Flipped Classroom
Workshop-in-a-Book
Learn How to Implement Flipped Instruction in Your Classroom
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Author/Founder of Emerging EdTech
Engaging students and enhancing learning outcomes with Internet & Instructional Technologies
DEDICATION

This book is dedicated to my kids and to theirs,
and the generations to follow ...
with hopes that education evolves
to allow each child to thrive
and learn in the way that best suits them.
# Table of Contents

Foreword ................................................................................................................................. 9
Preface ................................................................................................................................. 12

Section 1 – GETTING TO KNOW THE FLIPPED CLASSROOM and starting your plan ......................................................................................................................... 14

Introduction ....................................................................................................................... 15
  Is the Flipped Classroom Education Technology's “Perfect Storm”? ........ 15
  Measured Results are Proving it Works ............................................................... 16
  Using This Workbook ....................................................................................... 18
  Let’s Go! ........................................................................................................ 19

Chapter 1: The Flip - What it is, What it isn’t, and How it Works ................. 20
  What it is and What it isn’t ........................................................................ 20
  How it Works .............................................................................................. 21
  Approaches to Learning Content ................................................................ 22
  What Will I do With Class Time? .............................................................. 24
  Preparing Students for The Flip ............................................................. 24

**EXERCISE #1 – Start Planning How You Will Use The Flip** ............... 26

Chapter 2: Why it works ......................................................................................... 27
  Sal Khan (Khan Academy) ........................................................................ 27
  ‘Reasons to Flip’ from Sams and Bergmann ........................................ 28
  “Active Skills Learning” (Kieran Mathieson) ........................................ 30
  The Learning Science .................................................................................. 34

Chapter 3: Succeeding with the Flip – Sharing Lessons Learned ............... 35
  John Sowash - “Flip your classroom through reverse instruction” .......... 35
  Shelley Wright - “The Flip: Why I Love It, How I Use It” ..................... 37
  Richard Thornley – “My Flipping Failure” ............................................ 38
Chapter 4: Ways to Help Ensure That Students Consume Content ..........41
Require a Notes Outline ..............................................................................41
Start each class with questions, discussions, or pop quizzes .....................41
A few more approaches and tips .................................................................42
EXERCISE #2 – Encouraging and Validating Content Consumption ........44
Chapter 5: So How do I use the Class Time I’ve Freed up? .....................45
EXERCISE #3 – Planning How to Use Class Time .....................................49
Section 2 – GETTING STARTED WITH YOUR OWN FLIPPED CONTENT .................................................................50
Section Intro ................................................................................................51
Chapter 6: Start small – Flip One Lecture ..................................................52
Voiceover PowerPoint ..................................................................................53
Tools That Let You ‘Flip’ A Video ...............................................................56
EXERCISE #4 – Voiceover a slide deck, flip an existing video, or try another technique for your first flip ..................................................................................58
Chapter 7: A Selection of Free & Low Cost Screencasting Tools and more ..59
Screencasting basic requirements ...............................................................59
Screencast-O-Matic ....................................................................................60
Jing ..............................................................................................................61
Screenr .........................................................................................................62
Screencasting on the iPad ...........................................................................63
EXERCISE #5 – Take a free screencasting app for a spin! .......................64
Chapter 8: Other Ways to Create Content – Podcasts and Digital Presentation Tools .................................................................................................65
Podcasts .......................................................................................................65
Adding Voiceover to Images .......................................................................65
Flipped Classroom Workshop in a Book

Slideshare ................................................................. 66
VoiceThread .............................................................. 66
Vuvox ........................................................................ 67
Eyejot ........................................................................ 67
SooMeta ..................................................................... 68
Vimeo .......................................................................... 68
Online collaborative activities ..................................... 69
Gaming, Simulations, Computer Based Interactives ...... 69
UpsideDownAcademy ................................................... 69
Chapter 9: When You’re Ready – Professional Screencasting Tools .......... 70
Camtasia ..................................................................... 70
ScreenFlow 4 ............................................................ 72
Chapter 10: Tips & Techniques for Creating High Quality, Engaging Screencasts ............................................... 73
From “Making Quality Flipped Class Videos,” by Jasper Fox: ... 73
From “Beginning to Flip your Classroom with Screencasting” on 21things4teachers.net: ........................................... 73
From “Most Common Mistakes in Screencasting” by Andreas Zeitler: .... 75
From Flip Your Classroom: Reach Every Student in Every Class Every Day by Bergmann and Sams ................................................................. 76

EXERCISE #6 – How will you apply good screencasting techniques (or will you approach the flip in a different way)? ......................................................... 77

Chapter 11: Approaches to Organizing Your Content for Delivery .......... 78
Your school’s LMS ........................................................ 78
Wikis .............................................................................. 78
Online LMS/CMS alternatives and “social learning” apps ............ 79
Google Drive ................................................................ 80
Google Sites .................................................................. 81
Facebook.......................................................................................................81

EXERCISE #7 – Plan your flipped content delivery ......................................83

Section 3 – FLIPPED CLASSROOM RESOURCES.......................................84

Chapter 12: Lectures from top University Lecturers.................................85
  YouTube’s Education Section.....................................................................85
  TED...........................................................................................................86
  Khan Academy ........................................................................................86
  Open Culture............................................................................................86
  CosmoLearning .......................................................................................87
  LearnersTV.com .....................................................................................87
  Teaching Channel ....................................................................................87
  MOOCs.....................................................................................................87

Chapter 13: Expert Content from TED .......................................................88

Chapter 14: Other good content to tap into ..............................................90
  Open Education Resources .....................................................................90
  MOOCs.....................................................................................................90
  Educational Interactives & Simulations ..................................................91

Chapter 15: Flipped Teaching Websites & Social Networks ....................93
  Flipped Class Social Network ................................................................93
  Dr. Jackie Gerstein’s Flipped Classroom site .........................................93
  Flipped Classroom Twitter Hashtags ....................................................93
  Flipped Classroom Pages on Facebook ................................................94
  EmergingEdTech.com “Flipped Classroom & Reverse Instruction Article Category” ..............................................................94
  The Flipped Coach ..................................................................................94

Chapter 16: Books .....................................................................................95
  Flip Your Classroom: Reach Every Student in Every Class Every Day ....95
  The Flipped Classroom: A Full Picture ..................................................95
Teaching with Emerging Technologies.........................................................95
The Flipped Classroom..................................................................................96
Chapter 17: Flipped Class Conferences and Workshops .................................97
  Flipcon........................................................................................................97
  Flipped Classroom Webinar Series from ASCD...........................................97
  Online Workshops from EmergingEdTech..................................................98
*EXERCISE #8 – Update your plan*...............................................................101
Works Cited....................................................................................................102
Foreword

Are you flipping your classroom yet? No, I am not asking you to move classrooms or the furniture in them. I am not asking you if you or your students are doing flips in the classroom. What I am talking about is a new approach to teaching that makes a lot of sense. You see, these days we are asking our teachers to do more and more, with barely enough time to do it all.

In addition to the Common Core Curriculum, and the assessments to go along with it to help ensure that we are teaching all the material we are expected to teach, a teacher’s day can often be consumed by so much more. Paperwork, fund raising, meetings, professional development, conferences – the list of things we need to accomplish goes on and on. A teacher is often left scratching their head, wondering how they will get time to teach everything they need to cover to best prepare their students for a life of learning that is both well rounded and properly paced, and still meet the obligations of a typical school day.

These days there is also much talk about differentiating our instruction as educators in order to meet the needs of each student in our classroom. Many of us have 20-25 students for about six hours of instructional time, five days a week, for 180 days a year. We’re struggling to achieve the Common Core Curriculum, or the needs of higher education, and we’re supposed to find time to differentiate instruction as well. No wonder there is so much talk about extending the school day. The problem is, how does one do that without costing an already burdened taxpayer even more money? How does one accomplish a task such as this without burning out teachers and students who already are feeling like the school day is long enough?

What about if I told you there was a way to do this and it could also perfectly differentiate instruction for all your students at the same time. You see, it is first and foremost about instruction, and for a teacher giving multiple instructional lessons to 20-25 students all at the same time, is not only difficult but seemingly impossible to find the time to deliver personalized learning. That is, up until recently … enter “the flipped classroom”.

9
Kelly Walsh walks you through everything you need to know to flip your classroom in this wonderfully written manual. From a detailed description of what the flipped classroom is and studies heralding its success, to the tools and techniques needed for successful adoption of this approach, Walsh makes it clear why we should take this emerging model of teaching seriously, and helps us to develop a plan to try it in our classrooms. Walsh does a wonderful job of helping to prepare you and your students for this change. From pointers on how to prepare your students for the flipped classroom to testimonials of other teachers who already have, Walsh helps to ease the apprehensions that may come with a new way of teaching and learning. With resources such as Khan Academy and many others, Walsh helps to build a cadre of options for teachers to consider as they plan to implement ‘the Flip’.

The teaching profession has changed because our students have changed. How they learn is not how we learned. They have access to more information at any given moment than most of us ever had during all of our years as students. We need to meet our students where they are and use the tools they are familiar with to help them best learn content at a pace that is appropriately differentiated for their own individual learning path.

If you do not know what a flipped classroom is, or even if you do, this book is for you. Walsh has captured the essence of what education needs in an easy to follow step-by-step manual to help educators examine how they teach and to hopefully open their eyes to the power of the flipped classroom. The resources he provides help to justify that this is not another fad but is, indeed, a game changer.

As a Director of Technology in a school where we are now examining the concept of our classrooms through the better use of technology to support teaching and learning, I will be sure to introduce this book to my teachers as we begin to look at transforming the way we teach to best align to the individual needs of our students while at the same time maximizing our use of class time. Flipping our classrooms will hopefully give us the opportunity to make sure that we can get to everything which is asked of us in any given day.

The flipped classroom is here. Are you prepared for it?
Greg Limperis, Director of Technology
Hampton Public Schools SAU 90
August 22, 2013

Greg is also the founder of the professional learning network called Technology Integration in Education and the website TechinEDU.com, where he can often be found discussing with its tens of thousands of members the benefits technology can play in best meeting the individual needs of our students. He met Kelly Walsh years ago as Kelly helped bring educators together on his website through wonderful blog posts that examine how technology is transforming the teaching profession.
Preface

‘The Flip’ is a Hot Topic, for Good Reason

In the spring of 2012, I couldn’t help but notice the rise in media coverage of the “Flipped Classroom.” In just a few weeks, I came across 14 news stories about this technologically-enabled teaching technique. The momentum of the flip was clearly building! I’d started covering the flipped classroom (also referred to as “reverse instruction”) on EmergingEdTech the year before, after hearing Salman Khan mention the concept and then coming across articles by a number of teachers who were excited by the idea and found it to be beneficial in their classrooms. Interest in flipped instruction continues to grow, and you can now find websites devoted entirely to the topic, like flipped-learning.com and flippedclassroom.org. A number of conferences and touring workshops have also sprung up. I’ve conducted a few online workshops on the flip that have been met with great enthusiasm from teachers across the spectrum of education (and across the world – my summer 2012 workshop included one participant from Turkey and another from Australia!).

I am excited about the flip for a number of reasons – particularly in light of the growing evidence that our educational system is struggling to meet its fundamental goals. Too many students are coming out of high school inadequately prepared and in need of remediation in order to succeed in college. In our institutions of higher education, far too many students fail to earn a degree. Meanwhile, the gap between the skills our future workforce will need and the skills our students (both children and adults) are taught and credentialed to provide continues to expand. Fortunately, there is a growing body of evidence that indicates that instructional uses of technology can play a powerful role in reversing these disconcerting trends. That’s why I’m excited to offer this workbook, and to introduce you to a number of real-world examples where Flipped Instruction has already enhanced engagement and improved learning outcomes.

Given the inherent logic in how flipped instruction can deliver so many benefits to students and teachers, and the growing adoption of the concept in schools around the world, there is little doubt that we are only seeing the beginning of the flipped classroom as a widely adopted instructional technique. Throughout this
workbook you will learn about a wide variety of ways that other educators are using flipped class techniques. I will also introduce you to the wealth of tools available on the Internet to help you get started with creating and delivering high quality flipped content. Once you’ve worked through the planning and the content, you’ll be ready to gain the major benefit of the flip – the ability to use class time in a much more constructive, hands-on, personalized way.

You’ve selected an excellent resource to learn about this powerful technology-enabled teaching construct. So let’s get started!
Section 1 –
GETTING TO KNOW THE FLIPPED CLASSROOM
and starting your plan

... ALL ABOARD!

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http://upload.wikimedia.org/wikipedia/commons/8/86/Train_scale_1_1.JPG
Introduction

Is the Flipped Classroom Education Technology's “Perfect Storm”?

Having been immersed in the world of education and instructional technologies for a number of years now, I am often faced with decisions about which technologies might have the biggest impact on teaching and learning. Which technologies, or technology-enabled techniques, are most likely to have a significant impact on students’ learning abilities and really help teachers succeed? This question has taken on even greater meaning in light of the increased controversy in recent years about ed tech spending in our schools.

The more I learned about the flipped classroom, the stronger I came to feel that this is the most powerful technology-enabled teaching concept that I have come across to date. In many ways it’s an ideal marriage of technology and instruction. There are so many reasons why it just makes a ton of sense, and when I present the topic to teachers, most of them immediately grasp its potential.

Here is a short list of reasons why the flipped classroom is a great idea that should be embraced and encouraged by the educational community:

1. Students can review 'flipped' course materials repeatedly outside of the classroom, at their own convenience, on the device of their choosing (smart phones, tablets, laptops, etc.).
2. The wide availability and engaging format of this type of learning content can be a powerful enabler of learning, and can encourage students to take more responsibility for their own learning.
3. In a fully flipped delivery model, students who miss class because of other responsibilities or illness do not have to be 'penalized' by missing course content.
4. The time in class for valuable hands-on and face-to-face learning takes on a whole new dimension, empowering teachers to do what they like to do – help students really understand the material and achieve deeper learning.
5. There are tens of thousands of educational videos and other educational media that can be used as flipped classroom content that are available for free right now (more on this in later chapters).
6. Many instructors are already doing this to some extent (when they provide reading or video homework, for example).
7. It doesn’t have to be costly or complicated to start your implementation of the flipped classroom.
8. Instructors can ease into this at the pace of their choosing, and they can select their own approach. Tech-savvy teachers can easily get started creating their own content with free Internet tools, while those who are less tech-friendly can leverage the extensive body of learning content that is already available.
9. There is a growing body of evidence indicating that the flip can have powerful results – clearly improving a range of learning outcomes, including grades, standardized test results, graduation rates, and more.

**Measured Results are Proving it Works**

I’ve been sharing a lot of stories on EmergingEdTech about schools that are producing empirical evidence that illustrates the effectiveness of the flip. Here are a few highlight from some recent articles:

- *The Economist* recently reported on a paper published in the journal *Science* about a study by Professor Louis Deslauriers at the University of British Columbia that tracked the progress of 850 undergraduate science students taking a required physics course. At the beginning of the term, the students were placed in two groups that each received instruction in the typical lecture delivery format by competent and well-regarded instructors for the first 11 weeks of the course. At the 12 week mark, the students in group 1 received instruction in a flipped classroom setting. Their class time was spent on problem-solving and discussion, while content acquisition was achieved by the students themselves, outside the classroom, via reading assignments. Students in group 2 continued in the typical lecture delivery format for the twelfth week.

