

# Designing K-12 Education for the Innovation Economy

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*How do governments worldwide expect graduating students to be ready for the jobs of the 21st century if they are using pedagogy developed for the 19th century? Students who are required to sit quietly passively listening to lectures for 13 years are not practicing problem solving; they are practicing their 'nation of sheep' skills, following directions. Students who do real-world problem solving in the classroom learning to innovate, create, and problem solve are preparing for a world we cannot even imagine. The Media Arts program at Palo Alto High has produced thousands of students over the past 25 years most of whom are CEOs, entrepreneurs, journalists, and professionals. That is why more than 600 students per year elect to take media arts. They want to learn to think.*

We have a national and international job crisis. We have people who cannot find jobs and we have employers that cannot find skilled people. The way we educate students today worldwide needs to change to meet the needs of the 21st century employers. So far, we are just talking about it and failing to take effective action. Why is that? It is because the 'action' we are taking is ineffective; the policymakers are far from the classroom and create policies that are unrealistic and are difficult to implement.

One example of failed policy in the recent past is the Gates Foundation small school initiative that cost millions and was deemed a failure. It turns out that the size of the school does not correlate to the quality of education in the school. Millions of dollars and years of effort were wasted. Another failure is the Bush administration's [No Child Left Behind Act](#) that has caused an education crisis and [cheating scandals](#) from Atlanta to D.C. Randi Weingarten, President of AFT, said "Visit any school in any community in America, and educators will tell you that the No Child Left Behind Act (NCLB) simply hasn't lived up to its goal of leveling the playing field for all children." She is being polite; in fact, it has made the situation worse. [Diane Ravitch](#), former Assistant Secretary of Education, who originally supported NCLB, took a courageous step when she did an about face. She said about NCLB, "By mandating a utopian goal of 100 percent proficiency, the law encouraged states to lower their standards and make false claims of progress. Worse, the law stigmatized schools that could not meet its unrealistic expectation."

A third failure, this one yet to be discussed, is the Obama administration's '[Race to the Top](#)' which requires all awardees to "Improve teacher and principal effectiveness based on performance." It sounds innocent and simple enough but it has had unintended consequences. That phrase "based on performance" turned out to be the route to high stakes testing. Teachers today have their salaries tied to the performance of their students on standardized tests. The higher the test scores, the more money the teacher makes. This policy has caused more problems for teachers and schools than any other previous policy. Teachers have no independence, are overly monitored, and caught between parents and administrators. Many teachers feel threatened all the time and unappreciated and have left the profession. More than 50% leave in the first five years meaning districts are constantly having to support new teachers. So far policymakers in Washington and the 50 states have failed to succeed in creating realistic policies that result in better outcomes.

So the big question is how do we educate students to meet the needs of the 21st century with all the obstacles we are facing ? What skills do students need to have?

First, all students need to study these core subjects in high school:

computer science	science	geography	government	language arts
mathematics	economics	history	world languages	arts, music

In studying these subjects, more importantly, they should be *using the tools of the 21st century*, that is computers, mobile devices and the internet since we are training people for the digital age. Students should be taught how to find information, not to memorize data and text as they did in previous eras. Today information is available to them 24/7 on their computer or their phone. Even students in the third world areas have cell phones, many of them smart phones. Today there are seven billion people in the world and by 2014 the world will have more [cell phone subscribers](#) than people. Even with all these mobile devices, just having a device or computer is not sufficient for a good education. It is better than nothing but it is not ideal. Computers or mobile devices alone don't teach effectively. Witness some of the poor performance of online only students in [Florida](#). The key to effective online learning or any learning for that matter is **collaboration** with other students who are also working on the same material. That is why educational studies show that the most learning takes place out of the classroom when students have a chance to interact and talk about the subject matter. Today we have that opportunity to collaborate via the web. We have a variety of tools like Google Hangouts and Skype as well as online collaborative tools. Students can form groups and collaborate remotely. It only takes one or two people to make a group and to make learning meaningful.

The recent revolution in online education started with [Sal Khan](#) and the [Khan Academy](#) which allows students to replay short videos about math and science whenever they needed them. Khan originally created the videos for his nephew but it turned out they were popular with the nephew's friends as well. In fact, Khan says, "The kids liked the videos better than they liked me." He got the idea that he could create helpful videos for all kids who needed support with learning math or science. In addition to the Khan videos, the world of education was being further revolutionized by two science teachers in Colorado who created a new way of teaching called "[The Flipped Classroom](#)." This is a pedagogy that supports flipping the homework to the class and the classwork to the home. Teachers create a video of a lecture they want to give in class and then have students watch it at home. In class, students work on a project or discuss what they had learned on the video. This method basically gives students an opportunity for collaboration and discussion on projects that used to be assigned at home.

