The Impact of Digital Tools on Student Writing and How Writing is Taught in Schools

In a survey of Advanced Placement and National Writing Project teachers, a majority say digital tools encourage students to be more invested in their writing by encouraging personal expression and providing a wider audience for their work. Most also say digital tools make teaching writing easier, despite an increasingly ambiguous line between formal and informal writing and students' poor understanding of issues such as plagiarism and fair use.

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Summary of Findings

A survey of 2,462 Advanced Placement (AP) and National Writing Project (NWP) teachers finds that digital technologies are shaping student writing in myriad ways and have also become helpful tools for teaching writing to middle and high school students. These teachers see the internet and digital technologies such as social networking sites, cell phones and texting, generally facilitating teens' personal expression and creativity, broadening the audience for their written material, and encouraging teens to write more often in more formats than may have been the case in prior generations. At the same time, they describe the unique challenges of teaching writing in the digital age, including the "creep" of informal style into formal writing assignments and the need to better educate students about issues such as plagiarism and fair use.

The AP and NWP teachers surveyed see today's digital tools having tangible, beneficial impacts on student writing

Overall, these AP and NWP teachers see digital technologies benefitting student writing in several ways:

- 96% agree (including 52% who strongly agree) that digital technologies "allow students to share their work with a wider and more varied audience"
- 79% agree (23% strongly agree) that these tools "encourage greater collaboration among students"
- 78% agree (26% strongly agree) that digital technologies "encourage student creativity and personal expression"

The combined effect of these impacts, according to this group of AP and NWP teachers, is a greater investment among students in what they write and greater engagement in the writing process.

At the same time, they worry that students' use of digital tools is having some undesirable effects on their writing, including the "creep" of informal language and style into formal writing

In focus groups, these AP and NWP teachers shared some concerns and challenges they face teaching writing in today's digital environment. Among them are:

- an increasingly ambiguous line between "formal" and "informal" writing and the tendency of some students to use informal language and style in formal writing assignments
- the increasing need to educate students about writing for different audiences using different "voices" and "registers"
- the general cultural emphasis on truncated forms of expression, which some feel are hindering students willingness and ability to write longer texts and to think critically about complicated topics
- disparate access to and skill with digital tools among their students
- challenging the "digital tool as toy" approach many students develop in their introduction to digital tools as young children

Survey results reflect many of these concerns, though teachers are sometimes divided on the role digital tools play in these trends. Specifically:

- 68% say that digital tools make students more likely—as opposed to less likely or having no impact—to take shortcuts and not put effort into their writing
- 46% say these tools make students more likely to "write too fast and be careless"
- Yet, while 40% say today's digital technologies make students more likely to "use poor spelling and grammar" another 38% say they make students LESS likely to do this

Overall, these AP and NWP teachers give their students' writing skills modest marks, and see areas that need attention

Asked to assess their students' performance on nine specific writing skills, AP and NWP tended to rate their students "good" or "fair" as opposed to "excellent" or "very good." Students were given the best ratings on their ability to "effectively organize and structure writing assignments" with 24% of teachers describing their students as "excellent" or "very good" in this area. Students received similar ratings on their ability to "understand and consider multiple viewpoints on a particular topic or issue." But ratings were less positive for synthesizing material into a cohesive piece of work, using appropriate tone and style, and constructing a strong argument.

These AP and NWP teachers gave students the lowest ratings when it comes to "navigating issues of fair use and copyright in composition" and "reading and digesting long or complicated texts." On both measures, more than two-thirds of these teachers rated students "fair" or "poor."

These AP and NWP teachers tend to rate students' specific writing skills as "good" or "fair"

Overall, how would you rate your students in their ability to do each of the following?