At the end of week 12, all of the students were given a test to determine the level of their acquisition of content for the 12 week period. Group 2, using the lecture delivery method, had an average score of 41%, and Group 1 had an average score of 74%. According to Dr. Deslauriers and his team, their result is the, “biggest performance boost ever documented in educational research, making the new teaching style more effective even than personal, one-to-one
tuition (sic) — although measuring the effect immediately after the experiment, rather than waiting for end-of-term exam results (as other research often has), may have inflated the number somewhat.” (The Economist, 2011)

Note that in the above study, there was no effort put into creating special learning content; students were just reading the text, and then spending class time applying the concepts in dialogue and problem-solving.

- Teacher and Administrator James Szoka shared this story about a rural secondary American school district where he worked. During the 2010-2011 school year, they performed research to compare the effectiveness of two delivery models of Algebra II/Trigonometry - a lecture delivery model versus a flipped classroom model. Details are available in the article, but the bottom line is that at the end of the second semester the students using the vodcasting delivery method had a GPA in their math class of 3.2/4, a B average. The students in the traditional delivery method had a GPA of 2.52/4, a C+ average. Additionally, the percentage of students in the video podcasting class who received a grade of A for the second semester was 50%, whereas the percentage of students in the traditional class receiving a grade of A for the second semester was 39%. (Szoka, 2013)

- San Jose State University adjunct professor Khosrow Ghadiri was concerned about the course “Engineering Electronics and Circuits” and its historically low passing rate (40% of students in the class received a C or lower last semester). This led San Jose State professors to MIT, where they worked with the edX team, a partnership of MIT, Harvard, Berkeley, and the University of Texas at Austin that is focused primarily on developing MOOCs. Together they developed an approach that placed 85 students in a flipped course environment, in which the students watched edX lecture videos (created by professors at leading universities) at home and attended class twice a week to practice what they had learned and to ask questions. Two other sections of students took a traditional version of the course.

The result: Midterm exam scores for students in the flipped section were higher than those in the traditional sections. Even though the midterm questions
were more difficult for the flipped students, their median score was still 10 to 11 points higher. (The Chronicle of Higher Education, 2012)

Read more about this study in this article: Gathering Evidence that Flipping the Classroom can Enhance Learning Outcomes. (Walsh, Gathering Evidence that Flipping the Classroom can Enhance Learning Outcomes, 2013)

- Results from Clintondale High School are even more impressive, with the schools overall failure rate dropping by 10%, and discipline cases being cut drastically. (Schools of Thought (Blog), 2012), (TechSmith)

Similar articles are published from time to time and can be found in the Flipping the Classroom (Reverse Instruction) article category on EmergingEdTech.

**Using This Workbook**

The workbook is structured to help readers …

- Ease into reverse instruction by coming to understand the basics of ‘the flip’.
- Delve deeper by reviewing what teachers who are proponents of the technique have shared about their experiences.
- Get a good sense of what you are going to need to do if you decide to try the flip.
- Get hands-on and learn how to approach flipping your own course content.
- Build your own plan for implementing flipped instruction techniques.

Exercises at the end of some sections and chapters will help to reinforce your learning and encourage you to think through ways to apply what you’ve learned. Section 2 of the book is the most intensive in this regard, and this is where the bulk of the exercises are found. Each exercise has its own corresponding web page where readers are encouraged to submit their completed exercises, and read the submissions of others, to learn more and to increase their involvement in the flipped instruction community.

I suggest working through the book start-to-finish if you are new to the flipped classroom. If you believe you are already familiar with the fundamentals of the flip
and want to get hands-on right away, you may consider going right to the first exercises, and then move onto some of the more hands-on chapters in Section 2.

*Let’s Go!*

So let’s start learning what the flip is really about, and how you can get started flipping some of your own content. Over the course of this workbook, you’ll develop a plan to effectively incorporate the flip into your instructional approach.
Chapter 1: The Flip - What it is, What it isn’t, and How it Works

What it is and What it isn’t

One of my first readings about The Flip was a three part article by Jon Bergmann, Jerry Overmeyer, and Brett Willie that included bulleted lists offering quick insights into what the flipped classroom is and what it is not. This was a great way to start to clear up some misconceptions, and to begin to better understand the idea and how it can benefit students and teachers. I’ve share most of their excellent original bullet points below, but I have added expanded explanations of each point, incorporating things I’ve learned as I have researched, advocated, and taught this technique to others. (Jon Bergmann J. O., 2012)

The Flipped Classroom is NOT:

- A synonym for online videos. While online videos can be a central element in a flipped course, they are simply a means of conveying learning content and thereby freeing up valuable face-to-face class time. How this class time is then used is one of the most important elements of a successful flipped class.

- An online course. Online courses are conducted almost exclusively online, whereas the flipped classroom simply changes what is being done as ‘homework’ and what is being done in class.

- Replacing teachers with videos. Again, the videos are only a means to an end. In the flipped classroom, the teacher’s role becomes much more proactive, personalized, and hands-on. The teacher is more important than ever under this teaching construct.

- Students spending class time staring at a computer screens. The online content that is used to facilitate the flip is typically consumed outside of the classroom (and when content is developed well and delivered with clear expectations, consuming it can be more engaging than just passively watching, listening, or reading).

- Students working alone, in isolation. While the traditional classroom is more likely to consist of students listening to lecture content and furiously scribbling
notes, then going home to try to work through the material alone, the flipped classroom delivers the learning content after-hours and uses class time for more engaging, involved learning.

**The Flipped Classroom IS:**

- **Interactive:** The time that is made available in class via the flip offers a means of enhancing the level of interaction and contact time between you and your students.

- **Blended learning:** By flipping learning content and using in-class time in a more constructivist way, you will be able to blend elements of direct instruction, online learning, project-based learning, and other teaching techniques.

- **A powerful aid to students who must occasionally miss a class:** In a course that has been fully (or mostly) flipped, students who are absent due to illness or extra-curricular activity will be in a much better position to be able to keep up with learning content and course work.

- ** Archived:** Every bit of course content that is made available online is instantly archived for review or remediation.

- **Engaging:** As students consume learning content in a watch-rewind-replay mode, and use class time in a more hands-on way, they are more likely to be highly engaged in their learning.

- **An opportunity for personalized learning:** When class time is freed up to be used differently, the potential to better know your students and personalize their learning activities is significantly increased.

**How it Works**

The fundamentals of the flip revolve around the idea of delivering lectures and other traditional classroom learning content as homework, and then using valuable face-to-face classroom time to do what used to be assigned as homework, to help those who need it, and to delve further into the material with constructive
activities. As of April, 2013, Wikipedia’s definition for flipped teaching is as follows:

“Flipped teaching (or flipped classroom) is a form of blended learning which encompasses any use of technology to leverage the learning in a classroom, so a teacher can spend more time interacting with students instead of lecturing. This is most commonly being done using teacher-created videos that students view outside of class time. It is also known as backwards classroom, reverse instruction, flipping the classroom, and reverse teaching.” (Flip Teaching)

There are many ways to approach this, and every time you provide any sort of materials to consume and then spend time reviewing them in the next classroom session, you’ve already taken a step along the path to the flipped classroom.

As you develop a body of learning materials that can be consumed outside the classroom, you need to plan on how you will take advantage of the class time you have now made available. A list of common techniques follows shortly, but first, as the saying goes, “let’s start at the beginning.”

**Approaches to Learning Content**

So, how does the flip really work? What do I have to do to prepare for it and what will my students do differently? Isn’t this going to take a ton of work to get started?

First, let me reassure you that it doesn’t have to take a lot of work to get started with some flipped content. At the same time, there’s no sense denying that it is a fair amount of work to transition a full course to a flipped model (although how much really depends on a few factors).

There are numerous ways to try your hand at flipping a little content. We’ll get into this in-depth and use some tools to create flipped, digital materials as we work through this book.

To get us started, here’s a quick look at a few of the techniques that we’ll be learning about:

**Flipping your own existing digital materials**
Do you have PowerPoint slides or other digital materials? PowerPoint already has the tools to let you record voice narration over your existing slides. Chapter 6 explains this technique in detail, and includes a link to a video that will help you learn how to do it.

Do you frequently use other digital materials to present learning content to students? These can be a great starting point. By combining these with free screencasting tools like Screencast-O-Matic or Jing, you can easily record voice-overs for these materials to create a self-contained lecture (more on Jing in Chapter 7).

**Tapping into pre-existing content**

The wealth of free, open content at our fingertips in the Internet age is astounding. One only needs to know how to find and briefly assess digital materials. Many teachers use some Internet content or other digital materials in teaching – which means they’re already on their way to delivering a flipped assignment. We’ll go over a lot of resources like this in Chapters 12 - 14.

**Trying your hand at a video lecture**

There are plenty of good free screencasting tools available on the Internet – all you need is a webcam or a tablet and you can take a shot at creating a video. Of course, even free tools still need to be learned, so it will require some investment in time, and this workbook will help you get started.

**Delivering content**

It is necessary for your students to have access to devices that will allow them to consume the learning content you create. Whether they are to watch, listen, or read materials, they need to be able to get to the content they need. Common methods for delivering content include the use of some sort of Internet applications, or Learning Management Systems for schools that have them. The Internet services might be free or paid, and they could be something you do individually or a service that your school provides. If you have to do this yourself, there are plenty of relatively easy ways to distribute content. We will cover this topic in more depth in Chapter 11.
**What Will I do With Class Time?**

This is a major consideration, and where the strongest benefits of the flip will come into play. You will need to plan for a more interactive type of classroom time.

- Students can certainly work on traditional ‘homework’ type problems, but they will also now have you available to assist. Another possibility is having students help each other – this can often be a benefit to both the student who is struggling and the student who ‘gets it’ and is willing to help others one learn. Students can also work in small groups to help each other if that works in your particular classroom situation.

- Developing more hands-on, constructive activities can open the classroom to a much richer experience for all your students. You might arrange debates, have students create and develop presentations and demonstrations, research and review web resources focused on the topics you are covering in a collaborative classroom environment, design collaborative projects that groups can undertake together, and so on.

- Some class sessions can offer a set of choices to students based on their comfort level with the material being covered – for example, maybe those who are struggling or just want a little extra reinforcement can work with you (the teacher) while those who are really comfortable with the material can go to the library and work alone or in teams on upcoming lessons, or perhaps on an extra project for advanced credit.

This vital element of flipped instruction will be the focus of Chapter 5.

**Preparing Students for The Flip**

It is vital that teachers prepare students for this alternative teaching and learning approach by discussing it and setting well-defined expectations. In his article, “My Flipping Failure,” Chemistry Professor Richard Thornley shared how he struggled in his initial attempts at the flip. He assumed it would be easy, in part because he had created hundreds of YouTube videos that chemistry students across the world were consuming en masse. But his assumption that students would ‘get’ the flip
and be comfortable with it, and his failure to really prepare for how he would use
class time, were key factors in his early efforts falling short of expectations.
(Thornley, 2013)

Before we jump into the hands-on elements of the flip, we should get further
grounded in why it makes sense and how other teachers are using it, which is the
focus of the next chapter.
EXERCISE #1 – Start Planning How You Will Use The Flip

For your first exercise, use what you’ve learned so far to write up some initial thoughts about how you can use the flip in your classroom, as well as your key questions at this point. Be sure to consider the following:

- What content will students consume outside of the classroom?
- Will you try to use or transform content you already have?
- Will you leverage some of the great content already available on the Internet?
- How will you spend class time once students have taken in the assigned learning materials prior to class?

There is a web page on EmergingEdTech.com where people can submit each completed exercise, and view the submissions of others, for a more interactive experience!

YOU CAN SUBMIT YOUR COMPLETED EXERCISE #1 HERE:
Chapter 2: Why it works

There are a lot of ‘common sense’ reasons why this approach to instruction can work well for the student, and for the teacher, but there are also reasons based in learning science. In this chapter, we will examine some of these, with the help of some teachers and education thought leaders who have published books and articles on the subject.

Sal Khan (Khan Academy)

I don’t remember the specific place I first saw the phrase “flipped classroom,” but I do remember that my initial introduction to the subject came about when I first learned of Salman Khan’s (at the time) fledgling Khan Academy in early 2010. I wrote this post in March 2010: “The Khan Academy (offering 1100+ free tutorial videos).” Today the Khan Academy goes well beyond the flipped classroom, as does Khan’s vision for education. Sal Khan has been featured on 60 Minutes, and the Khan Academy is supported by major grants from the likes of the Bill and Melinda Gates Foundation and others. A lot of people would agree that the non-profit Khan Academy is one of the best-positioned undertakings on the planet to deliver on the promise of technology in education.

In One World School House, Khan’s new book about the Khan Academy and his re-imagined vision for education, he writes about how the long-standing modern model for education doesn’t fit our changing needs:

“It’s a fundamentally passive way of learning while the world requires more and more active processing of information. The old model is based on pushing students together in age-group batches with one-pace-fits-all curricula and hoping they pick up something along the way.” (Khan, One World Schoolhouse: Education Reinvented, 2012)

Flipped teaching enables educators to create delivery differentiation and personalization, and to strive for deeper learning and less disenfranchised students, which are big strides forward in addressing the challenges inherent in the existing model.

To learn more about Salman Khan and the Khan Academy, check out this TED talk he gave in March 2011: “Let's use video to reinvent education.”
‘Reasons to Flip’ from Sams and Bergmann

I first came across John Bergmann’s work when I wrote “7 Stories From Educators About Teaching In The Flipped Classroom” in the fall of 2011. What I did not know at that time was that he had won the Presidential Award for Excellence for Math and Science Teaching in 2002 and was named semifinalist for the Colorado Teacher of the Year in 2010. Aaron Sams also received the Presidential Award for Excellence in Math and Science Teaching, in 2009.

Together, Aaron and John recently created the flippedclassroom.org social network, and in 2012 they published, “Flip Your Classroom: Reach Every Student in Every Class Every Day.” These guys are flipped classroom rock stars (although I think they might cringe at that label!)

Chapter 3 of their excellent book is titled “Why You Should Flip Your Classroom” and it offers 15 great reasons why you should ‘flip it!’, with thorough explanations accompanying each reason. Below I provide my own brief interpretation of some of the reasons they cite. I think these give a solid perspective on why the flip works for students, and I refer readers to their outstanding book to learn more. (Jon Bergmann A. S., 2012)

Flipping helps busy students

Today’s students are busy, and being able to consume learning content on demand is a big help, especially when they miss class for extracurricular events. Colleges are looking for those extracurricular activities, and it’s a shame if a student has to choose between missing lectures or participating in activities to which they’ve previously committed – and with the flip, they don’t have to! Students can even work ahead when they know they will be losing class time.