Another major change in education in the last five years has been the advent of the Massive Open Online Courses otherwise known as the MOOC. A key factor in the success of the MOOCs is the ability to **collaborate online** and interact with the professor, teaching assistants, and other students. The first such course was given through Stanford University by [Sebastian Thrun](#) and [Peter Norvig](#) called Artificial Intelligence in fall 2012. [Here is an introductory TED video](#) about the

course.. They were quite surprised when over 100,000 participants signed up, a record number. However, only about 13% completed the course. These statistics have been pretty constant in all the MOOC courses that are now available through [Coursera](#), [Udacity](#), and [edX](#), just to mention the top three. The New York Times ran an [excellent article](#) about MOOCs in November 2012. The key take-away and the key reason that MOOCs are so popular is because they include the *collaboration piece* that was missing from previous online learning and distance learning.

Collaboration should be a part of all learning, but it frequently is not. However, it is a key part of hands-on learning projects. The idea is to have students create authentic projects that they are interested in which embed important skills. Students are motivated to learn these skills because they are needed for the project. All the core subjects listed above can be taught in a hands-on environment. That does not mean excluding lecturers, it means including projects with the lectures. Teachers should experiment teaching these core subjects in a collaborative hands-on environment that is authentic and produces a product and compare it with the typical lecture method. Then can evaluate which situation produces the most engaged students? In which learning environment do students learn the most? This authentic hands-on, or project based learning is also called today 'deeper learning' by Hewlett Foundation. "*Deeper learning* delivers the skills and knowledge students will need to succeed in a world that is changing at an unprecedented pace. Deeper learning prepares students to master core academic content, think critically, solve complex problems, work collaboratively, communicate effectively, and learn how to learn," according to the Hewlett Foundation.

John Dewey more than a century ago stressed the importance of authentic learning. Dewey continually argues that education and learning are social and interactive processes, and thus the school itself is a social institution through which social reform can and should take place. In addition, he believed that students thrive in an environment where they are allowed to experience and interact with the curriculum, and all students should have the opportunity to take part in their own learning.

1897 he wrote "The teacher is not in the school to impose certain ideas or to form certain habits in the child, but is there as a member of the community to select the influences which shall affect the child and to assist him in properly responding to these Thus the teacher becomes a partner in the learning process, guiding students to independently discover meaning within the subject area. This philosophy has become an increasingly popular idea within present-day teacher preparatory programs."

It has been more than 100 years and the education community still has not adopted hands on learning. However, now that we have digital technology it has become easier and more natural.

The [Maker Faire](#) is one out of class training program involving project based learning that is effective. [FIRST](#) is another out of class project based training program that is effective. A third out of school program that is project based is [Citizen Schools](#). All these programs are excellent. However, there is one in-school program that beat them all and that is the *journalism curriculum*. **Journalism** is *the most effective deeper learning program available the schools today*. It integrates the high school curriculum One important reason to focus on journalism is because *it is already in the schools* and it teaches all the 21st century skills students need. It could easily expand to accommodate more students nationwide without major curriculum changes.. All schools in the nation have journalism programs; however, most of them are small and usually involve the lucky 30 students or so. The journalism program should be available to all students, not just a privileged few

since it is the *most effective way* to teach 21st century skills. It is hands on, involved technology, and requires students to think.

One of the top journalism programs in the nation is the [Palo Alto High School Journalism](#) program which is now the largest scholastic journalism program in the nation. More than 600 students are enrolled in one of the ten media studies offerings. This program is a prime example of the way education can effectively produce engaged, highly skilled workers who have skills employers are seeking. These students are not learning journalism to be journalists. They are learning journalism to acquire all the 21st century skills necessary to be an innovative and creative employee in the 21st century. This kind of training is exactly what employers want. (see chart below)

The Palo Alto High School journalism program has four websites, two broadcast television journalism classes, a news magazine, sports magazine, literary magazine, foreign affairs magazine, photography magazine, arts and entertainment magazine, a newspaper, video production classes, and a yearbook, The list is as follows: Campanile (newspaper); Verde (news magazine); Viking (sports magazine) Calliope (literary magazine); InFocus (television program); Agora (foreign affairs magazine); C Magazine (arts & entertainment); Madrono (yearbook); video production classes.