Legend: ■ Excellent ■ Very good ■ Good ■ Fair ■ Poor

Skill	Excellent	Very good	Good	Fair	Poor
Effectively organize and structure writing assignments	3%	21%	43%	28%	5%
Understand and consider multiple viewpoints on a particular issue or topic	3%	18%	39%	32%	8%
Give constructive feedback on other students' work	3%	13%	35%	37%	13%
Appropriately cite and/or reference content	3%	12%	29%	37%	20%
Synthesize content/information from multiple sources into a cohesive piece of work	2%	15%	38%	33%	11%
Use tone and style appropriate for their intended audience	2%	14%	40%	34%	10%
Construct a strong argument	2%	13%	36%	37%	12%
Read and digest long or complicated texts	1%	8%	22%	38%	31%
Navigate issues of fair use and copyright in composition	1%	7%	25%	37%	30%
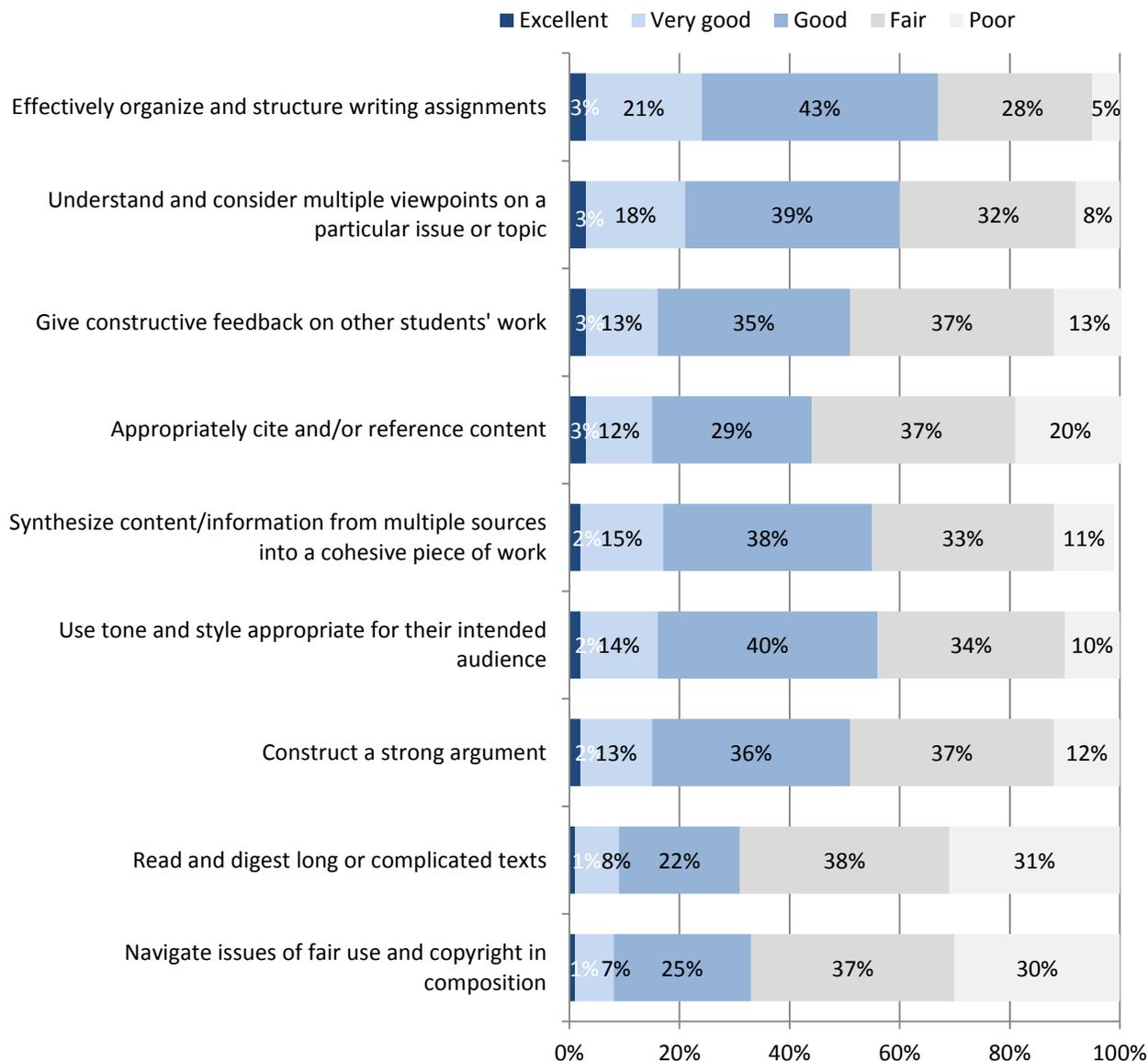
Majorities of these teachers incorporate lessons about fair use, copyright, plagiarism, and citation in their teaching to address students' deficiencies in these areas

