded onto a desktop or mobile device.

Math

Available below are web resources that you can use to help your students learn math. You can choose from among these resources the ones that best suit the learning needs of your students.

- *"Math Practice 4 You."* Accessed from Education World website at http://www.educationworld.com/a_lesson/archives/math_practice_4_you.shtml.

This link from "Education World" presents a variety of math resources that all teachers can use to liven up their lessons.

- *"SuperKids Math Worksheet Creator."* Accessed from SuperKids Education at <http://www.superkids.com/aweb/tools/math/index.shtml>.

This is a website that provides a wide variety of math drill worksheets. Teachers can also make their own worksheet using these simple tools.

- *"Math Worksheets Listed by Specific Topic and Skills Area."* Accessed from teach-nology website at http://www.teach-nology.com/work_sheets/math/.

This link contains over 2,000 free math printable materials that range in skill from K-12. These printable materials can be used by teachers, students, and parents.

- Accessed from Simpsonsmath.com at <http://mathsci2.appstate.edu/~sjg/simpsonsmath/>.

This page links math learning to a cartoon show called "The Simpsons." It offers fun ways to introduce important concepts to students, and to reduce math anxiety and motivate students.

- Kokcharov, Igor and Geek, Gerry. "Math and Logic Problems." Accessed from A+ Click website at <http://www.aplusclick.com/>.

This website helps students become problem solvers. It features over 4,300 challenging problems for students in grades 1 to 12, starting from the very simple to the extremely difficult. It also offers practical problems and brainteasers that can be solved within one minute and without using a calculator.

- Website hosted by the Illinois Institute of Technology. *"SMILE: Science and Mathematics Initiative for Learning Enhancement."* Accessed from the SMILE website at <http://mypages.iit.edu/~smile/mathinde.html>.

This page contains a collection of almost 200 single concept lessons in math. These lessons may be freely copied and used in a classroom. The lessons are divided into categories like geometry and measurement, patterns and logic, probability and statistics, recreational and creative math, and many more.

- Accessed from TenMarks math website at <http://www.tenmarks.com/>.

This website offers an easy and effective way to use instructional materials in any classroom, for all students. It provides online math practice and instruction from grades 2 through high school.

- *"Free Math Worksheets."* Accessed from MathScore.com website at <http://www.mathscore.com/math/free/worksheets/freeMathWorksheetGenerators.html>.

This page offers free, high-quality math worksheets that target basic math facts. The worksheets have been proven to improve math proficiency for all skill levels from remedial through advanced.

The next list of websites and webpages have math apps available for download.

- Kharbach, Med. 10 February 2013. *"10 Outstanding Android Math Apps."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/02/10-outstanding-android-math-apps.html>.

This post recommends some great math apps that will run on Android devices.

- *"Fun and Educational Math Apps for Kids."* Accessed from AppAdvice.com website at <https://appadvice.com/applists/show/fun-math-apps-for-kids>.

"These elementary school level math apps are a win-win for teachers and parents who want to motivate their kids to sharpen their math skills! This AppList focuses on iPad apps, but most of the apps are actually universal, so you can use them on your iPhone or iPod touch as well."

- *"Windows Mobile Math Freeware."* Accessed from Freeware Pocket PC website at <http://www.freewarepocketpc.net/ppc-tag-math.html>.

Download here some of the most popular math apps for Windows phones and pocket PCs.

Science

The following are web resources on science.

- *"The Periodic Table of Comic Books."* Accessed from University of Kentucky website at <http://www.uky.edu/Projects/Chemcomics/index.html>.

This link contains a periodic table of elements called "Periodic Table of Comic Books". This is an initiative from Kentucky University to promote the

learning and teaching of chemistry by providing students and teachers with a wide range of references. The process is very simple and easy to use.

- Accessed from Ptable website at <http://www.ptable.com/>.

This link from "Ptable" contains interactive Table of Elements. This table does not only provide links to pages of data about elements but it also outsources these write-ups to others like "Wikipedia" and "WebElements" through the dropdown in the first tab. Besides write-ups, you will have access to photos, videos, and even podcasts related to each element.

- Accessed from LearningScience.org at <http://www.learningscience.org/index.htm>.

This link from "Learning Science" is a free and open community of educators sharing newer and emerging tools to teach science.

- Accessed from Discovery Education website at <http://school.Discoveryeducation.com/sciencefaircentral/>.