### **Palo Alto High School Journalism Program**

Central Website	<a href="http://voice.paly.net">http://voice.paly.net</a>	1998
Sports Magazine	<a href="http://www.vikingsportsmag.com/">http://www.vikingsportsmag.com/</a>	2007
News Magazine	<a href="http://verde.palyvoice.com/">http://verde.palyvoice.com/</a>	2000
Newspaper	<a href="http://palycampanile.net">http://palycampanile.net</a>	1918
Television	<a href="http://www.youtube.com/palyinfocus">http://www.youtube.com/palyinfocus</a>	1999
Video Production	no online presence	1998
Agora	foreign affairs magazine	2011
Yearbook,	no online presence	1918
C Magazine	arts & entertainment	2012

This is an *elective writing* program so a natural question is what is attracting all these students to a writing program? Why would teenagers want to take an extra writing class?

*Short answer:* It is collaborative; they are working on an authentic project that is meaningful, together with their friends. The primary reason kids want to go to school is to be with their friends; the secondary reason is to learn. This journalism program encourages students to be collaborative, encourages independence, treats students with respect and showcases their work. There is a dominant drive during the teenage years for teens to be independent and this program feeds directly into that need. . Students have [First Amendment Rights](#) and pick their own story ideas. They are in charge of their own publication and use technology to make it happen. There is nothing more attractive to teenagers than freedom and respect. this is a program that involves technology, collaboration, interaction, independence, creativity, and authenticity. It also provides the type of

employees that employers today are seeking: employees that are creative, innovative and independent learners. They are employees who learn easily, unlearn if necessary, and relearn. In brief, they *think*.

Here are some other very important reason students take the program. Number one is that students learn to write five different writing styles that help them not only be skilled writers, but also intelligent readers of a variety of texts. Students learn to write news, features, reviews, opinion and sports. Each of these styles is distinct and they are all quite different from the typical five paragraph expository essay that students learn in most English classes nationwide. The importance of learning these journalistic writing styles is that they are prevalent in all publications and on the web. If students want to be good readers, they need to know how articles are written. They know how novels are written because they read them starting in the early grades and up through twelfth grade. But unless they have had journalism training students have no idea how to write or to read journalistic articles. Without training, they read them, but don't really understand the structure which is a disadvantage. To be a good reader, it is important to understand the variety of article structures. For example, if students know that in news articles the most important information is at the beginning of the article and least important is at the end, that makes a big difference in how they read news. Perhaps they just have time to read the lede. Journalism training provides writing skills, reading skills, and critical thinking skills.

Journalism also teaches the essential skills as determined by [Partnership for 21st Century Learning](#), a collaboration of education and business leaders. These are skills that the business leaders want to see in all employees, that the Common Core State Standards require, and that journalism teaches. See the chart below and compare. The primary difference is the journalism provides even more. See the course outline that follows the chart.

***Important skills students need for the 21st century***

Common Core State Standards	Employers Want	Journalism training provides	Traditional Teaching Methods provide
Access and evaluate information	YES	YES	LIMITED
Use and manage information	YES	YES	LIMITED
Analyze media	YES	YES	NO
Create media products	YES	YES	NO
Apply technology effectively	YES	YES	NO
Be adaptable to change	YES	YES	NO
Be flexible	YES	YES	NO
Manage goals and time well	YES	YES	NO
Work independently	YES	YES	NO
Be self directed learners	YES	YES	NO

<b>Work effectively with others</b>	YES	YES	NO
<b>Manage projects</b>	YES	YES	NO
<b>Produce results</b>	YES	YES	LIMITED
<b>Guide and lead others</b>	YES	YES	NO
<b>Be responsible to others</b>	YES	YES	NO
<b>Be good digital citizens</b>	YES	YES	NO

Here is the handout given to students entering Advanced Journalism at Palo Alto High School as an example of the skills students learn and the effectiveness of journalism as the curriculum for the digital age. As you can see, most of these skills are vital for performing well in nearly any workplace today. These skills make people succeed better, regardless of which job they have.