In addition to giving students low ratings on their understanding of fair use and copyright, a majority of AP and NWP teachers also say students are not performing well when it comes to "appropriately citing and/or referencing content" in their work. This is fairly common concern among the teachers in the study, who note how easy it is for students today to copy and paste others' work into their own and how difficult it often is to determine the actual source of much of the content they find online. Reflecting how critical these teachers view these skills:

- 88% (across all subjects) spend class time "discussing with students the concepts of citation and plagiarism"

- 75% (across all subjects) spend class time "discussing with students the concepts of fair use and copyright"

A plurality of AP and NWP teachers across all subjects say digital tools make teaching writing easier

Despite some challenges, 50% of these teachers (across all subjects) say the internet and digital tools make it easier for them to teach writing, while just 18% say digital technologies make teaching writing more difficult. The remaining 31% see no real impact.

50% say today's digital technologies make it EASIER for them to shape or improve student writing

Do today's digital technologies make it EASIER or MORE DIFFICULT for you as a teacher to shape or improve student writing, or do they have NO IMPACT?

No impact 31%

Easier 50%

More difficult 18%
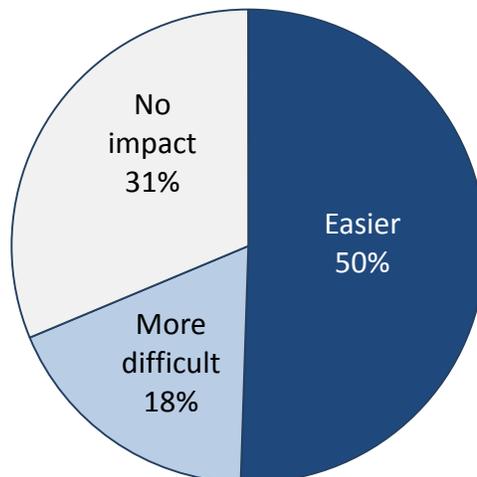
Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012. Based on a non-representative sample of 2,067 middle and high school teachers.

Positive perceptions of the potential for digital tools to aid educators in teaching writing are reflected in practice:

- 52% of AP and NWP teachers say they or their students use interactive whiteboards in their classes
- 40% have students share their work on wikis, websites or blogs
- 36% have students edit or revise their own work and 29% have students edit others' work using collaborative web-based tools such as GoogleDocs

In focus groups, teachers gave a multitude of examples of the value of these collaborative tools, not only in teaching more technical aspects of writing but also in being able to "see their students thinking" and work alongside students in the writing process. Moreover, 56% say digital tools make their students more likely to write well because they can revise their work easily.

These middle and high school teachers continue to place tremendous value on "formal writing"

While they see writing forms and styles expanding in the digital world, AP and NWP teachers continue to place tremendous value on "formal writing" and try to use digital tools to impart fundamental writing skills they feel students need. Nine in ten (92%) describe formal writing assignments as an "essential" part of the learning process, and 91% say that "writing effectively" is an "essential" skill students need for future success.

More than half (58%) have students write short essays or responses on a weekly basis, and 77% assigned at least one research paper during the 2011-2012 academic year. In addition, 41% of AP and NWP teachers have students write weekly journal entries, and 78% had their students create a multimedia or mixed media piece in the academic year prior to the survey.