This website contains science resources and it offers free links, interactive, presentations, and science projects which can be used by teachers and students.

- "BJ's Resources." Accessed from BJ's Resources at <http://camilla.senior.homestead.com/resources.html>.

This link contains science printable materials that teachers and students can have free access to. These printable materials are organized under different headings and titles.

- Accessed from Understanding Science at <http://undsci.berkeley.edu/>.

This website offers everything you need to know about the nature and process of science. This link is full of free resources which you can integrate into your teaching and learning materials.

- Lamb, Annette and Johnson, Larry. May 2005. Accessed from 42Explore.com at <http://42explore.com/index.htm>.

42Explore is a great search engine specifically honed to provide search results pertaining to science, math, health, and many others. Just click on the category you want to search.

- "The Field Book Project." Accessed from Smithsonian National Museum of Natural History at <http://www.mnh.si.edu/rc/fieldbooks/>.

The overall mission of “Field Book Project” is to create one online location for scholars and others to visit when searching for field books and other field research materials.

- “The Science Education Resource Center (SERC) at Carleton College.” Accessed from Earth Exploration Toolbook at <http://serc.carleton.edu/eet/index.html>.

This is a collection of online Earth system science activities. Each activity or chapter introduces one or more scientific data sets and analytical tools that enable users to explore some aspect of the Earth system.

The following are websites and webpages that list down science apps available for download.

- Lloyd, James. 04 July 2013. “*The 10 Best Android Science Apps.*” Accessed from Focus: Science and Technology website at <http://sciencefocus.com/feature/tech/10-best-android-science-apps>.

This page makes a list of science apps for Android that teachers and students are sure to enjoy. From apps that let users simulate a real-life surgery to apps that can tell you the name of a constellation by just pointing your camera at the sky.

- “*Apps for Science Lovers.*” Accessed from AppAdvice website at <http://appadvice.com/applists/show/apps-for-science-lovers>.

“If you are a scientist, chemistry teacher, or a student just trying to get through microbiology you will find a must-have app in this (post).”

- Malykhina, Elena. 05 November 2013. “*8 Apps that Turn Citizens into Scientists.*” Accessed from Scientific American at <http://www.scientificamerican.com/article/8-apps-that-turn-citizens-into-scientists/>.

This post recommends “eight Windows mobile apps that cover a variety of scientific disciplines—including marine biology, meteorology and ecology—that will bring out the scientist in you.”

Social Studies

The following are web resources that you can use to supplement lessons in social studies.

- “*Social Studies Teaching Resources.*” Accessed from Pinterest at <http://www.pinterest.com/lauracandler/social-studies-teaching-resources/>.

This page has over a thousand collections of pinned teaching resources that cover a wide variety of social studies topics including geography, history, economics, and politics. The resources are ideal for teaching social studies in Grades 3 to 6.

- *"Top Free Resources for teaching Social Studies."* Accessed from Classroom Aid website at <http://classroom-aid.com/educational-resources/social-study/>.

This page lists some of the top free resources for teaching and learning social studies; the tools for history class; teacher's blogs focused on history; and a link to a game-based learning for social studies.

- *"Social Studies Theme Units."* Accessed from EdHelper website at http://www.edhelper.com/Social_Studies.htm.

This is a section provided by "Edhelper" and which offers great activities and projects all geared towards a better understanding of this subject area.

Vocabulary Sites

Available below are websites that you can use to help your students expand their English vocabulary.

- Accessed from Vocabulary.com website at <https://www.vocabulary.com/>.

This is a website that will help students master the vocabulary essential to their academic success.

- Accessed from BBC Learning English website at <http://www.bbc.co.uk/worldservice/learningenglish/language/>.

In this section you will have access to a plethora of vocabulary activities and tasks that is great for classroom discussion.

- Accessed from JTW website at <http://www.just-the-word.com/>.

Just The Word is a cool website that helps students make informed decisions as to the right word selection to use in their writing.

- Accessed from LexiPedia website at <http://www.lexipedia.com/>.

Lexipedia is an online visual semantic network with dictionary and thesaurus reference functionality.

- Accessed from Wordnik website at <http://www.wordnik.com/word-of-the-day>.

Wordnik shows definitions from multiple sources, so you can see as many different takes on a word's meaning as possible.

- Accessed from Lingro website at <http://lingro.com/>.