Flipping helps struggling students

Many students are absolutely thrilled to be able to pause, rewind, and replay lecture videos and absorb new content at a pace that works best for them. Moreover, the time that is freed up in class can now be devoted more directly to each student as he or she needs it.
Flipping helps students of all abilities excel

The flip delivers benefits to students across the full spectrum of abilities – from the students who struggle to absorb material as they frantically copy down notes, to the student who is ahead of the curve and gets bored. Being able to consume and reply to learning content on demand and to enjoy increased access to the teacher in the classroom can benefit everyone!

Flipping increases student-teacher interaction

Many teachers who implement the flip will emphasize that the ultimate benefit is the time they get to spend with students in class, the nature of which changes greatly under this model. Now teachers can spend one-on-one time with students, or create groups that are struggling with the same content and give them a mini-lecture or demonstration. The bottom line is that you will have more time than ever to interact with your students, rather than just “performing” your lecture.

Flipping allows teachers to know their students better

“We have always believed that a good teacher builds relationships with students.” If you are spending more time with your students, you are going to know them better and better understand who is struggling with what, and who is mastering learning outcomes quickly and can benefit from some additional or more challenging work. You are also more likely to get insights into these students’ lives that you wouldn’t get otherwise, and this can create opportunities to recognize issues they may need help with, or to recognize and follow up on potential that you might otherwise not have had the opportunity to pick up on.

Flipping allows for real differentiation

Students learn at different rates. While watching class lectures, students who understand a given topic can speed up the video, while those who are struggling can replay the challenging sections. In class, students who are having a hard time grasping a specific topic will have an opportunity to work closely with the teacher. An instructor can decrease the assigned work on a topic that the student has shown
understanding of, to free up more time to get clear on the topics they find harder to grasp. Students who master the materials can move ahead as they are ready.

**Flipping changes classroom management**

“When we flipped the classroom, we discovered something amazing. Because we were not just standing and talking at kids, many of the classroom management problems evaporated.” Students that create disturbances by acting out in front of other students find that they no longer have an audience, since other students are busy with hands-on activities or are working in small groups. Even better, some of the students who used to misbehave out of boredom are too busy and too engaged in their learning to do so!

**Flipping changes the way we talk to parents**

The dynamics of conversations with parents often changes in the flipped classroom as well. The conversation can move beyond issues like, “is my child behaving in class” to a more meaningful discussion about learning. Teachers are able to describe how a student is succeeding, and can better explain why a student is struggling with a particular topic. There are many reasons why a student may be struggling, and focusing on these areas in a dialogue with the parent can be far more productive than a discussion of why a child won’t do assigned homework, or won’t sit still in class.

**“Active Skills Learning” (Kieran Mathieson)**

When I first wrote about the Flipped Classroom in early 2011, instructor Kieran Mathieson reached out to share the work he had been doing and sharing at his site Coredogs.com (a reference to his focus on teaching the core of web tech, and his love of canines). Kieran is an Associate Professor at Oakland University and he coined the phrase “Active Skills Learning” in writing about his work with the flipped classroom. His writing helped to show how the flip brings together various learning concepts. Many of these ideas have been around for a while and are part of project-based learning approaches and other learning approaches. Flipped learning isn’t an entirely new idea – in many ways, it’s a combination and reimagining of various existing ideas and technologies. (Walsh, Succeeding With Reverse Instruction – One Instructor’s Inspired Approach, 2011)
Professor Mathieson’s model incorporates the use of a good online textbook, with lots of exercises. Students work through the textbook individually. They submit exercise solutions and he provides formative feedback. Students can resubmit exercises until they get them right. Class still meets, but for maybe an hour per week rather than three. During class, students are provided with an exercise, and he walks around the computer lab watching and helping out as needed.

Mathieson may have gone above and beyond by designing his own textbook, but that isn’t essential to flipping the classroom. It’s the underlying concepts that ultimately enable the flip as an impactful approach to teaching. When students can spend more time applying what they learn and focus on outcomes, they will often be more engaged and more successful at learning.

While these ideas fit well into traditional ‘hands-on’ applied subjects like math, science, music, or even physical education, they can also be applied to a majority of academic subjects:

**Outcome-based learning.** Flipped teaching provides many opportunities to focus on skills and learning outcomes. Limit the desired outcomes or skills to those that matter the most and try to focus the course on those outcomes. Limit or exclude content that is irrelevant.

**Deep learning.** Class time provides lots of opportunities for students to learn how to solve problems and to apply what they are learning. Fewer concepts and more applied learning can help drive home essential concepts in a deeper, more long-term way. Practice, practice, practice.

**Formative feedback.** Again, more personalized class time can provide plenty of opportunity to provide lots of formative feedback.

**Metacognition.** Here we use the term broadly, encompassing any thought or emotion about the learning process. A good course and good learning content should address common metacognitive issues, such as:

- “Why do I need to know this?”
- “It’s too hard! I’ll never get it, no matter how much I try!”
- “There’s a lot of details to know. How can I get it all?”

Having more class time available can also allow for more time addressing these questions.

**Active Skill Learning**

Research in the learning sciences suggests that the traditional approach has significant limitations as a model. An approach combining features of deep learning, outcome-based learning, and active learning can be much more effective. Call it “Active Skill Learning” (ASL). ASL goes hand-in-hand with flipped teaching. (Walsh, Reverse Instruction – A Tale Of Two Students and Active Skill Learning, 2011)

**ASL makes heavy use of formative feedback:** Students complete exercises or participate in class activities every week. Instructors assess the work, and ask for improvements. Students can change their solutions or approaches and resubmit work, or repeat a demonstration or presentation that they previously conducted. The cycle can continue until the grader is satisfied, and the student then gets a completion badge or other grade or ‘award’ for the exercise.

**Combining Summative And Formative Learning:** Researchers often contrast “summative” and “formative” learning assessment and feedback. Summative feedback is separate from learning, with the goal of measuring how much students have learned in the recent past, while formative assessment involves students submitting work and getting feedback about what could be improved. Students can correct and resubmit their work as needed, to help truly internalize concepts. Summative and formative feedback work best when used together., with formative feedback to help learning and summative measures to assess student achievement. However, many professors only give summative feedback.

The flipped classroom is a great model in which to employ Active Skill Learning, enabling teachers to leverage these powerful learning concepts as they see fit in their classroom.

Mathieson’s article, “A Tale Of Two Students” is a great place to go to learn more about his approach, and to see the flip from the amusing perspective of a
couple of fictional students (even though they’re fictional, their voices will probably sound familiar). The article also further discusses Deep Learning and Metacognition in the context of ASL and reverse instruction, if you wish to explore these topics in greater depth (Mathieson, 2011)
The Learning Science

In her digital book, “The Flipped Classroom: The Full Picture,” Dr. Jackie Gerstein looks at some of the learning science behind the flip, illustrating the technique with a cycle of learning perspective that helps to illuminate why the flip makes sense. (Gerstein, 2012)

Dr. Gerstein illustrates the Flipped Classroom as a cycle that moves effectively through these four stages:

**Experiential Engagement:** This is the initial phase, during which the teacher introduces a new learning topic and seeks to engage the learner with the material and allow students to experience it in some way.

**Concept Exploration:** In this stage, students further explore the topic independently, on their own time (which requires them to be more responsible for their learning). Students may consume video or audio content or some other presentation materials, explore content-rich web sites, use a computer-based interactive, or possibly even participate in some sort of online collaborative activity.

**Meaning Making:** Here, some sort of assigned activity helps to enable the absorption of the content while also providing an opportunity to encourage the completion of required work (through some sort of grading of this activity). Approaches to this phase may include requiring the completion of notes or outlines; providing written or otherwise captured responses to specific questions; quizzes; the writing of a reflective paragraph of a discussion post, etc.

**Demonstration and Application:** In this closing phase of the cycle, students demonstrate their understanding of the material through presentations, projects, and the like.

Not all flipped classrooms will leverage all of these techniques with every learning content section, but these elements can be used as needed throughout learning cycles.
Chapter 3: Succeeding with the Flip – Sharing Lessons Learned

When I first stumbled across the concept of the flip in 2011 and did some reading and research and wrote an article about it for EmergingEdTech.com, I was really intrigued. Blogging is such a fun way to learn about a new education technology idea – I do some research, share it, and often, readers will then provide insights, ideas, and feedback through post comments. In the meanwhile, having learned more about the topic to write the article, I have a sharper eye out for related news, which frequently leads to new insights. The more I learned about ‘the flip’, the more the idea made sense, and gradually, I became a staunch advocate of the concept.

Following are edited excerpts from my original article, “7 Stories From Educators About Teaching In The Flipped Classroom,” which came from my first interest in the idea. In these excerpts, educators share experiences and insights they gleaned while putting the flip in place in their classrooms and schools. This is a great way to learn about what other teachers have done in their implementations, and the ‘lessons learned’ that they’ve shared. (Walsh, 7 Stories From Educators About Teaching In The Flipped Classroom, 2011)

John Sowash - “Flip your classroom through reverse instruction”

This article begins with the question, “Have you ever experienced the unique and rare moment when, after doing something the same way for year and years, you have an epiphany and wonder, ‘why am I doing it this way?’ Most of the time the answer is tradition, that's the way we've always done it.” (Sowash, Flip your classroom through reverse instruction, 2010)

John Sowash was also inspired by the work of Aaron Sams and Jonathan Bergman, having come across an article they wrote about the flip in which they discussed their troubles with students leaving class early due to sports events or for other reasons, missing lectures — and important information. These students were often unable to complete homework that was assigned in those missed classes.

To help address these challenges, Sams and Bergman began recording lectures and posting them on iTunes. Students would then downloaded the lectures to their computers and mobile devices and watch them at home, at their convenience. Back
in the classroom, Sams and Bergmann spent more time interacting with students individually as they worked through "homework" assignments. When a student got stuck, they were there to help. This flip of the classroom made it more flexible and dynamic, matching it with the needs of the students.

Sowash explains how he began implementing reverse instruction in his high school Anatomy & Physiology class. He had taught the course three times and lectured a good deal, and had already created PowerPoint presentations. He undertook the labor-intensive process of putting his PowerPoint slides on the web for students to view, and he created some screencasts with voice narration and posted some simple Google Docs presentations, all of which he shared on a classroom wiki. For each unit, he provided a lecture notes outline and required the students to fill them out. This freed up class time and enabled Sowash to incorporate more hands-on activities, thereby helping students better understand confusing and challenging concepts.

Sowash shares some important lessons learned, which I share here in these edited excerpts:

- Clearly and carefully explain the purpose of reverse instruction to students. This is a radical idea for students as well as teachers. Sowash actually went so far as to create this "commercial", which he had students view at the start of the year: [http://youtu.be/95UTqW8C2u4](http://youtu.be/95UTqW8C2u4).
- Stress the importance of the lectures. Students need to understand that they cannot "zone out" while watching the video lectures – they have to actively engage and complete the lecture notes outline. They should also write down questions and strive to fit the new information in with what they already know.
- Hold students accountable to the lectures. A credit/no credit lecture notes check at the beginning of each class period helps to ensure that students are actually viewing the lectures (the following chapter contains more ideas about how to ensure engagement with the materials).
- Beware of technical problems. YouTube is a good way to share videos, but many schools block YouTube. This is just one of the potential obstacles that you may need to anticipate. If some students don't have internet access
at home or elsewhere, you may need to consider loading your lectures onto jump drives or other devices or burning them to a CD.

- When possible, use Google Docs (now Google Drive) or another centralized source for distributing content. Many instructors will frequently update and improve your lectures and presentations; making sure that the most up-to-date copy is available for students can become a challenge. Using a centralized delivery approach (rather than sending things out via email for example) can limit confusion and save time.

- Once you've freed up class time, you need to plan to use it productively. This can be a challenge, particularly when you are just getting started. After spending a good deal of time and energy developing online content lectures, it can take a while to also plan and develop new interactive classroom activities (see Chapter 5 for more on this).

Shelley Wright - “The Flip: Why I Love It, How I Use It”

In this article, instructor Shelley Wright explains, “For me, inquiry learning is where it’s at. I don’t believe in assigning videos every night as a substitute for my own lecturing. To me, that’s simply the traditional classroom rearranged, not flipped.” She offers a number of ways she likes to use the flip. (Wright, 2011)

“I use the flip when my students need to absorb a few chunks of new information to continue learning. I don’t use it to front-load information at the beginning of a unit. I think that can rob students of the experience of authentically building knowledge and skills as they encounter new concepts.”

The flip can allow students who are struggling with new material to pause, rewind, and repeat material that is challenging them. “I’ve had students who are ecstatic because they can learn at their own pace at home. During class time I’m able to interact with every student, and target those who are really struggling with extra time, which is not something that happened when I taught in a more traditional way.”

She also uses the flip after spending class time learning through inquiry. “I might assign a video that pulls together all that we’ve learned. Does every student...
need to watch it? Not necessarily. Students who thoroughly understand a concept can decide that for themselves.” Those who are still struggling with the ideas after we’ve examined them in class can watch the video, take notes, and see if they can pull it all together. In the past she might have referred these students to a summary in the textbook for review, but they’re much more likely to watch and benefit from a good visual demonstration.

She notes that, “none of this is passive learning.” Students are required to respond to the content. Videos are posted on a class wiki, which now serves as a digital textbook. Students must respond to learning content with either a blog post sharing their thoughts, or through interaction with their peers in a wiki discussion tab.

Richard Thornley – “My Flipping Failure”

Richard Thornley is a popular chemistry teacher on YouTube, where his hundreds of videos have been viewed tens of thousands of times. “Some teachers emailed me that they were using my videos to flip the classroom with success, so I thought I would give it a try.” He assumed his students would adapt easily. It wasn’t as easy he figured it would be. (Thornley, 2013)

The following is excerpted from Richard’s guest post on EmergingEdTech:

A Hard Sell

The first lesson arrived and at most two students knew what a flipped classroom was and none of them was enthused. They were ready to learn from the teacher in a classroom and it was a hard sell. I am actually a decent teacher, but I was not going to teach them? I may even have said “Trust me” at one stage.

The more able students careened through the work at double quick speed but did not seem to understand that they can move on to the next section with no supervision. It proved impossible for me to break their habit of “returning to teacher” for the next part. I was a new teacher for most of them, doing something new, and in hindsight this is obvious.
I had no time to sit with the kids that required help – my attention was always split ten ways. Some kids found the work boring and two dimensional. There was also nowhere peaceful for the kids to do the quizzes – and I would forget they were doing these and thus not check for cheating. It did not go well.

Lessons Learned

I gave a presentation to the entire faculty on the debacle, which was greeted by, “Why don’t more people share their failures?” and a tacit agreement to do so. As yet only I have stuck my head above the parapet – I told the unfortunate students that this was my penance. I apologized to individual parents on parents’ day.

Other teachers here had success with flipping, but on closer inspection they had only done a couple of lessons - a cop-out I thought. But I had clearly bitten off more that I could chew – I should have started smaller, like them. I am tempted to try it again next year with the major modification of self-graded quizzes that do not count and crystal clear explanation of the process.