Almost all AP and NWP teachers surveyed (94%) encourage students to do some of their writing by hand

Alongside the use of digital tools to promote better writing, almost all AP and NWP teachers surveyed say they encourage their students to do at least some writing by hand. Their reasons are varied, but many teachers noted that because students are required to write by hand on standardized tests, it is a critical skill for them to have. This is particularly true for AP teachers, who must prepare students to take AP exams with pencil and paper. Other teachers say they feel students do more active thinking, synthesizing, and editing when writing by hand, and writing by hand discourages any temptation to copy and paste others' work.

The basics of the survey

These are among the main findings of an online survey of a non-probability sample of 2,462 middle and high school teachers currently teaching in the U.S., Puerto Rico and the U.S. Virgin Islands, conducted between March 7 and April 23, 2012. Some 1,750 of the teachers are drawn from a sample of advanced placement (AP) high school teachers, while the remaining 712 are from a sample of National Writing Project teachers. Survey findings are complemented by insights from a series of online and in-person focus groups with middle and high school teachers and students in grades 9-12, conducted between November, 2011 and February, 2012.

This particular sample is quite diverse geographically, by subject matter taught, and by school size and community characteristics. But it skews towards educators who teach some of the most academically successful students in the country. Thus, the findings reported here reflect the realities of their special place in American education, and are not necessarily representative of all teachers in all schools. At the same time, these findings are especially powerful given that these teachers' observations and judgments emerge from some of the nation's most advanced classrooms.

In addition to the survey, Pew Internet conducted a series of online and offline focus groups with middle and high school teachers and some of their students and their voices are included in this report.

The study was designed to explore teachers' views of the ways today's digital environment is shaping the research and writing habits of middle and high school students, as well as teachers' own technology use and their efforts to incorporate new digital tools into their classrooms.

About the data collection

Data collection was conducted in two phases. In phase one, Pew Internet conducted two online and one in-person focus group with middle and high school teachers; focus group participants included Advanced Placement (AP) teachers, teachers who had participated in the National Writing Project's Summer Institute (NWP), as well as teachers at a College Board school in the Northeast U.S. Two in-person focus groups were also conducted with students in grades 9-12 from the same College Board school. The goal of these discussions was to hear teachers and students talk about, in their own words, the different ways they feel digital technologies such as the internet, search engines, social media, and cell phones are shaping students' research and writing habits and skills. Teachers were asked to speak in depth about teaching research and writing to middle and high school students today, the challenges they encounter, and how they incorporate digital technologies into their classrooms and assignments.

Focus group discussions were instrumental in developing a 30-minute online survey, which was administered in phase two of the research to a national sample of middle and high school teachers. The survey results reported here are based on a non-probability sample of 2,462 middle and high school teachers currently teaching in the U.S., Puerto Rico, and the U.S. Virgin Islands. Of these 2,462 teachers, 2,067 completed the entire survey; all percentages reported are based on those answering each question. The sample is not a probability sample of all teachers because it was not practical to assemble

a sampling frame of this population. Instead, two large lists of teachers were assembled: one included 42,879 AP teachers who had agreed to allow the College Board to contact them (about one-third of all AP teachers), while the other was a list of 5,869 teachers who participated in the National Writing Project's Summer Institute during 2007-2011 and who were not already part of the AP sample. A stratified random sample of 16,721 AP teachers was drawn from the AP teacher list, based on subject taught, state, and grade level, while all members of the NWP list were included in the final sample.

The online survey was conducted from March 7–April 23, 2012. More details on how the survey and focus groups were conducted are included in the Methodology section at the end of this report, along with focus group discussion guides and the survey instrument.