Lingro provides an on-line environment that allows anyone learning a language to quickly look up and learn the vocabulary most important to them.

- Accessed from VisualThesaurus website at <http://www.visualthesaurus.com/vocabgrabber/>.

VocabGrabber analyzes any text you're interested in, generating lists of the most useful vocabulary words and showing you how those words are used in context.

- Accessed from Snappy Words website at <http://www.snappywords.com/>.

Snappy Words is an online interactive English dictionary and thesaurus that help you find the meanings of words and draw connections to associated words. You can easily see the meaning of each by simply placing the mouse cursor over it.

Web Evaluation

Evaluating websites and contents are important if you want to be sure that the information you are getting are correct, credible, and can be trusted. This section offers links to web posts that should inform you on how to properly and correctly evaluate websites.

- "Evaluating Web Sites." Accessed from ClassZone website at http://www.classzone.com/books/research_guide/page_build.cfm?content=web_eval.

Learn how to evaluate websites from this post, which adds sample activities to give you a chance to evaluate a website. It also provides a printable guide in evaluating websites.

- Shrock, Kathy. (N.D.) "Critical Evaluation of Information." Accessed from Kathy Shrock's Guide to Everything at <http://www.schrockguide.net/critical-evaluation.html>.

"One of the most important information literacy skills for students is learning how to critically evaluate information found on the web. This

contains a list of (1) articles that teaches how to evaluate information found on the web; (2) articles for learning about the aspect of literacy; and (3) a list of bogus sites that shows not everything on the web are real.

- Website maintained by the Cornell University Library. *"Evaluating Web Sites: Criteria and Tools."* Accessed from Olin and Uris Libraries website at <http://olinuris.library.cornell.edu/ref/research/webeval.html>.

This post provides a checklist for evaluating websites, evaluating information found on the internet, and the criteria to use for evaluating.

- Website maintained by the Cornell University Library. *"Five Criteria for Evaluating Web Pages."* Accessed from Olin and Uris Libraries website at <http://olinuris.library.cornell.edu/ref/research/webcrit.html>.

This post gives five criteria to evaluate web documents and matching ways to interpret the guide further. The criteria focus on the following: accuracy, authority, objectivity, currency, and coverage. According to this post, when all requirements or expectations based on these five criteria are met, then you are certain that you have found a truly valuable web document.

Here are some more links to enhance your knowledge in web evaluation.

- Kharbach, Med. July 2012. *"Teacher's Easy Guide on How to Evaluate Web Content for Classroom Inclusion."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/07/teachers-easy-guide-on-how-to-evaluate.html>.

This post contains a list of some of the most important techniques that you can use to teach your students how to evaluate a web page.

- *"Distinguishing Scholarly from Non-Scholarly Periodicals: A Checklist of Criteria."* Accessed from Cornell University Library at <http://olinuris.library.cornell.edu/ref/research/skill20.html>.

This post tells you how to distinguish scholarly journals from other periodicals, which can be helpful if you are looking for sources to cite in your research.

- *"Critically Analyzing Information Sources: Critical Appraisal and Analysis."* Accessed from Cornell University website at <http://olinuris.library.cornell.edu/ref/research/skill26.htm>.

This post gives you ten things to look for when evaluating an information source. It also gives tips on how to critically analyze content sources that are useful for research and paper publication.

- *"Evaluating Resources."* Accessed from the University of California - Berkeley Library website at <http://guides.lib.berkeley.edu/evaluating-resources>.

This post provides a detailed guide on how to evaluate resources for academic use. It invites researchers to consider six things: authority, purpose, publication and format, relevance, date of publication, and documentation. Distinction between scholarly and popular sources, and primary and secondary sources are also made to clarify which resources best suit one's academic purposes.

- *"Evaluating Information."* Accessed from Cybrary Man's Educational Web Sites at <http://cybraryman.com/evaluating.html>.

This link contains collections of websites on how to evaluate information on the Internet such as how to evaluate quality of information and others.

- *"Finding & Evaluating Information on the Internet: Evaluating Web Pages."* Accessed from the Austin Community College website at <http://researchguides.austincc.edu/c.php?g=434784&p=2965346>.

This page will help you identify websites that are fraudulent or misleading in nature. The link contains several steps on how to detect information on website to determine whether they are legitimate or not.

- June 1997. *"Comparing and Evaluating Web Information Sources."* Accessed from the From Now On website at <http://www.fno.org/jun97/eval.html>.