All’s well that ends well and everything worked itself out and no harm was done. There is plenty of evidence that the flipped classroom works, but my advice is to start small scale and with kids where a relationship already exists.

Jonathan Martin - Advancing the Flip: Developments in Reverse Instruction

Principal Martin shares a lot of great resources and references in this article on ConnectedPrinciples.com. He also offers insights into how teachers in his own school are using the flip.

“Dr. Scott Morris, our Chemistry instructor, uses reverse instruction extensively. He shares both podcast lectures and narrated powerpoints with students, and lectures in class much more sparingly than he used to: ’much of lecturing now is outline and reiterating the problems of the day and how to approach them.’ His flip teaching employs the technology of Webassign to assess students in how well they have learned the material in the online lectures, and he says students love getting that ’green check mark‘ when
they get the Webassign problem correct. Now, most of his class time is spent presenting challenging chemistry problems and watching as students work in groups.

Dr. Morris advises other teachers considering this approach to not sweat the details. “The key is to not get too bent out of shape about production quality; just bang it out. It is more important to get it out there and online than that it be perfect.” He works to keep his lectures to 15-20 minutes per segment, but sometimes assigns two segments. His students also find Khan Academy a great second resource for their learning; he reports how much stress has been alleviated by this practice when students have to miss class due to illness, travel or sports.” (Martin, 2011)

A key objective of this first section of the book has been to give a good, rounded picture of the flip. In the first 3 chapters of this book, we’ve read about a lot of teachers’ experiences with the flip. I hope you’re starting to get a good feel for how this might work in your classroom. In Chapter 5 we’ll wrap up Section I with a look at how to use the class time you will free up. In Section II of the book, we’ll focus on the learning content you need to start flipping. But before we move into those areas, let’s take a moment to discuss techniques to help ensure that students are consuming the learning content they are provided.
Chapter 4: Ways to Help Ensure That Students Consume Content

In one of the first presentations I did about the flipped class, a teacher asked this question: “I already struggle getting students to do required reading, how will I get them to consume learning content in other formats?” Sometimes the conversion to video content and other media alone are enough to encourage today’s students to do their ‘homework’, but there are also plenty of other good ways to help ensure that they consume and really focus on the materials they are assigned.

Here are a few approaches:

Require a Notes Outline

Require students to create a notes outline from scratch. By associating some sort of grading like a credit/no-credit grade or grade with specific points associated, you can significantly enhance your students’ appreciation of the importance of consuming the educational content you have provided.

Provide a “fill in the blanks” notes outline that must be handed in for credit. It can be as simple or complex as you wish. It could be mostly completed, requiring students to just fill in words and phrases they must pick up from watching the lecture content, or it could be more of a ‘shell’ or template that requires completion.

Start each class with questions, discussions, or pop quizzes

Starting class sessions with a discussion of the learning content, and randomly selecting students to comment, can help to improve the chances of fuller engagement when they are watching, reading, or listening to the assigned material. This alone can motivate many students to be on their toes and prepared (and not be embarrassed if called on).

Use ‘pop quizzes’ – if students expect a possible graded quiz from time to time related to the material, many will be more inclined to do their ‘homework’.
If some content is extra important (like foundational material that future lessons will be built on), you may want to go right ahead and develop a quiz and tell students up front that there will be a test based on that night’s material.

**A few more approaches and tips**

... to help ensure that students consume the content and strive to learn it.

**Easter Eggs:** Hide “easter eggs” in the content and let students know that there will extra credit awarded the next day if they are called on to reveal the hidden nuggets they’ve discovered, or that there may be a pop quiz focused on the surprises hidden in the material.

**Discussion Forums:** Require students to post a brief reflective statement, and read and respond to one or more other student’s comments (this is a common technique in online classes).

**Reflective Blogging:** Maybe not for every assignment, perhaps just one a week – but writing a reflective commentary can be a great way to further learning objectives and ensure increased engagement in the material.

**Partner students for review and accountability:** Requiring students to review the material with another student and share responsibility for a ‘team’ grade may compel them to be accountable. Similarly, requiring each partner to complete part of an outline or expecting students to answer questions as a team can enhance follow through. Of course, this can also backfire when one partner consistently fails to hold up his or her end of the bargain, and that possibility needs to be taken into consideration (for example, repeated poor performance by one team member may lead to his or her pairing with another poor performer). Take into consideration the maturity and age level of your students (for example, this can work well in higher education, but may be less productive in a middle school setting).

You may want to select from all of these different approaches and vary them from class to class or week to week, to help keep things interesting.
Last, but certainly not least, strive to use and/or create good content, and make the material compelling so your students will want to watch and learn!
EXERCISE #2 – Encouraging and Validating Content Consumption

You’ve just learned about a host of methods for encouraging students to consume the content that they are assigned. What will you do to ensure that students are doing what they need to do outside of the classroom, in order to be prepared to engage inside the classroom in a new way?

Will you have points associated with working through the online material in some way? Will there be a required activity associated with content consumption? Or do you feel that being prepared to engage in discussions and hands-on activities based on the flipped content will be enough to encourage students not to skip any material outside of class?

There is a web page on EmergingEdTech.com where people can submit each completed exercise, and view the submissions of others, for a more interactive experience!

YOU CAN SUBMIT YOUR COMPLETED EXERCISE #2 HERE:  
Chapter 5: So How do I use the Class Time I’ve Freed up?

Most teachers who have flipped their classrooms would probably agree that the single greatest benefit of flipping the classroom is the way it changes what you can do with regular class time. You are now free to differentiate and personalize the experience your students have in class, and to leverage it for problem solving, applied learning, in-depth discussions, and any other approaches that help students apply and explore the topics you are teaching. But this means devoting some time to re-thinking and re-designing how class time is used.

Here’s a bunch of ideas and suggestions to consider for how you will use class time once you start delivering learning content offline. With some forethought, these can work in almost any academic discipline.

• Start class with discussion and review of the content that was consumed the prior evening. This is an excellent opportunity to review, and to assess areas that need further reinforcement.
• Students can certainly work on traditional ‘homework’ type problems, but they will now have you available to assist. You can also consider the possibility of letting students assist each other – this can often be a benefit to both the student who is struggling and the student who ‘gets it’ and is willing to help others learn.
• All students can work in small groups to help each other, if that works in your classroom situation.
• Developing more hands-on, constructivist activities can open the classroom to a much richer experience for all. For example …
  - Have students create and develop presentations and demonstrations
  - Research and review web resources focused on the topics you are covering in a collaborative classroom environment
  - Have a debate!
  - Design collaborative projects that groups can undertake together
• Some class sessions can offer a set of choices to students based on their comfort level with the material being covered – for example, maybe those who are struggling or just want a little extra reinforcement can work with you, while those who are really comfortable with the material can go to a corner of the
classroom, or perhaps to the library, and work alone or in teams on upcoming lessons (or perhaps on an extra project for advanced credit).

- How about letting some students create their own teaching/learning content? What better way to confirm their mastery of the material (or even just reinforce it) than to let students take a shot at creating materials that current or future students can learn from. Advanced students may be able to try this on their own, and students who are not as far along can work on these tasks in a group setting.

*Next, let’s examine ways in which class time can be used in specific academic subject areas:*

**Social Science, Humanities (and a wide variety of other types of classes)**

Class time in these types of classes can be used in many different ways in the flipped model - for example, you might discuss current events (reflecting on the previous night’s video), debate, give speeches, conduct pro se court. And of course, students can write, and spend time analyzing and discussing each other’s writing through peer review.

For example, in her blog, community college instructor Carrie discusses how, in a Child Development class, she provided students with two video clips about the Teacher Research Project (‘data collection’ and ‘Teacher Research Showcase’) and presentation created with Prezi for one week’s lesson. During the following class time students worked on quizzes, and she spent some time typing feedback on their quizzes from the prior week. As students finished quizzes and moved on to additional work, she circulated throughout the room. Here are some of the things she worked on with her students. (Nepstad, How we spent class time this week, 2013)

- A small group of students were concerned that they were not writing their field notes appropriately. She talked with them about how the notes should look and told them what is most important to include.

- Students looked at examples from previous Observation and Interpretation papers, and talked about their strengths and weaknesses.
- Students paired up to discuss with each other how they might interpret each other’s observations. “This was an effective exercise as students were giving each other good advice – I know this because I was listening!”

- She helped students with computer issues like signing up for an e-newsletter, saving documents to Dropbox, and navigating Prezi.

- She offered to read student narratives and provide direct feedback; several students took her up on this offer.

  She explains, “It was very busy during the entire 3.5 hour class session. Each student was busy with work the whole time. In fact, I had to urge them to take a break!”

**Language Arts**

In addition to the ideas above, another way to use class time in a language arts course is to do in-depth reviews of literature that is being reviewed. Students can read selections, and the whole class can discuss the piece, examining perspective, writing style, antagonist/protagonist, dramatic structure, and so on.

**Foreign Languages**

Language courses are perfect for the flip! Think about how often you hear that the best way to learn a foreign language is to get immersed in it and speak the language. So why aren’t Language teachers providing the usual lecture material (vocabulary, tenses, genders, etc.) in a ‘packaged’ format for consumption and review outside of the classroom, freeing up class time for dialogue and discussion? It can be so difficult to find time in day-to-day life for most students to speak a foreign language – what better time than during language class?

**Physical Education**

Is the flipped model being used in Phys Ed classes? Yes, it is! Phys Ed teachers often don’t really appreciate the time they have to spend teaching concepts, since they can end up not having enough time for the physical activities. Flipped classroom techniques are perfect here, where students can learn the concept outside
of the classroom, and then apply it during class time, with the instructor’s hands-on help.

**Math**

In Sams and Bergmann’s Flip Your Classroom book, they explain how “flipped math classes are becoming laboratories of computational thinking, inquiry, and connectedness with other STEM areas.” In the flipped classroom, math teachers have an unprecedented opportunity to engage with students and explore mathematical concepts. This kind of hands-on exploration and application can make a big difference in getting through to students and helping them “get it.” (Jon Bergmann A. S., 2012)

**Science Classes**

In this article on NJ Education Blog, a science teacher shares, “Using some ideas I learned about the flipped classroom I assigned my classes to watch a video about the five layers beneath the Earth. The video explained the lithosphere, asthenosphere, mesosphere, outer and inner cores. Once the children watched the video at home I would reinforce that new knowledge with a hands-on activity designed to enrich their homework and check for understanding.” In class, they made clay models of the earth. Once the models were completed, he sliced them in half with a wire and asked students to identify each layer. Over 90% of the students were able to explain each layer. “The excitement on the students’ faces when I separated their models in two was one of my most gratifying moments in my career. They couldn’t wait to share what they learned through the video and activity.” This is a good example of how the flip can be used in a science class. (Gambuti, 2013)
**EXERCISE #3 – Planning How to Use Class Time**

How will you spend class time once students have taken in the assigned learning materials prior to class? This is a very important consideration. Remember, you can start small and scale up, so you might want to consider a phased-in approach. If you are going to introduce the flip gradually, what portion of content might you flip first, and how will you then use the class time that has been freed up by moving this content delivery outside of the class? How might you then scale up, over what sort of time frame?

There is a web page on EmergingEdTech.com where people can submit each completed exercise, and view the submissions of others, for a more interactive experience!

YOU CAN SUBMIT YOUR COMPLETED EXERCISE #3 HERE:
Section Intro

Some more good news about the flip is that it’s not too hard to try it out! You can use content that you already have, or find some new and different content, and just rethink a couple days of class time and ‘homework’.

Here are a few ways to get started:

- Do you use PowerPoint slides? Adding voice annotation to PowerPoint slides is really pretty easy, and a great way to take this kind of content to the next level and make it stand alone.

- If you have a video or movie you might normally use in class to introduce or reinforce course content, and students can watch it at home there’s an opportunity to try the flip. Assign it as homework and use class time for dialogue and a hands-on assignment.

- There’s a lot of great learning content available on the web today. If you haven’t searched out content relevant to your subject area in a while, take a little time to browse the internet. Search for things like “education videos about the middle ages” or “educational content for biology” or something along those lines, and you may be surprised at some of the stuff you find.

- Try a screen cast. Capture what displays and plays on your computer and add a voiceover to it. There are plenty of good free apps out there that you can use to give this a try.

Let’s further explore some approaches to getting started creating your own flipped content.
Chapter 6: Start small – Flip One Lecture

There are many ways to test the waters by flipping just a class or two, or maybe a full week of lessons to give you a more in-depth experience. This will provide the opportunity to learn ways to approach this technique and give you some practical hands-on experience with it. Then you can consider how this might fit into your longer-term approach.

First, here are a few ideas about how you can give flipping a try. We’ll get into a couple of these here in this chapter, and some are examined more in-depth in upcoming chapters.

Voiceover PowerPoint: Add voiceover to a PowerPoint slide deck to create a stand-alone version of the lecture you normally deliver around one class’s presentation materials. The steps for doing this are provided below. Deliver that material as an evening’s homework. Consider providing a simple fill-in-the blank notes outline for students to complete and return to reinforce the importance of their actually doing the assignment. Then plan to use the class time to get more hands-on with the assignment that you used to give after the slides were presented in class. This takes some forethought, because you obviously have to juggle your thinking to flip even just one lecture.

Tools (like TED-Ed) to flip a video of your choosing: There are a growing number of tools and apps that let you take an existing vide, add some of your own commentary, make a simple quiz, and deliver this package in a private format. We explore some of these later in this chapter.

Use Screencast-O-Matic or Jing to screencast some content: Don’t be overly intimidated by this technology. There are plenty of great free tools online that let you do this. All you need is a webcam and some time and willingness to learn and experiment. It may be a little challenging to figure things out and going through the trial and error necessary to improve on the results, but you’ll probably be surprised by what you can achieve once you get through the process the first time. What you really need most is some time, and the willingness to experiment and learn.
Tap into the wealth of existing content on the Internet (including expert lectures): There are so many good sources of lecture content already available online today. Chapters 12 and 13 are devoted to this.

Use non-video resources: While screencasts are a highly popular approach to creating flipped content, they are by no means the only approach. Podcasts have been widely used for years and continue to be a popular method for creating content. Sound files can provide excellent content for music appreciation or music theory courses. Collections of images, often with accompanying text, can be a very good way to deliver digital content, particularly for certain types of courses, such as Art History, Geography, various Medical Science topics, and much more.

Build richer content in your LMS or a Wiki: Most of today’s Learning Management Systems make it easy to combine media in various formats in a centralized class site. For schools that don’t have an LMS/CMS, sites like Edmodo and WizIQ are growing in popularity. If you have to tackle this on your own, Wikis can be a great way for ‘novice’ techies to create robust web pages. Tools like Wikispaces make it pretty easy to combine images, text, links, videos and more into web pages to create layered sites, and you can then control access to the site by inviting only those who you choose to invite.

Let’s take a closer look at the first two suggested approaches from above (the other tools and techniques are discuss further in upcoming chapters).

Voiceover PowerPoint

This simple technique is an easy way to turn those PowerPoint Slides into flipped course content.