About the teachers who participated in the survey

There are several important ways the teachers who participated in the survey are unique, which should be considered when interpreting the results reported here. First, 95% of the teachers who participated in the survey teach in public schools, thus the findings reported here reflect that environment almost exclusively. In addition, almost one-third of the sample (NWP Summer Institute teachers) has received extensive training in how to effectively teach writing in today's digital environment. The National Writing Project's mission is to provide professional development, resources and support to teachers to improve the teaching of writing in today's schools. The NWP teachers included here are what the organization terms "teacher-consultants" who have attended the Summer Institute and provide local leadership to other teachers. Research has shown significant gains in the writing performance of students who are taught by these teachers.[1]

Moreover, the majority of teachers participating in the survey (56%) *currently* teach AP, honors, and/or accelerated courses, thus the population of middle and high school students they work with skews heavily toward the highest achievers. These teachers and their students may have resources and support available to them—particularly in terms of specialized training and access to digital tools—that are not available in all educational settings. Thus, the population of teachers participating in this research might best be considered "leading edge teachers" who are actively involved with the College Board and/or the National Writing Project and are therefore beneficiaries of resources and training not common to all teachers. It is likely that teachers in this study are developing some of the more innovative pedagogical approaches to teaching research and writing in today's digital environment, and are incorporating classroom technology in ways that are not typical of the entire population of middle and high school teachers in the U.S. Survey findings represent the attitudes and behaviors of this particular group of teachers only, and are not representative of the entire population of U.S. middle and high school teachers.

Every effort was made to administer the survey to as broad a group of educators as possible from the sample files being used. As a group, the 2,462 teachers participating in the survey comprise a wide

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[1] More specific information on this population of teachers, the training they receive, and the outcomes of their students are available at the National Writing Project website at www.nwp.org.

range of subject areas, experience levels, geographic regions, school type and socioeconomic level, and community type (detailed sample characteristics are available in the Methods section of this report). The sample includes teachers from all 50 states, Puerto Rico, and the U.S. Virgin Islands. All teachers who participated in the survey teach in physical schools and classrooms, as opposed to teaching online or virtual courses.

English/language arts teachers make up a significant portion of the sample (36%), reflecting the intentional design of the study, but history, social science, math, science, foreign language, art, and music teachers are also represented. About one in ten teachers participating in the survey are middle school teachers, while 91% currently teach grades 9-12. There is wide distribution across school size and students' socioeconomic status, though half of the teachers participating in the survey report teaching in a small city or suburb. There is also a wide distribution in the age and experience levels of participating teachers. The survey sample is 71% female.

About the Pew Research Center's Internet & American Life Project

The Pew Research Center's Internet & American Life Project is one of seven projects that make up the Pew Research Center, a nonpartisan, nonprofit "fact tank" that provides information on the issues, attitudes and trends shaping America and the world. The Project produces reports exploring the impact of the internet on families, communities, work and home, daily life, education, health care, and civic and political life. The Pew Internet Project takes no positions on policy issues related to the internet or other communications technologies. It does not endorse technologies, industry sectors, companies, nonprofit organizations, or individuals. While we thank our research partners for their helpful guidance, the Pew Internet Project had full control over the design, implementation, analysis and writing of this survey and report.

About the National Writing Project

The National Writing Project (NWP) is a nationwide network of educators working together to improve the teaching of writing in the nation's schools and in other settings. NWP provides high-quality professional development programs to teachers in a variety of disciplines and at all levels, from early childhood through university. Through its nearly 200 university-based sites serving all 50 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands, NWP develops the leadership, programs and research needed for teachers to help students become successful writers and learners. For more information, visit www.nwp.org.

I.   Introduction

This report is the third installment of an expansive study of middle and high school teachers by the Pew Research Center's Internet & American Life Project. The study combined a national survey and focus groups to examine teachers' perceptions of the impacts of a rapidly evolving technological environment on both their students and their role as educators. Building on a decade of Pew Internet research on the growing use of the internet and digital tools among both U.S. adults and teens, this study explores the impact of these tools on students' research and writing habits, as well as the extent to which teachers incorporate digital technologies into classroom pedagogy.