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## **INTRODUCTION TO ADVANCED JOURNALISM**

### **Goals of the program for students**

- *Improve your writing skills and Internet communication skills*
- *Learn how to write effectively UNDER PRESSURE*
- *Improve your computer and desktop publishing skills*
- *Learn how to work effectively together as a team with all kinds of people under a variety of situations (without losing your cool)*
- *Improve your oral communication skills*
- *Improve your ability to think critically and quickly*
- *Make you more aware of local, national and international news.*
- *Learn how to work effectively both as a team player and as a leader.*
- *Learn how to accept responsibility and follow through on a project*
- *Learn how to work effectively under stress.*
- *Learn how to work effectively with all types of people.*
- *Develop your entrepreneurial skills*

### **QUALITIES OF A HIGH PERFORMING STUDENT**

- *Turns in all stories on time*
- *Does high quality research*
- *Reads the paper on a daily basis*
- *Takes initiative*
- *Responsible*
- *Dependable*
- *Consistent*
- *Can handle criticism*
- *Can handle setbacks*
- *Can be a leader and a team player*

- *Proofreads and edits own work*
- *Plans ahead (yes!!!)*
- *Interviews several sources*
- *Participates in class discussions*
- *Does not talk when others are talking*
- *Sensitive to the needs of others*
- *Attend production and works with editor group*
- *Ask questions if do not understand*
- *Consistent attendance in class*
- *Gets requisite ads (\$400 per year)*

## **THE PRODUCTION CYCLE (aka how it all works)**

### **1. Story Ideas**

*Everyone must fill out a sheet of story ideas for each newspaper cycle. This includes news, opinion, features, arts and entertainment (A&E), sports, and any Spotlight/Verbatim/1 in 1900 ideas. This is a VERY IMPORTANT step of the production cycle. Without good story ideas we will not have good stories. Everyone is expected to participate in class when we brainstorm story ideas. After we have created a large list of possible story ideas, you will submit your top five choices of stories you would like to write. We will make every possible effort to assign you stories that you are interested in, although we cannot guarantee it.*

### **2. Writing/Editing Stories**

*After we have brainstormed story ideas, you will be assigned one or more stories to write. You will be given a deadline for the first draft, and this draft will be edited by the Theeds. You will make all necessary edits and share a second draft with the Theeds. \*NOTE\* The Section Editor for your stories will also be editing your second drafts. After you have completed the second round of edits by Section Editors you will submit a final draft.*

### **3. Production**

*On the first day of production, you will be assigned a page partner (or two) with whom you will be working. You and your page partner(s) will be assigned one page of the newspaper (along with the stories that must go in it) to design. You are responsible for creating an interesting and visually appealing page, complete with edited photos, captions and any graphics that need to be created on Photoshop.*

*In order to ensure that your pages are as outstanding as they can possibly be, you are responsible for getting a **Design Check** a **Section Editor Check** and **three Editor Checks**. To get a Design Check, you must sketch a layout of the page design you have in mind and have it approved by a Theed. Afterwards, you will use the InDesign software to execute that design. Once you have completed placing all text and images, print your page for your Seed to check. He/She will make edits to both the text and the design, and you must make those edits and give the improved page back to the Seed for more edits. This process will continue until the Seed is satisfied with the page, at which point they will give you a Section Editor*

*Check. You must continue this process with three Editors.*

*NOTE: you may NOT simultaneously ask two or more editors for a check. You must obtain one editor Check before you can proceed to the next. Also, a Section Editor Check is necessary before any Editor Checks.*

*If you have an ad placed on your page, you will need to obtain an **Ad Check** from one of the Ad Managers, who will ensure that the Ads are properly placed and formatted.*

#### **4. Distribution**

*The brunch following the final day of production, everyone must come to the classroom to pick up and distribute newspapers around the school. Roll will be taken and we will be marking down cutters, so you must remember to do this! We don't want anyone at Paly deprived of a Campy edition. That would be horrible for all parties involved.*

#### **REQUIREMENTS of the class:**

1. *Write one story per edition or two stories for a minimum of 600 words per edition. Everyone must write even if your story is not published. If your story is not printed in the paper it will go on The Campanile website and Voice Your story must be uploaded to Voice to get credit.*
2. *All stories must be turned in to Google Docs and labeled properly: Last name, first name: kind of story, name of story.*