The presentation tool in Microsoft Office is one of the most widely used slide presentation applications available today. While PowerPoint has plenty of detractors and is often the butt of jokes (“PowerPoint has no power and no point …” - you’ve probably heard a few like this), there is no denying that slides produced with this application are central to countless educational lectures across the world every school day, and they can be an excellent teaching resource.
PowerPoint is a piece of software that is pretty easy to use, but at the same time has many features that can elevate your presentations. One such function is the easy ability to supplement a presentation with voiceover (or other audio). Adding your voice to PowerPoint slides is simple to accomplish, and doing so can turn a presentation from a plain set of slides into a self-contained instructional asset that stands alone and can be used by students to self-teach. This can be a great way to test the waters with flipped content delivery.

Below is a step-by-step guide to adding voiceover to PowerPoint slides (these steps and the video are based on PowerPoint 2007 – instructions for doing this with PowerPoint 2010 can be found here: http://office.microsoft.com/en-us/powerpoint-help/record-and-add-narration-and-timings-to-a-slide-show-HA010338313.aspx)

(Microsoft):

1. **Equipment** - When setting up for your voiceover in PowerPoint, make sure you have the right equipment and that it’s set up correctly. You’ll need a microphone to record your voice, and a working sound-card or integrated audio (which most computers now have built-in).

2. **New Folder and Presentation File** - Create a new folder on your computer and name it something you’ll recognize. Create your PowerPoint presentation (or open an existing one) and save it to this folder. As you record narration, sound files will get created as part of the presentation, and having them all in one folder will help you manage them. If you are spending considerable time on the presentation, you would be well advised to make an occasional copy of this folder for back-up, in case you run into any problems.

3. ‘**Record Narration**’ tool - Open PowerPoint and find the “Slideshow” command in the top bar. Once you click on “Slideshow,” a menu will appear – select “Record Narration.”

4. **Set Sound Levels and Properties** - In the “Record Narration” dialog box that appears after clicking the previous command, click the “Select Microphone Level” button and use the slider to adjust the microphone’s level to ensure that your microphone is recording at optimal sound levels. You want the level to stay in the green range most of the time, and hitting the yellow range in the indicator at
louder points is fine; you just don’t want it to peak in the red range on the indicator, as that’s too loud. Once the recording levels are good, click the “OK” button to go back to the “Record Narration” box.

You may want to click on the “Change Quality” button (the default settings are pretty low resolution/low quality). Select the drop-down window next to the “Attributes” and choose “44.100kHz, 16 bit, Mono.” This is one of the most used and most efficient audio levels for microphone recording. Clicking “OK” from this window will close it and you should be looking at the “Record Narration” box again.

5. Recording – To record, simply click “Record Narration” on the Slide Show menu. In the bottom left corner of the “Record Narration” window is a check box for “Link Narrations In” – click this box to check it on (you will need to do this each time you start recording a section of voiceover). You can build out your voiceover gradually from the beginning (in other words, you don’t need to do it all in one take). As you record new sections, you will be prompted each time as to whether you wish to start on the first slide or on the current slide. Note that if you want to record over a section you are not happy with, just record over it and your new content will replace your old content (as long as you save it). Once you are done recording a part, hit the “Escape” key and PowerPoint will ask you if you want to save the timings on the slides. Always choose yes. As you complete each section of narration, save your PowerPoint presentation. Once you have completed part or all of your narration, play your presentation to watch and hear it. Pretty cool, right?! 

Voiceover audio can be a very effective part of your presentation process. Voiceover also allows you to turn your existing presentations into self-contained flipped content. There are endless possibilities to using voiceover in PowerPoint — you’re only limited by your own imagination!
Tools That Let You ‘Flip’ A Video

‘Flip’ A Video To Create Your Own Customized Lesson!

In the past year or so, free tools have become available for building a private quiz or other content around an existing video, or around your own video content.

TED-Ed

In spring 2012, educators and technology advocates across the world were delighted by the launch of the TED-Ed YouTube channel and its corresponding web site, devoted exclusively to educational content. A great idea that they’ve built on the TED Ed site is a ‘flip this video’ function that lets you turn any video into a customized lesson! You can add your own text, and add your own questions and ‘Dig Deeper’ follow-up suggestions. You can then share the custom lesson with students through e-mail, and web link, Facebook, or Twitter – the content will have its own unique page on TED Ed, and you can decide who gets to see it. You can see who viewed the lesson, the number of questions they attempted to answer, the answers they provided, the number of questions they got right, and more (with their permission). Even cooler – you can flip ANY YouTube video (including one you create)!

We used this tool in an online workshop I ran in the summer of 2012, and honestly, at that time it was a little problematic. Since then, however, the site has come out of ‘Beta’ and over 30,00 videos have been flipped. In July 2013 I took it for another test run and it looks like they’ve really polished up the functionality. This is very cool and powerful great way to flip video content.

Similar Applications in Development …

I’ve come across a number of tools in the beta development stage that claim to provide similar functionality, but I cannot recommend them (Blubbr didn’t work for me, and the YouTube function requires you to seek permission to participate in their beta program, which is probably more than most people want to bother doing when there is already a good option like Ted-Ed available). I figure it’s worth sharing these anyway, though, as the concept is so powerful for teachers who want
to use the flip, it’s nice to know about all the available options, in case one or more of these evolves into a functional solution.

**Blubbr**

According to [this article](http://www.freetech4teachers.com) on FreeTech4Teachers.com, “Using **Blubbr** you can create interactive quizzes that are based on YouTube clips. Your quizzes can be about anything of your choosing. The structure of the quizzes has a viewer watch a short clip then answer a multiple choice question about the clip. Viewers know right away if they chose the correct answer or not.” (Byrne, **Blubbr - Create Interactive Quizzes Using YouTube Clips**, 2013)

Here’s [a link](http://www.freetech4teachers.com) to dozens of “Educational Trivs” that have been created using Blubbr. The product is still in beta, so be forewarned; but if all of these video quizzes are any indication, it certainly seems to work. I tried to use it and it wouldn’t work for me. I noted that I gave a try, and that it was quick and easy to use. (Blubbr)

**Make an interactive quiz on Youtube video**

This is a beta tool as of late May 2013, and it only applies to a video you upload to YouTube yourself, but it’s good to know about in case it fits your particular circumstances. You can add your own quizzes to your videos using a tool that YouTube has now added to their services! [Check out this video](http://www.youtube.com) to learn how (Roy, 2012).
**EXERCISE #4 – Voiceover a slide deck, flip an existing video, or try another technique for your first flip**

In this exercise, you are to take a shot at creating your own material using one of the techniques we introduced in this chapter. You just learned more about two specific approaches – voicing over a PowerPoint slide deck, or ‘flipping’ a video using TED-ed. You can also jump ahead a bit and try one of the other techniques discussed at the beginning of the chapter (all of which are covered in more depth in upcoming chapters). Taking one of the free screen-casting apps for a spin is pretty easy, and finding good pre-existing content to serve as the basis of a flipped lecture is often even easier!

There is a web page on EmergingEdTech.com where people can submit each completed exercise, and view the submissions of others, for a more interactive experience!

YOU CAN SUBMIT YOUR COMPLETED EXERCISE #4 HERE:
Chapter 7: A Selection of Free & Low Cost Screencasting Tools and more

There’s no denying that videos are the most common approach to delivering flipped learning content, and it makes a ton of sense, given the rich sensory experience and the increasing affordability of making video content.

Screencasting is the technique of recording content displayed on your computer screen and adding voiceover. Good quality free screencasting tools have been available for years now, and just about every link in the video creation and publication chain continues to improve over time. Anyone with a little time and patience, and the right (relatively low-cost) equipment can capture video and broadcast it. As long as you have an Internet connection and a functional computer with a webcam or microphone, you’re ready to get started with one of these free tools.

Screencasting tools provide a great way to take existing content and make it more effective as a self-contained learning resource. If you have slides or documents that you often project or hand out and lecture on, you can record and capture voiceover, and then make these materials readily accessible to your students. With those capabilities under your belt, you may soon wish to consider more advanced tools for editing and adding in highlights, layover graphics or texts, hot links, and so on (more about that in an upcoming chapter).

Screencasting basic requirements

Before looking at some great free applications for screencasting and information from some educators who have shared insights into these applications, let’s identify the basic requirements – the equipment or tools you are going to need:

**Webcam:** You will need a webcam if you’re going to record video. You can also use a digital video camera, but that’s a higher end solution and is entirely optional. Decent webcams can be purchased for $30 to $60 (you can certainly spend more for a hi-def webcam). Many laptops come with a webcam built-in these days.
Microphone (optional): Webcams generally have mics built in, as do many laptops, so you may not need one. If you start to do a lot of recording, however, you may want to invest in a microphone to get higher quality sound.

Screen Capture Software: If you are going to screencast, you’ll need screencasting software. We discuss a number of great free tools below, and a later chapter is devoted to higher end tools.

A place to do the screencasting: Don’t forget about this! You’ll want a place that is free of noise and distractions, so you won’t have a lot of annoying background noise in your recording.

A ‘script’ of some sort: It is advisable to have some sort of basic script worked out. You don’t need to write out every word (it’s generally better not to), but you need to at least have an outline, so you are clear on what you will cover and won’t miss important parts of the presentation.

A Delivery Approach: We get into this in future chapters, but it’s a good time to remind you that if you don’t have a plan for how you will make your brilliant work available to students, you’re going to need one.

Time and patience: Getting started can be tough, since you’re probably trying a lot of tools and techniques you haven’t worked with before. Just keep in mind that everything you learn builds on prior knowledge and gets you farther down the road to success. Don’t be surprised if it takes up to an hour to get your first couple of minutes done – but then it gets easier.

Now let’s check out some popular free tools for screencasting.

**Screencast-O-Matic**

Screencast-O-Matic is one of the first screencasting tools to be published and to still be around (and kept up-to-date). It works with both the Mac and the PC, and requires no installation, which is nice. [Access Screencast-O-Matic here](#). There’s a quick demo video right there on the home page. You can record and host 15 minute clips for free, and unlimited clips with their Pro version, which is available for a paltry $15 a year.
This web page from Spring Lake Park Schools provides a step-by-step guide to get started using Screencast-O-Matic to make instructional videos. Below are the seven steps provided. (Use Screencast-O-Matic to Easily Make Instructional Videos).

Follow these directions:

1. On your computer, open whatever you would like to make a recording of. Maybe you want to record yourself talking over a PowerPoint, or even reflect your iPad using AirServer to record a lesson using the iPad.
3. Click the "Start Recording" button. You don't need an account to create a recording.
4. After a few moments, you will see a box with a dotted line around it pop up. This represents your recording screen. If you are recording your entire screen (for a PowerPoint, for example) position the box to cover your entire computer screen. If you are recording only a portion of the screen (when reflecting your iPad, for example), position the box around the portion you would like to record.
5. Click the red “record” button along the bottom when you are ready to start recording. You will get a 3-2-1 countdown, and then the recording will begin. Anything you click or show will be recorded, and any talking or sounds you make will also be recorded. You can pause and begin recording again in the middle of your video.
6. When you are finished, click "Done" along the bottom.
7. After you click "Done," you will be given the option to upload your video directly to YouTube, or to "Save to File," which will save the video as a file to your computer.

**Jing**

The folks who make the very popular and powerful Camtasia screencasting application also make the popular app Jing. Jing lets you easily capture screen activity, record voiceover, and publish clips up to five minutes long. Jing works on the PC and the Mac and it’s pretty easy for a novice user. Jing uses Screencast.com as its online video distribution methodology, and you can also download the SWF
format files to distribute your files your own way. The Pro version allows you to create MP4 files, but still limits you to five minutes per clip.

Here’s the Jing website, and this “How It’s Used” page gives a great overview of how educators and trainers are using it. I’ve used Jing myself and really liked it, but I soon graduated to Camtasia as my needs evolved. (TechSmith)

**A Quick Introduction to Jing from e-Education Institute:**

According to the e-Education Institute, Jing software, “... allows you to add visuals to your online conversations. Instead of typing at people, show them what you are talking about.” (Penn State)

Many faculty find Jing a helpful tool for walking students through a given set of procedures, or perhaps to provide a step-by-step guide to solving a particular problem. Students can also use Jing to put together and share presentations easily, involving files sizes that are very manageable.

Jing is easy to install and use; those who need more detailed information can consult this article, which was presented by Kristin Koepke and Bryan Kopp at the 12th Annual UW-La Crosse Conference on Teaching & Learning. In it they provide step by instructions on: (Penn State)

- How to install Jing on Your Computer
- How to Share Your Jing Files
- Strategies for Using Jing in Teaching & Learning
- Ways to Improve Production Value
- Tips to Create Successful Audio Files
- Sample Jing Videos and Resources

**Screenr**

Screenr is another popular, free, web-based screencasting tool that works with the Mac and PC and offers additional functionality at a price. The makers of Screenr also make a suite of e-Learning tools and host this e-Learning Community with tutorials, forums, community blogs and more. With 100,000 e-learning professionals registered, the online community is a unique and interesting benefit
for users of Screenr and its related apps, from the folks who actually provide the software.

Screencasting on the iPad

The iPad is bit odd when it comes to screencasting in that it does not allow true screencasting. That is, you can’t record anything and everything that is displayed on the iPad’s screen. (Oddly enough, it is possible, but Apple for some reason chooses not to allow it). There are some screencasting-like apps that can be used on the iPad, however; these include Educreations and Screenchomp. Learn more about these types of tools in this article.
EXERCISE #5 – Take a free screencasting app for a spin!

Okay, it’s time to dive in and create your first screencast (if you’ve done this already, then use this exercise as an opportunity to try to improve on your technique, or to try a different app). Select one of the free tools above, or another screencasting app of your choosing, and take it for a spin. You can voiceover any content you have, discuss online content, or use any other digital materials you would like that you have permission to use. You can also create a video of yourself lecturing. Consider making the screencast more conversational by delivering a brief lecture to a fellow teacher or a student (*which incidentally might be a good extra credit assignment*). You probably won’t create an amazing high quality product on your first try, but you will learn a lot and you’ll be on your way to your first flipped class!

YOU CAN SUBMIT YOUR COMPLETED EXERCISE #5 HERE:
Chapter 8: Other Ways to Create Content – Podcasts and Digital Presentation Tools

Podcasts

Podcasts have been gradually edged out by video or screencasts in recent years, but there are probably more of these still being created than you might imagine. Creating audio files is generally easier and less time-consuming than creating video. Podcasts can also be supplemented with other types of content (as discussed in the examples below). Clouding the picture a bit is the fact that videocasts are sometimes also referred to as Podcasts (videocasts are more clearly referred to as ‘vodcasts’, IMHO).

You can access a whole world of educational podcasts on iTunes: https://itunes.apple.com/genre/podcasts-education/id1304?mt=2.

Laura Bates’ 10 Fantastic Educational Podcasts also provides some good examples of educational podcasts.

Here are some tools that you can use to create podcasts:

- You can use some screencasting apps, like Camtasia to just output your vocal production. It’s nice to use a robust tool like Camtasia for this, since it makes it easy to layer sound tracks (so you can do things like fading music in and out, for example).