This report covers survey and focus group findings on how the internet and other digital technologies are shaping the way today's middle and high school students write and think about writing, as well as how middle and high school teachers are using these tools to teach writing. Overall, data suggest that teachers view positively the impact of the internet and digital technologies on student writing, particularly the way it expands audience for students beyond just their teachers and provides more opportunities for writing on a daily basis. Teachers report that interactive online tools have enhanced their ability to teach writing and allow them to work more collaboratively with their students. At the same time, however, teachers see some downsides to learning how to write in a digital age, and as was the case with students' research abilities, most teachers give their students only modest ratings when it comes to specific writing skills.

Pew Internet's prior research on adult and teen internet use

The current study builds on Pew Internet's extensive research on how U.S. adults and teens gather information online, communicate using digital tools, and use these tools for their own training and education. Pew Internet's prior surveys have shown that:

- Online information gathering (in the form of search engine use) tops the list of the most popular online activities, along with email[2]
- Adults as well as teens have become increasingly reliant on mobile tools, particularly smartphones, to communicate and engage with online content[3]
- Social networking has become one of the most popular online activities with teens and adults. While teens and young adults initially led the foray into this online social milieu, the past several years have seen particular growth in social network site use among older adults[4]
- Both teens and adults are heavily engaged in consuming and curating online video and pictures,

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[2] "Search Engine Use 2012" available at http://www.pewinternet.org/Reports/2012/Search-Engine-Use-2012.aspx.

[3] "Smartphone Ownership 2013" available at http://www.pewinternet.org/Reports/2013/Smartphone-Ownership-2013.aspx. "Teens and Technology 2013" available at http://www.pewinternet.org/Reports/2013/Teens-and-Tech.aspx.

[4] "Teens, Social Media and Privacy" available at http://www.pewinternet.org/Reports/2013/Teens-Social-Media-And-Privacy.aspx. "The Demographics of Social Media Users 2012" available at http://www.pewinternet.org/Reports/2013/Social-media-users.aspx.

and often remix the content available online into their own creations[5]

- Texting has become the major form of communication among 12-17 year-olds in the U.S., and is growing dramatically among adults as well[6]

Given these trends, we felt it would be useful to examine how middle and high school teachers are experiencing these digital transformations in their classrooms. These are important questions, as educators remain a main point of contact for teens growing up in a fairly new digital ecosystem. The extent to which their teachers use, understand, and are critical of or optimistic about these tools and their impact on learning all shape how often, and how effectively, digital tools are used in today's classrooms.

This is the third of three major reports emerging from the study. Issued in succession, the three reports have been guided by the following questions:

Report One: How Do Teens 'Do Research' in Today's Digital World? (released October 30, 2012[7])
- How students define and conduct research in today's tech environment
- If and how new technologies are changing how research is taught
- Whether and how the topics of digital literacy and information literacy are currently being taught in schools
- What are the key skills students need to learn to conduct effective research given today's digital environment
- Potential changes in assessments, curriculum, and the school environment teachers feel are necessary in response to today's evolving digital environment

Report Two: Teachers and Technology (released February 28, 2013[8])
- Teachers' personal use of and attitudes toward different digital technologies
- Whether and how new technologies enable and enhance teacher professional development and collaboration
- The different ways digital technologies are being incorporated into classroom pedagogy
- School policy and resource issues affecting teachers' abilities to incorporate new technologies into their classrooms
- How teachers experience and manage digital access issues among their students

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[5] "Teens and Online Video" available at http://www.pewinternet.org/Reports/2012/Teens-and-online-video.aspx. "71% of Adults Now Use Video-Sharing Sites" available at http://www.pewinternet.org/Reports/2011/Video-sharing-sites.aspx.

[6] "Teens, Smartphones and Texting" available at http://www.pewinternet.org/Reports/2012/Teens-and-smartphones.aspx. "Cell Phone Activities 2012" available at http://www.pewinternet.org/Reports/2012/Cell-Activities.aspx.

[7] See "How Teens Do Research in the Digital World," available at http://pewinternet.org/Reports/2012/Student-Research.aspx.

[8] See "How Teachers are Using Technology at Home and in their Classrooms," available at http://www.pewinternet.org/Press-Releases/2013/Teachers-and-Technology.aspx.