*Example: Brown, John: feature, Skateboarding*

3. *Turn all of your stories in on time. **Do not turn in late stories**; students who turn in **more than two consecutive late stories** will be asked to drop the class. Even if your story is not complete, do the best that you can and turn in what you have so that you can meet each deadline. Extensions will only be given for legitimate problems, not because you forgot or had too much homework. Send extension requests to [theeds13@googlegroups.com](mailto:theeds13@googlegroups.com).*
4. *You need to learn to use Twitter and Google + since every advertiser will have the option of having you promote their company.*
5. *You should regularly read online the New York Times, San Jose Mercury News, Wall Street Journal, Time, Palo Alto Weekly to get story ideas.*
6. *Do the readings for the class sent to you via Googlegroups. (will be every few days)*

#### **GRADES**

*Everyone in the class **should** get an A. If you are not getting an A, it means that you are not working as an effective member of the team to produce the best paper ever. It means you are writing poor quality stories, not turning in stories on time or not getting your ad. If you fail to turn in stories on time or fail to do the necessary*

*research, you will be asked to choose another class instead of Campanile.*

*Your grade should not be the first thing you think about in Campanile. It should be being part of the Campanile team effort. In fact, to make you relax, everyone will start with an A grade. The only way you can get lower than an A grade is to fail do what is required for the class (see above requirements). As long as you write your stories, turn them in on time, get your ads, and participate in class and production you will get an A. It's that easy!*

*To get an A make sure you do the following:*

- a. *Turning in your stories on time in class and to **Google Docs and naming them correctly.***
- b. *Uploading your story to Voice after every issue*
- c. *Good quality story that is well researched and supported*
- d. *good work at production week*
- e. *contributing to story ideas*
- f. *Contributing to paper critique*
- g. *being helpful all the time*
- h. *being enthusiastic*
- i. *Getting your ad*
- j. *Cleaning up after yourself and making sure our room looks nice*

If these skills are easily taught in journalism and required by the [Common Core State Standards](#) then why aren't all schools adopting it?

**There are a four major reasons why this type of education is not being quickly adopted.**

**Reason number one: the high stakes testing does not test for these skills and most schools are targeting the test.**

Teachers and administrators feel compelled to teach to the test so they can get and keep funding and as a result all creativity and innovation disappears from the classroom. Test scores control the funding and since teachers salaries are tied to test scores they feel a need to be in control.

**Reason number two: teachers still think of their role in the classroom as the “sage on the stage” and schools of education are still training teachers the way they did in the last century.**

Teachers need to see their role as collaborators and facilitators rather than lecturers; however, this appears to be a difficult transition for teachers to make. Teachers are used to being in control and find it hard to relinquish any control. It is difficult to break the cycle which is why pedagogy has

remained largely unchanged for centuries. The school as a whole is seen as a place where students have little input. One important example is the 1988 Supreme Court [Hazelwood Decision](#) which gives principals and advisers the right to censor the student press. The censorship of the student press in the US is worse than in China. Only seven states have passed laws guaranteeing that student newspapers have First Amendment Rights. These states include Arkansas, California, Colorado, Iowa, Kansas, Kentucky, Massachusetts and Oregon.

**Reason number three: the administration feels that students need to be constantly monitored to achieve the desired goals.**

It is hard to teach independence when students have no freedom. Administrations need to abandon programs that monitor every student's computer screen to ensure that they are on task; it invades students' privacy, destroys independence, and demonstrates a lack of trust between student and teacher and administration. Also, in many school districts search engines are blocked because administrators are afraid of what students will find. Administrators are afraid to lose their e-rate funding and as a result they follow the motto: "when in doubt, cut it out." The federal government has to do a better job of explaining the ramifications of the Child Online Protection Act (COPA) and the Children's Internet Protection Act (CIPA) so that school districts will not be so fearful. We don't cut out teaching kids to drive just because we are afraid of accidents.

**Reason number four: it is hard to find trained teachers.**

Most teachers have no experience teaching journalism and most English teachers only know how to write response to literature essays. We have a young and highly inexperienced teaching corps. More than [50% of the teachers](#) leave the profession after five years. It is hard to be innovative as a beginning teacher because of the demands of teaching. Policymakers think that new teachers entering the profession would be the most tech savvy and innovative, but in fact the opposite is true. While they know tech tools for personal use, they don't know how to use them in the classroom. Also, lecturing is more familiar model to teachers who just spent two years in lectures in schools of education.

Resolving these issues is important if we are hoping to make significant changes in education and train students for the 21st century.