This link contains information on how to compare and evaluate web information sources.

- *"Checklist for Evaluating Web Resources."* Accessed from University of Southern Maine website at <http://usm.maine.edu/library/checklist-evaluating-web-resources>.

This link contains a checklist for evaluating web resources and critical analysis to determine the value of the website you will be accessing.

3.4 Educational Apps

The emergence of mobile educational apps has undoubtedly made learning more accessible and interesting for many people, both young and adult alike. Read this post by Christopher Martini on the *"Importance and Benefits of Educational Mobile Apps"* from Fifium to find out some of the benefits of having such apps in your mobile device.

Tap on this link to access the article: <https://www.fifium.com/en/blog/importance-and-benefits-of-educational-mobile-apps/>.

Here's another article written by Tina Barseghian and was published by Mind Shift website, "*Explosive Growth in Education Apps*." This post shares the key findings and recommendations of a study done on the education category on Apple's App Store. Tap on this link to access the article: <http://blogs.kqed.org/mindshift/2012/01/explosive-growth-in-education-apps/>.

The following are sample educational apps arranged according to categories and mobile operating systems.

Audio Apps

Below are websites and webpages that list down audio apps available for download.

- "*Top Free in Music and Audio – Android Apps*" Accessed at https://play.google.com/store/apps/category/MUSIC_AND_AUDIO/collection/topselling_free.

The apps from Google play are presented based on popularity. Just select and download an app to instantly enjoy free music and audio.

- Kharbach, Med. (N.D.) "*Audio Apps for iOS*." Accessed from Educational Technology and Mobile Learning website at https://www.educators-technology.com/p/blog-page_9.html.

This page compiles all articles on the website Educational Technology and Mobile Learning, which has the tag "iPad audio apps."

- "*Audio Apps for Windows 8 Mobile*." Accessed from Windows Phone website at <http://www.windowsphone.com/en-us/store/search?q=audio>.

This page presents all audio apps both free and by subscription for use in mobile devices running on the Windows 8 platform.

Creativity Apps

The following are websites and webpages that list down creativity apps available for download.

- Posted on 03 February 2014. "*The top 28 Android apps to download now*." Accessed from Creative Bloq website at <http://www.creativebloq.com/app/android-apps-912698>.

Here are some of the best Android apps available for designers found in Google Play, which is Google's android market. It should be easy for you to decide which app you want based on the descriptive narration that accompanies each app. It also indicates the app developer and whether it can be downloaded for free or purchased for a minimal fee.

- Posted on 20 October 2017. *"The 65 best iPhone apps for designers."* Accessed from Creative Bloq at <http://www.creativebloq.com/design-tools/best-iphone-apps-812522>.

Listed in this post are some of the latest and great iPhone apps that you can download to your smartphone. The review of each app is provided and the name of the developer, as well as the price of the app if it's not for free. For iPad users, tap on the link below to learn about the best apps for design, creativity, inspiration, organization, and fun, too.

- Posted on 14 January 2016. *"The 100 best iPad apps."* Accessed from Creative Bloq at <http://www.creativebloq.com/web-design-tips/mobile-apps/best-ipad-apps-1233629>.

This blog entry presents a list of top one hundred apps on Apple Store for iPad, saving you time and effort browsing through thousands of applications available. The list includes apps for creativity, design, time management, and entertainment.

- Willians, Joel. 13 August 2014. *"10 Must-Have Windows Phone Apps for Creatives."* Accessed from Nokia@Work website at <https://blogs.windows.com/devices/2014/08/13/10-must-apps-creatives/>.

Here are ten apps available from Windows Phone store that are best for everyone with a creative flair in them.

Dictionary Apps

The following are websites and webpages that list down dictionary apps available for download.

- *"Dictionary Apps for Android."* Accessed from Google Play at <https://play.google.com/store/search?q=dictionary&c=apps>.

Most of these apps are for free. The apps in Google Play may be enjoyed instantly without the hassle of syncing.

- Kazmucha, Allyson. 05 June 2014. *"Best English dictionary apps for iPhone and iPad."* Accessed from iMore website at <http://www.imore.com/best->

english-dictionary-apps-iphone-and-ipad-word-vault-dictionarycom-merriam-webster-and-more.

The App Store is full of dictionary apps but this list gives you the best, along with descriptions of each app to help you decide what to get for your mobile device.