Report Three: The State of Teen Writing in Today's Digital World

- The specific impacts of digital technologies on student writing skills and habits
- If and how new technologies encourage student collaboration, creativity, and personal expression
- If and how digital technologies are changing how writing is taught in middle and high school classrooms

II. How Much, and What, do Today's Middle and High School Students Write?

AP and NWP teachers participating in the survey report giving students written assignments ranging from research papers to short responses, journaling, and creative writing. The type and frequency of written assignments varies considerably by the subject being taught and grade level, but on the whole these AP and NWP teachers place tremendous value on formal written assignments.

These teachers also point out that "writing" can be defined more broadly than written work assigned in an academic setting. In focus groups, many teachers noted that in addition to the "formal" writing students do for class, they are engaged in many forms of writing outside of the classroom, much of it using digital tools and platforms such as texting and online social networking. How to define these new types of writing and determining what impact they have on the "formal writing" students do in class remains an open question for many of these teachers. But most agree that among *students*, "writing" continues to be defined as assignments they are *required* to do for school, as opposed to textual expression they engage in on their own time.

The writing assignments AP and NWP teachers give their students

The survey quantified what types of writing exercises AP and NWP teachers assign to their middle and high school students. As the graphic below suggests, among this group of teachers, short essays and journaling are the most commonly assigned writing tasks. More than half of the sample (58%) report having their students write short essays, short responses, or opinion pieces at least once a week. Four in ten (41%) have students journal on a weekly basis.

Research papers, multimedia assignments, and creative writing in the form of plays or short stories, while not assigned by many teachers on a weekly basis, are assigned at some point during the academic year by most of these AP and NWP teachers. Just over three-quarters report having students complete a research paper (77%) or a multimedia project (77%) at some point during the current academic year. Two-thirds (66%) have students engage in creative writing, such as poetry, a play, a short story or piece of fiction, at least once a year.

In contrast, more specialized types of writing assignments such as writing out mathematical problems or proofs, writing up labs, writing computer programs, designing computer games, and writing music or lyrics are assigned rarely, if ever, by most AP and NWP teachers surveyed.