- Any software that will record audio can be used to make an MP3 for audio-casting.

- Traditional digital audio tools can be used very effectively. While this can be expensive, it doesn’t have to be. If you happen to know someone who owns a Mac and uses Garage Band, they may be equipped to easily help you record a podcast.

Adding Voiceover to Images

Adding a voiceover to a photograph or other image, and then stringing together multiple images with voiceover, can be a good way to deliver some flipped course
content. There are a growing number of sites that let you create this sort of content for free. Here’s a couple:

**Fotobabble.com**: Here’s a great set of ideas about how teachers can make good use of Fotobabble.


**Slideshare**

Slideshare ([www.slideshare.net](http://www.slideshare.net)) is an easy, popular, and free tool for putting PowerPoint or OpenOffice slides (as well as many other file formats like PDFs and Word docs) online. The viewer doesn’t need to have PowerPoint or whatever app the original file was created with; they only need web access (free Slideshare accounts only allow for public uploads, meaning they will be available to everyone. For private uploads, one needs to upgrade to a Pro account, which starts at $20/mo. as of July, 2013).

Of course, simply putting a slide presentation online may not make for particularly exciting delivery of content, but there are ways to improve on this. It is certainly possible for a slide-deck to constitute good delivery, as in this award-winning presentation about Cigarettes (great for a health class or even some science lectures), but your slides may need some work to play better as a stand-alone presentation. Another common technique to take your presentation to the next level is to add voiceover. (Empowered Presentations, Presentation Design Firm)

For a quick introduction to using Slideshare to share course materials, check out this 4 minute [Youtube video](http) from instructor D. Caskey.

**VoiceThread**

VoiceThread ([www.voicethread.com](http://www.voicethread.com)) excels at collaborative video streams (rather than static video delivery), so it might not be the first thing someone thinks to use to deliver content - but that is also part of what makes it a great option for a
flipped class. Using VoiceThread, you can deliver a mini-lecture with Vuvox and require students to submit a reply (to ‘close the loop’!)

Here’s some more insight into VoiceThread, from the voice of the educator:

- **Using VoiceThread to Promote Learning Engagement and Success for All Students** by Stein Brunvand and Sara Byrd, is a rich PDF article that gives a great perspective on how VoiceThread has been used in an engaging way in an educational setting (Byrd, 2011).

- Richard Byrne offers these **100 Ways to Use VoiceThread in Education** on FreeTech4Teachers.com (Byrne, 100 Ways to Use VoiceThread in Education, 2010).

- And in this example, we have the University of Rhode Island **Using Voice Thread for Media Literacy Education** (The University of Rhode Island).

**Vuvox**

Way back in 2010 I stumbled across Vuvox ([www.vuvox.com](http://www.vuvox.com)) and had a blast creating this scrolling video to accompany the version of Streets of Laredo my son and I had recorded while I was getting re-introduced to multitrack recording (I’d like to think I’ve gotten a good deal better now at producing professional sounding tracks, but I kind of like the way this one turned out, especially with the unique video to accompany it – kid’s pics and all!). I shared my story here, to make EmergingEdTech readers aware of this fun timeline-style presentation tool (Walsh, Vuvox Rocks (what a great tool for creating student reports and teacher presentations), 2010).

Mark Brumely shares his enthusiasm about using Vuvox for teaching in his Teach Amazing post “[Vuvox Express – Great Presentation Alternative](http://www.teachamazing.com/2010/03/vuvox-express-great-presentation-alternative/).” He also offers an interesting approach to using it, as he suggests exporting a PowerPoint template as JPGs (which looks much easier than I would have thought) and pulling them into Vuvox to create a very different type of presentation. (Brumley)

**Eyejot**

I was introduced to EyeJot ([www.eyejot.com](http://www.eyejot.com)) in the first online course I took, which was a great introduction to “Implementing Instructional Technology
Innovations” from Anne Bell at UW-Stout. We used a bunch of great tools like Eyejot to complete assignments.

For insights into the application’s potential in education, I refer the reader to these sources:

- The American Journal of Business Education featured this article, *Creating And Maintaining Instructor/Student Connection Between Class Meetings: The Use Of Eyejot-A Video Messaging Technology*, a collaboration between three university professors, in their October 2011 volume (Lillie, 2011).

- Jason Renshaw shares insights in *Online Teaching with Eyejot Video Mail* in his web article (Renshaw, 2008).

While Eyejot is not proposed as a core tool in learning content delivery, it can certainly play a role in both delivery and teaching support.

*SooMeta*

This relatively new tool ([www.soometa.com](http://www.soometa.com)) lets you create presentations that can combine videos from YouTube, pictures from the web or from your desktop, text, and voice recordings. In this video: [http://www.youtube.com/watch?v=Sr7aDShcxf0](http://www.youtube.com/watch?v=Sr7aDShcxf0), teacher Lindsey Sipe shows how to get started using SooMeta, from an educator’s perspective (Sipe, 2013).

*Vimeo*

Here’s a page from the “Teach Web 2.0” Wiki about using Vimeo in the Classroom: [http://teachweb2.wikispaces.com/Vimeo](http://teachweb2.wikispaces.com/Vimeo) (Group).

Vimeo ([www.vimeo.com](http://www.vimeo.com)) also provides this web page focused on Elementary Classrooms. “In it's fourth year, the Elementary Connected Classrooms is a unique learning environment created through the transformative and ubiquitous use of technology. Three classrooms in three separate rural communities connect daily in a variety of ways. We connect for a daily video conferencing lesson, we learn from each other on our collaborative Moodle site, we have several face to face gatherings throughout the year and we love to share our monthly news videos, most of which are on archived on this site to share with the world.” (Vimeo, LLC)
**Online collaborative activities**

Asynchronous online discussion could be useful part of good online content design and delivery. For example, a night’s homework could be to watch a relatively brief video (maybe just 10 or 15 minutes of content), followed by a visit to an online discussion forum to answer a question or two and to read and respond to another student’s answers. This could be a very good way to get students to engage with a particular topic. Another asynchronous approach might be to add your perspective to a collaborative document, like a Google Doc.

A quick online chat could also be used in a similar fashion, although this is obviously a *synchronous* activity (inasmuch as everyone must participate at the same time), and therefore requires students to commit to a narrow time frame of availability.

**Gaming, Simulations, Computer Based Interactives**

Yes, this can be a great way to consume learning content - sort of like an online lab. The biggest challenge is to find content of this type that is relative to your subject area. For example, here are [4 Sets of Introductory Computer and Internet Technology Interactives](#) that I found in early 2012.

**UpsideDownAcademy**

I came across [this site](#) while doing research for this book, and I just have to mention it. It’s a different kind of flip – the students are doing the teaching! I think this sort of thing can play a legitimate role in some flipped classrooms. This is an idea that seems to be rapidly gaining in popularity, and I’ve come across various versions of it in the past few months.
Chapter 9: When You’re Ready – Professional Screencasting Tools

Camtasia

Camtasia from Techsmith may very well be one of the true catalysts of the evolution of the flipped classroom. I say this because I have heard it referred to over and over again by flipped classroom advocates as a tool of choice. The Techsmith web site takes advantage of this with this page devoted to the flipped classroom. If you scroll down the web page you’ll find three sets of stories from three prominent flipped classroom teachers that discuss the advantages of the model, flipped classroom basics, and options for moving the flip up to a larger scale. (TechSmith Corporation)

I love sharing stories about measured successes in the use of the flipped classroom model, and this article on CNN’s Schools Of Thought happens to expressly reference Camtasia. Greg Green is the principal at Clintondale High School in Clinton Township, Michigan. In the article, he explains …

“Our flipped school model is quite simple. Teachers record their lectures using screen-capture software (we use Camtasia) and post these lecture videos to a variety of outlets, including our school website, and YouTube. Students watch these videos outside of class on their smartphone, in the school computer lab (which now has extended hours), at home or even in my office if they need to. Now, when students come to class, they’ve already learned about the material and can spend class time working on math problems, writing about the Civil War or working on a science project, with the help of their teacher whenever they need it. This model allows students to seek one-on-one help from their teacher when they have a question, and learn material in an environment that is conducive to their education.”

(TechSmith Corporation)

Clintondale has managed to turn class failure rates around. It’s an impressive story – I encourage you to give it a read in its entirety.

April Gudenrath, an English teacher at Discovery Canyon High School in Colorado, discusses the flip in this article on TechLearning.com. “I flip all the
When it comes to the flip, Camtasia seems to me to be the mostly commonly referenced screencasting app. As of July, 2013, it costs $179 for educators (https://store.techsmith.com/education.asp) and it gives you capabilities that include: (TechSmith Corporation)

**Powerful Editing:** This is where Camtasia shines – in combining still images and video, and using its many other tools to create a video that is rather professional.

**Insert Text or Images or other ‘Call Outs’:** These are fun – add a thought bubble with words, or a semi-transparent box or other shape in which you can add text. Fade in or out, add a ‘highlighter’, overlay additional images or text, and do much more with these powerful tools.

**Inserts Transitions between slides:** Lots of cool effects here – Dissolve, Rotate, Fade to Black, ‘Windmill’, and much more!

**Zoom and Pan:** Zoom in or out of an image while panning.

**Picture-in-Picture:** Not really a fan of it in the flipped context, but it’s there if you want it.

**Easy integration of additional audio tracks:** It’s easy to add background music or other additional audio (or voiceovers).

**A library of cool animated opening, closing, and section separator templates:** These can give your videos an easy ‘pro’ upgrade!

Camtasia is a great tool and I’ve been using it for years.
Of course, there are alternatives to Camtasia. Here are a couple of other higher-end screencasting applications that might be used to create flipped classroom content.

**Adobe Captivate**

A teacher I had in a recent Flipped Classroom workshop mentioned that she is using Adobe Captivate as her screencasting application. EmergingEdTech also recently hosted this article about teacher Wendy Riggs – a biology teacher at College of the Redwoods, who has flipped her classes for the last two semesters, offering video lectures for human anatomy, human physiology and general biology (Fineday, 2013).

Riggs records her lectures using Adobe Captivate, uploads the videos to YouTube, and posts them on her own website. Students can also access the PDF format of her lectures in a Dropbox folder, allowing easy online and offline viewing. “All students have different ways that they prefer to access the content, and I like giving them lots of options,” she says. Students can access lectures and content on computers, smartphones and tablets. (Riggs)

**ScreenFlow 4**

In this video, High School science teacher and author of Bozemanscience.com shows how to use Screenflow, Keynote, and Omnidazzle on Macs to make an educational screencast. ScreenFlow 4’s free version is a trial version – the full version is $99. (Bozeman, 2010)
Chapter 10: Tips & Techniques for Creating High Quality, Engaging Screencasts

The creation of instructional videos is one of the many technology-enabled capabilities that the 21st century teacher has at his or her disposal. Instructional videos can be a wonderfully engaging element in teaching, and video content is usually a fundamental element of the flipped classroom.

The low cost of good quality webcams and the availability of free or relatively inexpensive screencasting applications helps to make the development of video learning content easier than ever. Yet all the free or low-cost tools in the world do not assure good quality results. There is an essential element of technique to be considered. If one is going to invest time, energy, and money in the tools necessary for the creation of video content, it is highly advisable to learn a bit about how to do it well.

With the above in mind, I’ve searched the web and selected ideas from a handful of good web resources and articles on the subject. These tips and techniques can help anyone create good quality, engaging screencasts. (Note that I have embellished many of these tips with some comments of my own, in parenthesis).

From “Making Quality Flipped Class Videos,” by Jasper Fox:

- **Keep them short** (lots of these sources emphasize this – 3 to 10 minutes is generally the maximum recommended range)

- **Embellish the slides** (leverage the screencasting application’s capabilities to add notes, use highlighters, etc. Don’t do it just for the sake of doing it, but use these functions judiciously to help make a point, emphasize key terms, etc.) (Fox, 2013)

From “Beginning to Flip your Classroom with Screencasting” on 21things4teachers.net:

Microphone techniques:
- Use quality equipment (a good mic)
- Position the mic away from your mouth, slightly below and to the side (this helps to eliminate ‘pops’ and sibilance)
- Place the cord and mic so it doesn’t rub against your body or clothing

**Planning process:**

- Storyboard your project
- Use graphic organizers, index cards, prompts, etc.
- Script it out, talk it through
- Gather and prepare your Media Resources
- Walk through it

**Other tips:**

- Cursor or not? Do you want it visible in the recording? Choose the ‘effect’ desired (enhanced or none)
- Close all other running programs and windows while recording
- Be sure to watch for spelling or grammar mistakes on printed text!
- Music mystro – add a short fade in at the beginning and fade out at the end
(CCRESA, IISD, MISD, SRESD)

*From “Screencasting Tips and Best Practices” by David Strom:*

**Choose where you are going to distribute your content,** and name your channels consistently. (YouTube is dependable and best-known, and being able to easily embed YouTube videos in other sites can be a powerful tool. There are also plenty of other video hosting sites to consider, and be sure to also consider using your own LMS if your school has one. As for naming the channels and videos – if you use a popular site, you may want to include a reference to your name as the instructor, and to the course and possibly the name of your school, to differentiate your content from the rest.).

**Audio recording tips:**

- Speak clearly, crisply, and engagingly.
- Use your audio editor to remote any ‘umms’, ‘you-knows’, and other verbal
pauses or mistakes.
- Vary your tone: although you are reading from a script, you want the recording to sound natural and spontaneous.
- Speak faster than you normally would in conversation; a viewer can always hit the pause or rewind button if they want to hear or see something again. (Strom, 2011)

**From “Most Common Mistakes in Screencasting” by Andreas Zeitler:**

**Reasons to avoid using the built-in microphone on a laptop:**

- People will hear you typing and clicking.
- The recording will have more hiss, because of the less-than-optimal quality of the microphone.
- The recording will have more ambient sound (such as a printer printing, the phone ringing, the wind blowing or a car honking).

**Some things NOT to do (Note: I’ve reworded these).**

- Use Handheld Cameras. Don’t do it (unless you are capturing content during a field trip or other ‘mobile’ venture).
- Use picture-in-picture constantly throughout the video (a little is fine, but using this technique too much virtually always creates a problem).
- Move the mouse constantly while screencasting. (Zeitler, 2010)

**From “Top Ten Tips for Creating Effective ScreenCasts” by Bill Meyers:**

(Consider) an enhanced (enlarged) cursor

- An enhanced cursor helps viewers follow the action
- Use enhanced cursor movement to pinpoint important information

**Plan to Make Mistakes**

- Know that mistakes are easily removed during editing
- When you make a mistake, take a breath and then repeat the segment that contains the mistake
Edit ruthlessly

- Edit out mistakes
- Edit out unneeded or confusing material
- Edit to keep the presentation brief and interesting (Myers)

*From Flip Your Classroom: Reach Every Student in Every Class Every Day by Bergmann and Sams*

Chapter 4 of this book has a section titled “How to Make Videos Your Student Will Love.” Here’s a couple of great suggestions that were not already mentioned above:

**Create the video with another teacher.** “There is something powerful about watching two people having a conversation instead of having one teacher talk to the viewer.” Radio stations use this technique all the time for morning talk shows. If you can partner up with another teacher, you can help each other create more engaging videos. One of you can take the role of “the learner” while the other serves as the teacher.