- *"Best English Dictionary Apps for iPhones/ iPads."* Accessed from AppGuide website at <http://appadvice.com/appguides/show/english-dictionary-apps>.

"Let this AppGuide lead you in the right direction as to what English language dictionary will serve you, your situation, and your iDevice the best."

- *"Dictionary Apps for Windows 8 Mobile."* Accessed from Windows Phone at <http://www.windowsphone.com/en-us/store/search?q=dictionary>.

This page presents all dictionary apps available for your Windows 8 Mobile devices.

Diagram Apps

The following are websites and webpages that list down diagram apps available for download.

- *"Diagram apps for Android."* Accessed from App Crawler at <http://appcrawlr.com/app/search?go=go&q=diagram+apps&device=android>.

This page contains more than 25 diagram apps for mobile devices running on the Android system. You can further refine your app search through the options indicated (e.g., price—free, paid, or price dropped).

- Kharbach, Med. November 2011. *"Useful Apps to Create Diagrams, Doodles, and Sketches."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2012/11/useful-apps-to-create-diagrams-doodles.html>.

This post suggests apps that you can use if you want to do some doodling and sketching on your iPad, iPhone, or iPod Touch.

- *"Diagram App for Windows 8 Mobile – Diago."* Accessed from Windows Phone website at <http://www.windowsphone.com/en-us/store/app/diago/346a4aa4-80ce-44da-95a1-63c6d6fad424>.

Diago is a Windows 8 mobile app that lets you use shapes and tools to create various types of diagrams. The best thing about it is you can have it in your smartphone or tablet for free.

Drawing Apps

The following are websites and webpages that list down drawing apps available for download.

- De Looper, Christian. 07 May 2014. *"The 5 best Android apps for drawing and sketching."* Accessed from Talk Android at <http://www.talkandroid.com/guides/beginner/the-5-best-android-apps-for-drawing-and-sketching/>.

This post suggests five Android drawing apps that you can buy at the app store. A brief introduction on each app's features is presented, including links to articles where you can get more in-depth review.

- Posted on 29 August 2014. *"22 Best iPad Art Apps for painting and Sketching."* Accessed from Creative Bloq at <http://www.creativebloq.com/digital-art/art-on-the-ipad-1232669>.

"Make stunning art on the iPad with these top tools! These powerful painting and drawing apps can help you start creating iPad art today."

- *"Drawing Apps for Windows 8 Mobile."* Accessed from Windows Phone website at <http://www.windowsphone.com/en-us/store/search?q=drawing>.

Select from the many drawing and sketching apps available in the Windows Phone store. The ratings and prices (if any) of each app are given to help you decide on which app to get.

File Sharing Apps

Below are websites and webpages that list down file-sharing apps available for download.

- Glenn, Alex. 15 September 2014. *"Free File Sharing Apps: The Top 10 Most Private."* Accessed from Younity Blog at <https://blog.getyounity.com/free-file-sharing/>.

To help those who have a daily file sharing habit, here is an article that features some of the best peer-to-peer file sharing app for devices running on Android, Apple, or Windows operating systems. Clicking on the name of each app will lead you directly to the download site, in case you want to buy and download.

- *"File Sharing Apps for iOS."* Accessed from AppCrawler website at <http://appcrawler.com/ios-apps/best-free-apps-file-sharing>.

This page compiles in one-page file sharing and storing apps that you can download to your iPhone or iPad.

- *"File Sharing Apps for Windows 8 Mobile."* Accessed from Windows Phone website at <http://www.windowsphone.com/en-us/search?q=file+sharing>.

Check out the file sharing apps available for devices running on Windows 8 mobile devices. Clicking on each app should provide you with details that you need to get an insight of what an app can offer.

Gaming Apps

The following are websites and webpages that list down gaming apps available for download.

- Cutlack, Gary. 25 December 2017. *"The best free Android games in 2018: try these out now."* Accessed from techradar website at <http://www.techradar.com/news/phone-and-communications/mobile-phones/60-best-free-android-games-2013-687718>.

This page compiles some of the best gaming apps available to download for Android mobile devices. The best thing about these apps is that these are all for free, so start browsing and check the reviews for each app.

- Price, David. 13 December 2017. *"Best free iPhone games."* Accessed from Macworld (from IDG) website at <https://www.macworld.co.uk/feature/iosapps/best-free-iphone-games-2017-3507064/>.