**Add humor.** A little humor can go a long way toward making more engaging videos. (Jon Bergmann A. S., 2012)

Don’t hesitate to click through to the source articles above to access more tips and techniques!
**EXERCISE #6 – How will you apply good screencasting techniques (or will you approach the flip in a different way)?**

Okay, so now you’ve learned about many ways to make screencasts more engaging and enjoyable for your students. Write a couple short paragraphs, or a bulleted list, with specific ideas you can use to improve on the screencast you created in Exercise #3. Don’t just reiterate the ideas above – be sure to think specifically about your screencast and how it can be made better.

If you have decided not to use screencasting, explain how you will create or find and use flipped content in your class. Will you use another approach or other tools for flipping content, or will you use existing content on the web (or will you mix these approaches)?

Chapter 11: Approaches to Organizing Your Content for Delivery

Whether you are directing students to materials on the web or creating and delivering your own content, once you start to build a collection of learning content, you will need to organize it for effective delivery. Having your own central online place to provide access to learning materials can help to keep students focused on the content, and make it less likely that they will ‘wander around’ the sites to which you’ve directed them.

Here are a few common approaches to organizing your learning content online.

**Your school’s LMS**

Most higher education institutions have one or more Learning Management Systems (also commonly referred to as Course Management Systems). Many of these are well equipped for delivering digital learning materials. Not all of them are, though, so be sure to confirm this and try it out before assuming that your school’s LMS will be your delivery platform. An LMS can be a great delivery mechanism because you can often use related tools as part of the process – for example, requiring some feedback in a Discussion Forum can be one way to help ensure that students consume learning content and work to absorb it.

**Wikis**

Many teachers, especially in K-12 education, like to use Wikis to create centralized resources to organize and deliver learning content (and for other teaching functions). [Wikispaces](https://www.wikispaces.com) is a very popular Wiki used in education. [PBWorks](http://www.pbworks.com) is another (they have some nice functionality for free, and much more for just $99/year). These tools make it easy to add images, links, videos, and more to a web page. They are really pretty easy to use – don’t be intimated by the idea of creating your own web page; it will likely be much easier than you imagine. When you are working with a Wiki, you don’t need to know HTML to create a page (although it can sometimes help).

To give you a sense of what a Wiki can look and feel like, here’s a few good examples of some cool education-focused Wikis:
- The “blended-classrooms” wiki has a handful of pages, each of which contains videos, text, and images that provide information about the given subject matter (Tangient LLC).

- There are a lot of resource links in the “SideBar” on this TeachingWithTED Wiki (Roth). There’s also a page about the flipped classroom (Anderl).

- The Flat Classroom Project wiki. The Flat Classroom Project is “a global collaborative project that joins together middle and senior high school students (typically in Grades 9-12, 14-18 year olds). This project is part of the emerging trend in internationally-aware schools to embrace a holistic and constructivist educational approach to work collaboratively with others around the world in order to create students who are competitive and globally-minded.” (Lindsay)

**Online LMS/CMS alternatives and “social learning” apps**

There are a variety of applications available online today for little or no cost that provide spaces and tools to deliver educational content. Sites like Edmodo are highly popular, and these types of applications are becoming more powerful every year.

- Edmodo is a very popular platform for schools (commonly K-12 schools, where traditional LMS/CMS systems are rarely used). In fact, there is a group dedicated to Edmodo on FlippedClassroom.org. Edmodo has a look and feel somewhat similar to Facebook, and its functionality includes discussions, assignments, quizzes, news alerts, polls, and more. Your classes in Edmodo are by invitation only – they are not public. Best of all, Edmodo is entirely free (and does not have advertising). Check out the video on their About page to hear a teacher’s perspective on this tool.

- WizIQ is another popular learning platform, but it does come at a cost (after a free trial). There are individual and organizational pricing plans. WizIQ is also invite-only and provides an extensive set of tools including chat, live video streaming, breakout sessions, assessments, content library, and much more.

- Schoology.com: With sections for Materials, ‘Updates’, a Gradebook, Performance Based Analytics and more, Schoology provides a centralized free web
site and educational tools for hosting your class content in a safe online environment.

**Google Drive**

Until 2012, this was known as “Google Docs,” and it is available as part of Google Apps for Education, as well as being available on its own. Many teachers like to use Google’s free accounts and the wealth of tools they offer. Google Apps for Education can be configured to allow schools to let students sign on with their school email address as their user ID, which can greatly simplify their use of the software. Google Drive provides storage and the use and sharing of the Docs, Spreadsheets, and Presentations apps formerly known as “Google Docs.” If you implement Google Apps for Education, Google Drive is one of these Apps. There are administrative features available that can let administrators control which apps are used, and review usage patterns and volumes. These are some great advantages to this free platform.

You can also access Google Drive independent of Google Apps for Education by simply signing up for a free Google account, which provides Gmail and much more.

With Google Drive alone, you’ll have a good place to save and share files (but it is not a web page building type of tool – see Google Sites below for more on those). One easy way to provide access to a collection of content can be to create a Google Doc and insert text, pictures, and links to videos. One doc can be a set of content for one or several evening’s work, or for a whole chapter or section of learning content.

Google Drive is at the top of this list of [7 Must-Have Tools For The Flipped Classroom](#) from Erin Palmer (Palmer, 2013). [This Flipped Classroom article](#) advocates for using Google Apps for Education (Linkgard International, 2013). Ian O'Byrne is an Assistant Professor at the University of New Haven and hosts “[the Digital Sandbox](#),” where you’ll find [this flipped classroom page](#) and [this page](#) discussing Google Drive (O'Byrne, Flipping the Classroom). These are just a few quick examples of items I’ve come across that feature educators advocating for the use of Google Drive in a flipped context.
**Google Sites**

Speaking of Google, another great place to host content is on a Google Site. This is rather like a Wiki in many ways. You only need a Google Account to create a Google Site. Once you have one, click here to learn how to get started.

For additional perspective on Google Sites, here’s a page about the Flipped Classroom that has been built in “Dean’s Training Resources” site ("Dean"). And here’s another one from The Digital Sandbox (O'Byrne, Flipping the Classroom).

**Facebook**

Yes, I’m serious – Facebook can be a perfectly legitimate, highly functional way to organize and deliver class materials. When I wrote the article, Facebook as an Instructional Technology Tool in 2010, I was amazed at the amount of traffic the topic attracted (Walsh, Facebook as an Instructional Technology Tool, 2010). Who thought teachers were interested in using Facebook in the classroom? Student Kristen Nicole Cardon had submitted a comment in response to my post, 5 Reasons Why Educators Need To Embrace Internet Technologies, in which she explained how she used Facebook in a course she took (Walsh, 5 Reasons Why Educators Need To Embrace Internet Technologies, 2009). This led to multiple articles on the subject. My favorite was a two part series on instructor Richard Cossette’s “Facebook Summit 2011” – a highly engaging and fun project he did with his 9th grade students (Walsh, Facebook Summit 2011, an Excellent Academic Use of the Popular Internet App, 2011).

The key to successfully using Facebook as a distribution platform for education content is to establish and maintain privacy (and of course, your students must be above the Facebook user age limit of 13 years old). A couple of tips to help maintain privacy: create a professional Facebook identity that is separate from your personal Facebook identity; and use a Facebook Page or Group to deliver your content. To learn more about creating Groups and Pages, check out these How To videos from Jay Dold:

**Setting Up a Facebook Group for Your Class:**

http://www.youtube.com/watch?v=cm0aDPRHiQA&feature=channel_video_title (Dold, Setting Up a Facebook Group for Your Class, 2010)
The Basics of a Facebook Page for Educators:  
http://www.youtube.com/watch?v=OQhEk9ZKekA&feature=channel_video_title  
(Dold, The Basics of a Facebook Page for Educators, 2010)

Learn more about using Facebook in education in the Facebook (classroom and instructional uses) article category on EmergingEdTech.com (Walsh, Facebook (classroom and instructional uses) Article Category).
EXERCISE #7 – Plan your flipped content delivery

How will you deliver your flipped class content? Do you have an LMS or CMS at your school that you can use as your delivery platform? If not, will you look to use tools like Edmodo, or build your own Wiki? Maybe you’ll just use Google Drive to deliver content. Whatever route you choose, be sure to consider potential obstacles that you may need to overcome. If students don’t have Internet access at home, for example, how can you help ensure that they can access the content?

YOU CAN SUBMIT YOUR COMPLETED EXERCISE #7 HERE:
Section 3 –
FLIPPED CLASSROOM RESOURCES

Learn more and stay informed
There are many good resources available to help teachers learn more and stay informed!

Books

Website & Social Networks

Workshops & Conferences

Emerging Ed Tech

Flip Your Class: Reach Every Student in Every Class Every Day
by Sams & Bergmann

Flipped Classroom Twitter Hashtags #Flippedclass

Flipped Class Groups on Facebook

Top Notch Free Content!

Lectures and Talks from brilliant minds and revered scholars

Online Tutorials from respected online educators like Sal Khan

Image created using Glogster.com
Chapter 12: Lectures from top University Lecturers

Teachers can draw from an abundance of online lecture sources to augment their own material and lectures. These video lectures cover nearly every learning topic, from basic math to advanced social sciences, and they’re ready to be put to use right now.

It is worth noting that in the course of delivering online workshops about the flip, I have heard some teachers explain that parents in their districts would be aggravated to learn that they were using ‘canned’ lectures. For example, when it comes to private schools, I’ve heard statements like, “they are paying us to teach their children, not to deliver pre-packaged lectures that someone else created.” I would counter that using world-class lectures from top university professors and industry experts is a positive development, rather than a negative one. Teachers should always be creating and developing material of their own and bringing their expertise to the educational process, but that does not mean that they have to exclude the ideas of supplementing learning with outstanding content. In fact, it is a disservice to students to not make them aware of the vast array of materials that are available to supplement their learning, both in their current classroom and on into their futures, where they can become lifelong learners.

Here’s a selection of excellent online video learning materials for you to consider, whether you are just giving the flipped classroom a try, or if you’ve decided to flip your entire course.

YouTube’s Education Section
http://www.youtube.com/education

The ‘big kahuna’ of online video lectures, it’s likely that most of the popular content found on many of sites below can be found here as well. From MIT lectures to basics regarding continental drift, YouTube is sure to have an entertaining and informative array of options for any educator’s needs. Of course, one down side to YouTube is that it’s easy to get distracted by the many videos available there. This can be one advantage of using a more focused channel, or a proprietary site.
TED  
http://www.ted.com/  

What makes TED such a great place to get information is that the speakers come from all walks of life, and bring with them a wide variety of unique and insightful outlooks on certain realms of human understanding. Those who speak at TED are always introducing new ideas into the arenas of science, culture, politics, and academics. Such an online source acts as a gold mine of new material for educators. *(In fact, we’ve devoted the next chapter to a more in-depth review of these inspiring talks).*

Khan Academy  

The Khan Academy has evolved into an ed tech juggernaut, and they are positioned to impact the evolution of education in an exciting way. That being said, the large collection of videos (now over 3000), which cover a huge range of academic subject material and grade levels, are the foundation upon which the Academy was built. The philosophy behind the thousands of hours of lectures that are available through the Khan Academy is that every child learns at a unique pace, and videos provide students with a means to control the speed of their education. Assigning Khan videos to watch is a perfect way to hand out homework that’s likely to actually get done, as it enables students to become directors of their own learning. Note that the KhanAcademy.org site is built around the evolving array of services they are offering to teachers, schools, and entire school districts, while the YouTube channel is where you can find videos and use them as self-contained, stand-alone learning resources.

Open Culture  
http://www.openculture.com/  

This free source acts as an aggregate for culturally-significant videos that exist on the web. Whether it’s Errol Morris discussing the subjective nature of historical photography or a recording of John Cage performing revolutionary avant-garde music from an episode of I’ve Got a Secret, Open Culture collects videos with great cultural substance for you and your students to embrace at your leisure.
**CosmoLearning**
http://www.cosmolearning.com/education/

CosmoLearning collects a whole host of video lectures that range across a wide variety of subjects. If you need a video to cover a particular aspect of astronomy, there are over 2000 to choose from. Math? Nearly 1700. They have recently started collecting and delivering whole courses as well as videos.

**LearnersTV.com**
http://www.learnerstv.com/

This science-centric video lecture collection is significant due to the breadth of the content that the site makes available. If you click on the “Basics of Biodiversity” for example, you get a series of 10 videos that each lasts 2-5 minutes. Click on the “Fundamentals of Biology,” and find dozens of videos that run anywhere from about 10 to 30 minutes each.

**Teaching Channel**
https://www.teachingchannel.org/

This “video showcase of inspiring and effective teaching practices in America’s schools” features videos produced through collaborative effort. Video production experts, education advisors, and classroom teachers have worked together to share teaching techniques and to celebrate teachers. This is more about the teachers learning from each other than it is a source of content for students, but it is a unique, inspiring, and powerful resource well worth knowing about and sharing.

**MOOCs**

Another great resource that is expanding rapidly is the many MOOCs that are now popping up all over the place. MOOC stands for “Massive Open Online Course.” Check out Chapter 14 for more about MOOCs and where to find them.
Chapter 13: Expert Content from TED

For those who might not have heard of TED, the acronym stands for Technology, Entertainment, and Design. TED is a nonprofit devoted to “Ideas Worth Spreading.” It started out way back in 1984 as a conference that brought together people from the Tech, Entertainment and Design worlds. With the help of the Internet, the conference talks are now archived and made available for broadcast across the world.

I’ve even found my 13 year old son scrolling through TED videos for pure entertainment. It’s that interesting and that good (to his credit, he’s a bright, curious kid, for which I am extremely grateful)!

Here’s some links to a few TED Talk videos, to provide a sense of the kinds of talks they have available, and which you might want to tap into as flipped content resources for your classes.

Peter Singer: The why and how of effective altruism (Singer, 2013)
“If you're lucky enough to live without want, it's a natural impulse to be altruistic to others. But, asks philosopher Peter Singer, what's the most effective way to give? He talks through some surprising thought experiments to help you balance emotion and practicality -- and make the biggest impact with whatever you can share.”

Angela Lee Duckworth: The key to success? Grit (Duckworth, 2013)
“Leaving a high-flying job in consulting, Angela Lee Duckworth took a job teaching math to seventh graders in a New York public school. She quickly realized that IQ wasn’t the only thing separating the successful students from those who struggled. Here, she explains her theory of “grit” as a predictor of success.

At the University of Pennsylvania, Angela Lee Duckworth studies intangible concepts such as self-control and grit to determine how they might predict both academic and professional success.”

Pearl Arredondo: My story, from gangland daughter to star teacher (Arredondo, 2013)
“Pearl Arredondo grew up in East Los Angeles, the daughter of a high-ranking
gang member who was in and out of jail. Many teachers wrote her off as having a problem with authority. Now a teacher herself, she’s creating a different kind of school and telling students her story so that they know it's okay if sometimes homework isn’t the first thing on their minds.

Pearl Arredondo helped establish a pilot middle school that teaches students to be good communicators in the 21st century.”

**Kakenya Ntaiya: A girl who demanded school** (Ntaiya, 2012)

“Kakenya Ntaiya made a deal with her father: She would undergo the traditional Maasai rite of passage of female circumcision if he would let her go to high school. Ntaiya tells the fearless story of continuing on to college, and of working with her village elders to build a school for girls in her community. It’s the educational journey of one that altered the destiny of 125 young women.

Kakenya Ntaiya refused to accept the continued oppression of women in her Maasai village -- so she built a school that's shifting gender expectations in her community.”
Chapter 14: Other good content to tap into

Open Education Resources

Another great way to find and use existing educational content is to search out and put to use the growing body of materials being made available as Open Education Resources (OER). OER are teaching and learning materials that you may use freely, and they each come with a clearly defined policy that spells out how they can be used. Some of these resources can only be shared, for example, while others can be edited in some way and then reused as a remixed work. Learn more about OER [here](https://www.wikimediafoundation.org) (WikiMedia Foundation). It is worth noting that some of the video sites listed above are OERs.

Here are a few good resources for locating OER materials that you might wish to tap into to create flipped course content:

**OER Commons**: The OER Commons is a structured database of links to high-quality resources found on other websites. “OER Commons provides a single point of access through which educators, students, and all learners can search, browse, evaluate, and discuss over 30,000 high-quality OER.” (Institute for the Study of Knowledge Management in Education)

**The DiscoverEd search engine from Creative Commons**: A “search prototype developed by Creative Commons to explore metadata enhanced search, specifically for OER.” (Creative Commons)

**The OER Dynamic Search Engine page from Wikispaces**: Wikispaces.com is a popular wiki site (many educators create their own wikis there – a great way to host your flipped course content). This page provides a consolidated search of hundreds of OER resource sites. (Leslie)

**MOOCs**

Many of you may have noticed the attention that Massive Open Online Courses have been getting in the media lately. Personally, I’ve been amazed at how quickly the media (and the education community as a whole) has recognized the potential for MOOCs. In less than a year they have emerged from being a relatively
unknown concept to the point where major accrediting bodies are seriously considering how institutions might award credit for some of these types of courses.

When it comes to the flipped classroom, MOOCs hold interesting possibilities. Some MOOCs deliver content in a way that allows individual sections of the course to be easily consumed by your students. If you can use content from leading universities to help teach portions of the required content in a course you are teaching, would you consider doing so? This article discusses leveraging MOOC content in the physical classroom (Koller, 2012).

In fact, there is a dialogue happening today about the potential for the MOOC model to become increasingly standard fare in higher education. I can certainly envision the possibility - and the good sense - of using top-notch lectures and discussion forums that include the contributions of thousands of students from around the world, to play a key role in courses taught in brick-and-mortar classrooms. Key to the concept would be the work of the teacher who would integrate the material, design the course, and work with students face-to-face to apply the content that would be delivered through these formats.

**Educational Interactives & Simulations**

There are many cool interactive presentations and simulations available across the web, covering thousands of topics. These can provide yet another great way to use fun, engaging content as an online learning resource. Open the search engine of your choosing and search for “free astronomy education interactives and simulations,” for example. Conducting the same search with a different subject is likely to provide tons of relevant resources to check out.

To illustrate further, here’s the top three results for a recent Google search for “free astronomy education interactives and simulations”:

**UNL Astronomy Education**
Astronomy labs and teaching resources developed at the University of Nebraska-Lincoln. Includes simulations, flash animations, graphics, in-class questions and ranking tasks. (University of Nebraska-Lincoln)
Educational Resources in Physics, Astronomy, and Related Fields
Includes interactive pages on electricity, magnetism, energy, and fusion. (Sonoma State University)

Interactives
These Interactives from McGraw-Hill offer a fresh and dynamic method to teach the basics of astronomy. (Fix)

The three types of educational content sources discussed in this chapter can provide a wealth of educational media that are free to use, and which bring a new perspective and an element of interactivity to your online learning materials.
Chapter 15: Flipped Teaching Websites & Social Networks

Flipped Class Social Network

This Ning site (flippedclassroom.com) had nearly 14,000 members in the summer of 2013. When I first visited this site in 2012, it didn’t seem well-travelled just yet, but while working to complete this book I checked it out again and was surprised to find such an active community of learners, focused on one of my favorite topics! (Mathematics and Science Teaching (MAST) Institute at the University of Northern Colorado)

Dr. Jackie Gerstein’s Flipped Classroom site

Gerstein is the author of the eBook “The Flipped Classroom: A Full Picture” (more about that in the next chapter). Her site offers resources and reflections and is a nice place to learn more about the flipped classroom. (Jackie Gerstein)

Flipped Classroom Twitter Hashtags

Searching or having an automated search for Twitter hashtags can be a great way to keep up with the buzz and stay in touch with flipped teaching publications and developments.

This article provides details about these “Top 10 Hashtags for Flipped Classrooms and Flipped Teaching” (Schell, 2012):

- #flippedclass
- #flipclass
- #flippedlearning
- #flippedtip
- #peerinstruction
- #edchat
- #edtech
- #teachers
- #highered
- #screencast
Flipped Classroom Pages on Facebook

I recently came across these two Flipped Classroom pages on Facebook, both of which look pretty busy with regular posts:

- This Flipped Classroom Facebook Page, sponsored by Weebly.

- It’s not clear who hosts this Flipped Classroom page.

Facebook Pages can be pretty rich sources of content and discussion, and it will be interesting to see how these two evolve.

EmergingEdTech.com “Flipped Classroom & Reverse Instruction Article Category”

EmergingEdTech frequently publishes articles that relate to the Flipped Classroom and Reverse Instruction, and all of these are tagged in this article category. Clicking on this link will bring you 8 or 9 of these items at a time: http://www.emergedingedtech.com/category/flipping-the-classroom-reverse-instruction/. (Walsh, Flipping the Classroom (Reverse Instruction) Article Category)

The Flipped Coach

This one was just too unique and interesting not to share. “The original site for taking the flipped classroom model to athletics and physical education.” (Hahnstadt)
Chapter 16: Books

*Flip Your Classroom: Reach Every Student in Every Class Every Day*

This book is by John Bergmann and Aaron Sams. I’ve mentioned these gentlemen several times throughout this workbook and I feel truly indebted to them for being important catalysts in the emerging flipped teaching paradigm. These guys really are ‘rock stars’ of the flipped classroom movement, and they have probably done more to advance the concept than anyone other than Sal Khan (who actually advocates a more far reaching approach to education technology and the evolution of education). Recently, they’ve been touring the US, delivering one day flipped classroom conferences (see the next chapter for more on that).

Their book is an outstanding introduction to the flipped classroom by two teachers who have honed their craft over many years. Sams and Bergmann provide an excellent introduction to what the flipped classroom is, why it works, and how they do it. “Flip Your Classroom: Reach Every Student in Every Class Every Day” is published by ISTE (the International Society for Technology in Education), and is available [here on Amazon.com](http://www.amazon.com).

I love this book and have quoted from it extensively in presentations and articles – I think it’s the first of many to come in this genre and I can only hope that I’ve delivered a product (in the form of *this* book) that can be as helpful to teachers and, more importantly, **beneficial to student learning**! (Jon Bergmann A. S., 2012)

*The Flipped Classroom: A Full Picture*

This is a very good resource for a low price ($1.99 for the Kindle edition). Dr. Jackie Gerstein brings various learning models and the perspective of learning science to the discussion of the flip. Her “Cycle of Learning” model (discussed in Chapter 2), brings academic science and a learned perspective to why the flip makes so much sense. (Gerstein, 2012)

*Teaching with Emerging Technologies*

Teacher Michelle Pacansky-Brock has written an excellent guide to bringing the teaching paradigm into the current century, in a way that embraces the
perspective of students (of all ages) and that has been proven effective time and time again.

I could hardly envision a better introduction to using emerging technologies in the classroom in a single self-contained resource. While this book recounts a personal journey, it also very well organized, and provides structured guidance. These experienced insights can help guide any educator through the maze of Internet tools, to discover many ways in which they can facilitate a fundamental shift in student engagement and learning.

While Pacansky-Brock does not focus on the flipped classroom in her book, she explains in her introduction that it played an important role in her conversion to being a more effective teacher, and she provides a wealth of relevant tools and informed insights into their use. (Pacansky-Brock, 2012)

The Flipped Classroom

This new free eBook by Dr. Dawn Wilson is available here on iTunes, and to start with … it’s free. This eBook is full of resources. Some of the sections are pretty brief, but the “Sample Flipped Lesson Plans” section contains 14 lesson plans that span Kindergarten through University-level lessons across a variety of subjects, and these are really worth exploring. (Wilson, 2012)
Chapter 17: Flipped Class Conferences and Workshops

A few Flipped Teaching conferences, ‘traveling workshops’, and online workshops have started springing up in the past few years. It is likely that more will follow.

*Flipcon*

The folks at flippedlearning.org have been delivering the Flipcon conference for a few years now.

“FlipCon13 offers three days of intensive discussions, multiple sessions, and hands-on workshops. Hundreds of flipped educators from K-12 and higher education will choose between 42 Concurrent Sessions, seven Featured speakers, seven subject-specific Spotlight Sessions for job-alikes, and 14 showcases with flipped-focused companies.”

Keynote speakers include Jonathan Bergmann, Aaron Sams and Ramsey Musallam, all pioneers in the movement. A panel discussion with students, parents, and administrators is also featured, and you can learn about making videos in the pre-conference hands-on workshops hosted by TechSmith.

A Virtual Conference is also offered by EduVision with live streaming of all keynotes and more than half of all sessions (attendees will have access to the archives for six months after the event).

*FlipCon13* was held in historic Stillwater, Minnesota, on the St Croix River, in June. I assume there will be a Flipcon 14 next year, and many more to follow!

Learn more about FlipCon14 and future conferences here: [http://www.flippedlearning.org/FlipCon14](http://www.flippedlearning.org/FlipCon14). (SchoolWires, Inc.)

*Flipped Classroom Webinar Series from ASCD*

Bergmann and Sams and a few other flipped classroom thought leaders have teamed up with the folks at ASCD (formerly the Association for Supervision and Curriculum Development) to deliver flipped classroom webinars. Webinars from
2012 are archived here: http://www.ascd.org/professional-development/webinars/flipped-classroom-webinars.aspx. (ASCD)

**Online Workshops from EmergingEdTech**

I have had the pleasure and privilege of offering online workshops and conducting quite a few presentations at conferences and colleges across the US in the past few years, and I intend to continue offering these for years to come. Come on over to the web site at EmergingEdTech.com and sign up for blog posts via email (or like us on Facebook or follow us on Twitter) to stay in touch and learn when the next online workshop will be offered, or where I might be presenting next.

To learn more about upcoming workshops, click here: http://www.emergingedtech.com/flipped-classroom-online-workshops/.

Here’s some feedback from the EmergingEdTech July 2012 Flipped Classroom Online Workshop:

- “My head is spinning with all of the great ideas that I gained from this workshop -- and especially from our discussions. I am going to try to get on the agenda for an upcoming all-school meeting to share some of the ideas from this workshop. I am even leaning toward flipping my "new prep" classes if I can feel comfortable with staying ahead of the students in content creation. Our classes are structured to be two hours of lecture and two hours of lab per week. That translates into an hour of lecture followed by an hour of lab two days a week. By flipping my classes, I feel that the students who now struggle with homework will excel due to the reality that the homework they are assigned is laying the groundwork for what they do in class. Now, I'm just looking for a sure way to get and keep them motivated to access the flipped content for their homework. But, I think that problem might just take care of itself -- we'll see!”

- “I have learned so much from everyone's suggestions and videos. Not many of my students have internet access, but I plan to create lessons to show in class and then upload (them) to my Edline page. Edline is a school management software program our school uses.”
- “I definitely look forward to experimenting with the flipped classroom. I've been working on screencasts using iPad apps such as Educreations and Explain Everything. I think they are easy tools to use and I’m interested in seeing how the students take to it. I'm also looking into experimenting with TedEd. Having an archive of lessons will prove beneficial. Students will be able to access lessons for review and if they want to get ahead. All in all, I envision this will free up more time for students to practice what they are learning. Whether it's playing review games, answering practice problems, or even making their own screencasts, I think the learning process will be a positive one for the students.”

- “I am so excited about the learning stations. I met with my teaching partners who also teach 7th grade English, and I shared with them everything I learned in this workshop. Now they are excited about flipping the classroom with me.”

- “I am revved up to create more of my own original videos, but also think I will depend on other videos. Our fourth graders don't have much homework, but I look forward to trying to incorporate this into science and math. At this point, I think I'd like to try creating new ones for math, and use the Dr. Edventure, BrainPop, Bill Nye, the Science Guy, and others for Science. I also have a class website, so I have to figure out how to use this and balance it with the new skills I will be learning with wikis and Google websites. Our district will be assigning google emails this fall to every elementary student, so while I have a general knowledge of Google, it will be fun to explore these concepts and how they can all fit together.”

- “My original idea for the flipped classroom was to use the flipped classroom as a way to have students watch classroom material at home, freeing up class time for more meaningful instruction. I continue to believe that this will be my plan; however, I also plan to create learning stations in my classroom which utilizes the videos that I make. Students will have the opportunity to rotate into a learning station which requires them to view a flipped classroom video in order to receive a portion of our daily instruction. While one group is completing this portion of the lesson, other groups will be composing their response to literature that we are reading while another group will be conferencing with me regarding what they are reading and writing in class.”

99
- “In addition, I see a great value in developing these flipped videos as a great source of tutorial material for students. I want to be able to reference these videos so that students can constantly revisit any of them that they feel will help them become more successful in my classroom. For this reason, the content of the flipped videos will most likely focus on mini skills that students need in order to be successful in an English language arts classroom. I have already started building these lessons to include such topics as: the importance of setting, types of conflict found in literature, types of characters found in literature, the importance of developing a character for a reader, the use of symbolism in a work of fiction, etc.”

- “I am excited about the lessons that I will be creating this year, and I look forward to continuing to grow as an educator in my craft as a teacher. Thanks for everyone's expertise in this workshop. I have learned a great deal from the responses that I have read by each of you.”
**EXERCISE #8 – Update your plan**

Go back to what you wrote in Exercise 1 and use what you’ve learned as you’ve progressed through the workbook to evolve and update your plan. Be sure to include:

- How you will deliver your content, and challenges that might exist in terms of students consuming it.

- What approach you will take to help ensure that students will watch, listen, or otherwise take in the content, and remain engaged.

- How you will use class time once you flip some content.

- How you will ease in to the flip. Some of you may wish to get to a fully flipped classroom as quickly as possible, but this can be quite challenging, so how might you take a more gradual approach? Perhaps you feel you only need to use flipped techniques in a limited way, only using some of these concepts, or only flipping a limited number of lectures.
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