This article recommends the most essential, must-play gaming apps for iPad, iPhone, and iPod Touch. Each app comes with a review and download link.

- Sawh, Michael. 11 February 2013. *"Best Windows Phone 8 games you need to play."* Accessed from The Gadget Website at <http://www.t3.com/features/best-windows-phone-8-apps-games>.

This post recommends "essential games" that you should grab at Windows Store.

Grading Apps

The following are websites and webpages that list down grading apps available for download.

- Ybañez, Alvin. 23 May 2012. *"Best Android apps for teachers, tutors, and educators."* Accessed from Android Authority website at <http://www.androidauthority.com/best-android-apps-teachers-tutors-teaching-88110/>.

This post contains a list of apps that can be used by teachers. "Through advancing technology, using these apps can certainly increase the quality of education in the classroom and lighten the load of teachers."

- *"Apps for teachers: iPad/iPhone Apps."* Accessed from App Advice at <http://appadvice.com/applists/show/apps-for-teachers>.

This page highlights the top picks of the website App Advice "for teachers who are dedicated to their students and their profession."

- *"Grading Apps for Windows Mobile."* Accessed from Windows Phone website at <http://www.windowsphone.com/en-us/store/search?q=grades>.

This page provides a list of grading apps available for Windows Mobile devices.

Grammar Apps

The following are websites and webpages that list down grammar apps available for download.

- Koltai, Anastasia. 17 July 2013. *"6 Excellent English Grammar Apps for Android."* Accessed from My English Teacher website at <http://www.myenglishteacher.eu/blog/6-excellent-english-grammar-apps-for-android/>.

More than just a list of grammar apps for Android, the article also takes a closer look at what each offers and what kind of learner will most benefit out of every app.

- Matthews, Kayla. 21 April 2015. *"7 Apps to Help Anyone Improve Their English Grammar."* Accessed from makeuseof website at <https://www.makeuseof.com/tag/7-apps-help-anyone-improve-english-grammar/>.

These web page offers some of the best free Android apps that can help improve English grammar.

- Kharbach, Med. 06 November 2013. *"6 Good Grammar Apps for Learning Grammar."* Accessed from Educational Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/11/6-good-ipad-apps-for-learning-grammar.html>.

"Grammar learning now is so much fun and way enjoyable than it used to be...and this is all due to the interactive apps available in the app store." This site features some of the most popular grammar apps for devices running on iOS.

- *"Best Free Apps for English Grammar (Windows Phone.)"* Accessed from AppCrawlr at <http://appcrawlr.com/windows-apps/best-free-apps-english-grammar>.

This page contains some of the best free Windows Phone grammar apps that you can download to your device.

Learning Apps

The following are websites and webpages that list down learning apps available for download.

- Betterley, Jen. 12 March 2013. *"30 of the Best Educational Android Apps for Kids."* Accessed from Parent Map website at <https://www.parentmap.com/article/20-educational-android-apps-for-kids>.

This list recommends 30 of the best educational apps suited for devices running on an android operating system. Each app includes a brief description of the app to save you time in choosing what to download. It also indicates if the app is for free or download for a minimal fee.

- Pearce, Kyle. 6 September 2017. *"Pocket University: A Guide to the 100 Best Educational iPhone Apps."* Accessed from DIY Genius website at <https://www.diygenius.com/best-educational-iphone-apps/>.

This is a list of educational applications for iOS devices, which covers a wide range of areas for teachers and students alike. Applications are organized by category so viewers can easily find the apps that they are looking for.

- Betterley, Jen. 12 March 2013. *"35 Windows Phone Apps for Kids and Parents."* Accessed from Parent Map website at <https://www.parentmap.com/article/30-windows-phone-7-apps-for-kids-and-parents>.

This page contains a list of "fantastic" Windows Phone apps that are great not just for kids, but also for parents. The post indicates if an app is for free or may be downloaded for a minimal fee.

Mind Mapping Apps

According to [Wikipedia](#), a mind map is a [diagram](#) used to visually organize information. A mind map is often created around a single concept, drawn as an

image in the center of a blank landscape page, to which associated representations of ideas such as images, words and parts of words are added. Major ideas are connected directly to the central concept, and other ideas branch out from those. If you want to learn more about mind maps, its difference from other forms of visualization, and see samples of it, tap this link: http://en.wikipedia.org/wiki/Mind_map

The following are mind mapping apps available for Android, iOS, and Windows mobile devices.

- 19 February 2014. *"10 Great Mind Mapping Apps for Android."* Accessed from XSLAB website at <http://xslab.com/2014/02/10-great-mind-mapping-apps-for-android/>.

This page lists ten of the best free mind mapping apps available for Android devices. The review contains a description of each app, the developer, and the app version reviewed.

- Kharbach, Med. (N.D.) *"Mind Mapping Apps for iOS."* Accessed from Educators Technology and Mobile Learning website at <http://www.educatorstechnology.com/search/label/iPad%20mindmapping%20apps>.

This page shows web posts related to iPad mind mapping apps. One of the posts talks about a great mind mapping app, which is now available for free—the MagicalPad HD.

- *"50+ Best Apps for Mind Mapping (Windows Phone)."* Accessed from App Crawl website at <http://appcrawlr.com/windows-apps/best-mind-mapping>.

This page lists down 50 of the best mind mapping apps available for Windows phone. The good thing about this is you can get a comparison among apps that you like.

Presentation Apps

The following are websites and webpages that list down presentation apps available for download.

- Nuckles, Brett. 17 June 2014. *"Top 5 Presentation Apps for Android."* Accessed from Business News Daily website at <http://www.businessnewsdaily.com/6619-top-presentation-apps-android.html>.

"Picking the Android presentation app that's right for you depends on your individual needs." Read this post and learn about five of the best Android presentation apps available.

- Kharbach, Med. November 2013. *"The Best iPad Presentation Apps for Teachers and Students."* Accessed from Educators Technology and Mobile Learning website at <http://www.educatorstechnology.com/2013/11/the-best-ipad-presentation-apps-for.html>.

This post contains a selection of presentation apps that teachers and students can use in their iOS devices.

- *"Presentation software for Windows."* Accessed from Download.com at <http://download.cnet.com/windows/presentation-software/>.

This page suggests presentation apps that you can download for mobile devices running on Windows. Each app has a brief description of what it does, the version of the software, user ratings, and the total number of downloads—that should help you decide which app to choose.

Printing Apps

The following are websites and webpages that list down printing apps available for download.

- *"Everything you need to know about printing from your Android Phone or Tablet."* Accessed from How-To-Geek website at <http://www.howtogeek.com/165778/everything-you-need-to-know-about-printing-from-your-android-phone-or-tablet/>.

This post guides Android phone and tablet users on how to take advantage of available apps for printing jobs which you can do anywhere. The explanations are very easy to understand and follow.

- *"Printer Apps."* Accessed from App Advice website at <http://appadvice.com/appguides/show/printing>.

"If you have a printer that is not AirPrint friendly, getting a file to print from your iPad can be a hassle. There are many apps to help you with this task. This AppGuide will give you the best apps to print various files from your non-AirPrint printer."

- Rathborne, Andy. *"How to print from a Windows 8 Start Screen App."* Accessed from For Dummies website at <http://www.dummies.com/how-to/content/how-to-print-from-a-windows-8-start-screen-app.html>.

"Many of the apps in the Windows 8 Start Screen can't print at all, and those that do allow printing don't offer many ways to tinker with your printer's settings." Here is a step-by-step guide on how to print from a Start Screen App to help you in case you need to print something from your gadget.

Productivity Apps

The following are websites and webpages that list down productivity apps available for download.

- McAlone, Nathan. 31 July 2016. "The 18 apps you should use every day to be more productive." Accessed from Business Insider website at <http://www.businessinsider.com/best-productivity-apps-for-iphone-android-2016-7/#pocket-lets-you-save-articles-to-read-offline-later--on-any-device-1>.

The productivity apps included on this list will surely make Android devices more useful than ever. The list includes apps for basic business tasks, saving articles for offline reading, and organizing projects.

- Vardy, Mike. (N.D.) "*The Lifehack Big List: 50 top Productivity Apps for iPhone.*" Accessed from Lifehack blog site at <http://www.lifehack.org/articles/productivity/the-lifehack-big-list-50-top-productivity-apps-for-iphone.html>.

The Lifehack Big List of iOS productivity apps is an "all-in-one resource" that you can review anytime and at your leisure.

- Kidman, Angus. 27 November 2013. "*20 Best Windows Phone Productivity Apps.*" Accessed from Gizmodo website at <http://www.gizmodo.com.au/2013/11/20-best-windows-phone-productivity-apps/>.

If you want to get the most of your Windows mobile device, better install some of the most helpful productivity apps. This post should help you get started in selecting the best tool for note taking and storage, talking with others for free, social networking, organizing your travel, and general utilities.

Special Education Apps

The following websites and webpages list down special education apps available for download.

- Medcalf, Laura. 1 July 2015. "6 Android Apps for Special Needs." Accessed from Easterseals Crossroads website at <http://www.eastersealstech.com/2015/07/01/6-android-apps-for-special-needs/>.

Android has a bunch of special education apps available on Google Play. This post compiles a list of some of the best special education apps so you don't need to "dig real hard to find them."

- *"Special Education Apps."* Accessed from Teach with Your iPad in Wiki Spaces website at <https://teachwithyouripad.wikispaces.com/Special+Education+Apps>.

These special education apps are very interactive and will surely raise your interests. The icon, the title of the app, the brief description, and the cost are indicated for each app in the list to help you decide better on what app to choose.

- *"50 Best Free Apps for Special Education (Windows Phone)."* Accessed from AppCrawler website at <http://appcrawlr.com/windows-apps/best-free-apps-special-education>.

Find here the most suitable special education app for your Windows mobile device. Each app's description, user ratings, and cost are indicated to help in your selection.

Speech-to-Text Apps

The following websites and webpages list down speech-to-text apps available for download.

- Boris, Cynthia. 29 January 2013. *"3 Mobile Apps for Converting Voice to Text."* Accessed from Entrepreneur website at <http://www.entrepreneur.com/article/225584>.

"If you have trouble seeing the small type, have a lack of finger dexterity or just think better out loud, you might benefit from a tool that allows you to convert spoken words to written words." This is a review of three different speech-to-text apps that can help you "get things done with a lot less hassle."

- Swanson, Greg. 16 February 2014. *"Speech to Text Apps – Updates."* Accessed from Apps in Education at <http://appsineducation.blogspot.com/2014/02/speech-to-text-apps-updates.html>.

This is an updated list of the suggested speech-to-text apps as reviewed by the author Greg Swanson. The original suggested list published in 2012 had over 70,000 hits/views.

- *"Speech to text at Windows Phone Central."* Accessed from WP Central website at <http://www.wpcentral.com/tag/speech-text>.

This page contains a number of web postings that talk about speech-to-text apps for Windows mobile devices. There is an article that talks about the app "Copy This" and how this can be integrated with Windows Phone 8.1. Another article talks about how you can use your voice in a text-to-speech app for Windows Phone 8. Read on to learn more about these apps that you can use for your mobile device.

Writing Apps

The following are websites and webpages that list down writing apps available for download.

- Gene. 23 February 2012. *"The Best Android Apps for Writers."* Accessed from Android Authority at <http://www.androidauthority.com/best-android-apps-for-writers-note-taking-56006/>.

"Gone are the days when writers used to scribble their thoughts on a rugged piece of paper with a pen and ink on the side. Thanks to the wonders of technology...apps for PCs, smartphones, and tablets are now the best and fastest ways to write down ideas, notes and blogs." If you are both a writer and an Android user, check out some of the best Android apps that are available for you in this article.

- Ong, Josh. 17 August 2013. *"The 10 Best Writing Apps on the iPad."* Accessed from TNW at <http://thenextweb.com/apps/2013/08/17/the-10-best-apps-for-writing-on-the-ipad/>.

This page lists the top 10 picks of author Josh Ong on the best writing apps for iPad.

- Marshall, Gary. 24 October 2017. *"The best free software for writers 2017."* Accessed from techradar website at <http://www.techradar.com/news/software/applications/best-free-software-for-writing-10-programs-to-unleash-your-creativity-1141280>.

This article presents some of the best free computer applications that are designed to help writers plan, write, and publish. Applications ranging from those for better attention and focus to professional-grade publishing ones are explained and reviewed. Reviews from external sources and download links are also provided for every app on the list.

This e-book on **Annotated Resources for Teachers** is meant to provide you with selected web links on topics relevant to 21st century learning, 21st century tools, higher order thinking skills, and digital citizenship that you can check while exploring the use of technologies and mobile devices for personal and professional development, particularly in enhancing your capacity as an educator of the 21st century.

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<http://www.facebook.com/mt4tproject>*