Types of writing assignments teachers gave students in the 2011-12 academic year

Thinking about the 2011-12 academic year, please tell us about how often, if at all, you have your students…
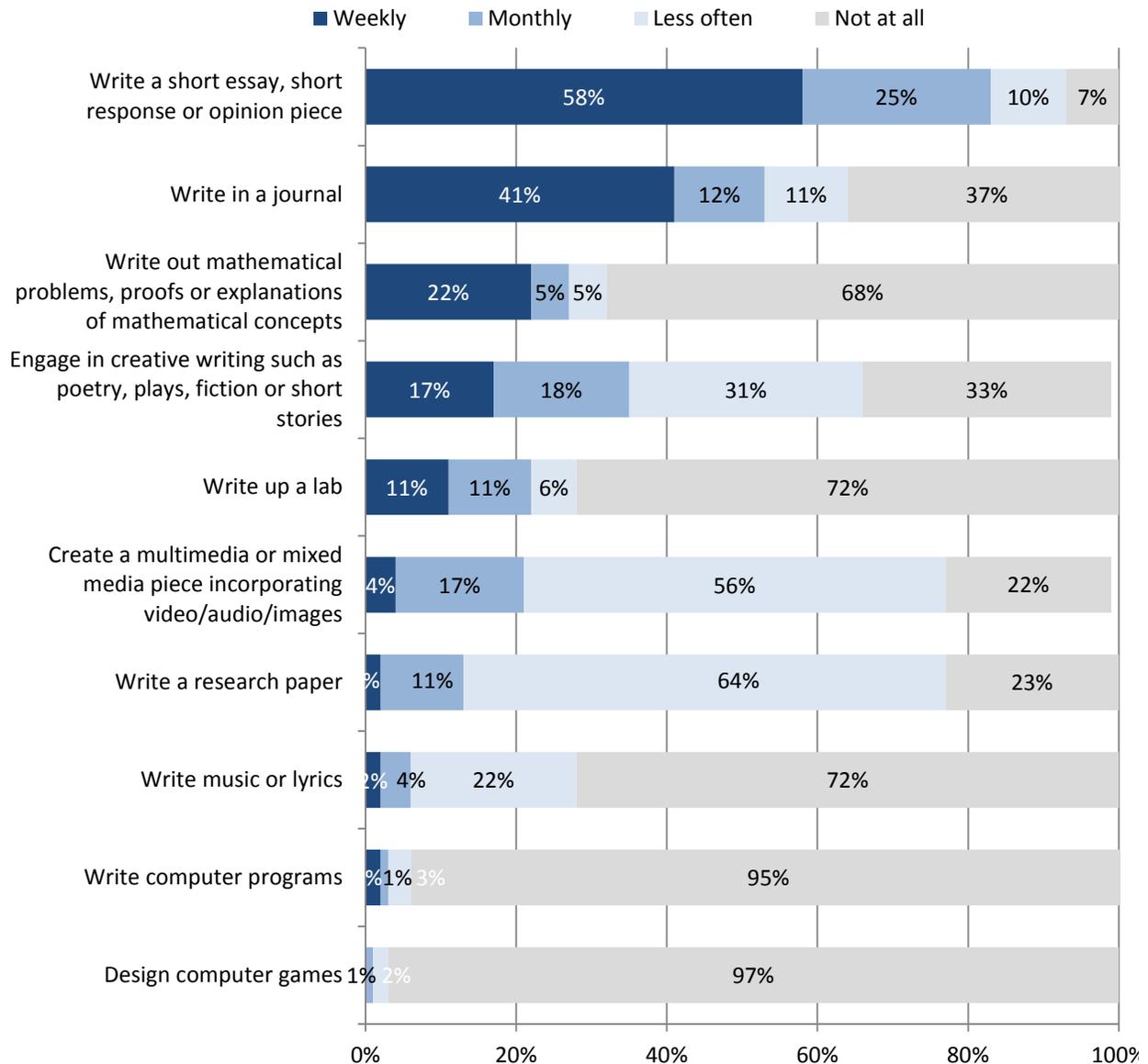
Legend: ■ Weekly ■ Monthly ▫ Less often ▫ Not at all

Assignment type	Weekly	Monthly	Less often	Not at all
Write a short essay, short response or opinion piece	58%	25%	10%	7%
Write in a journal	41%	12%	11%	37%
Write out mathematical problems, proofs or explanations of mathematical concepts	22%	5%	5%	68%
Engage in creative writing such as poetry, plays, fiction or short stories	17%	18%	31%	33%
Write up a lab	11%	11%	6%	72%
Create a multimedia or mixed media piece incorporating video/audio/images	4%	17%	56%	22%
Write a research paper	2%	11%	64%	23%
Write music or lyrics	2%	4%	22%	72%
Write computer programs	2%	1%	3%	95%
Design computer games	1%	2%		97%

Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012. Based on a non-representative sample of 2,067 middle and high school teachers.

The type and frequency of written work assigned is obviously highly dependent on the subject matter being taught. Among Math teachers, for example, 81% report having students write out mathematical problems, proofs or concepts on at least a weekly basis. And among science teachers, 51% have students write up labs at least once a week and 56% have students write out mathematical concepts or problems. All of these percentages are much higher than those for teachers of other subjects.

In addition, while 94% of English teachers and 83% of history/social studies teachers had their students write a research paper in the 2011-2012 academic year, that figure is 68% among science teachers and 36% among math teachers. A similar pattern emerges for multimedia or mixed media assignments, with English (84%) and history/social studies (82%) teachers most likely and math teachers least likely (51%) to have given their students this type of assignment in the prior academic year. Science teachers (70%) fall in the middle.

Writing assignments vary by subject matter

% who had students complete each type of writing assignment at least once a week in the 2011-12 academic year…
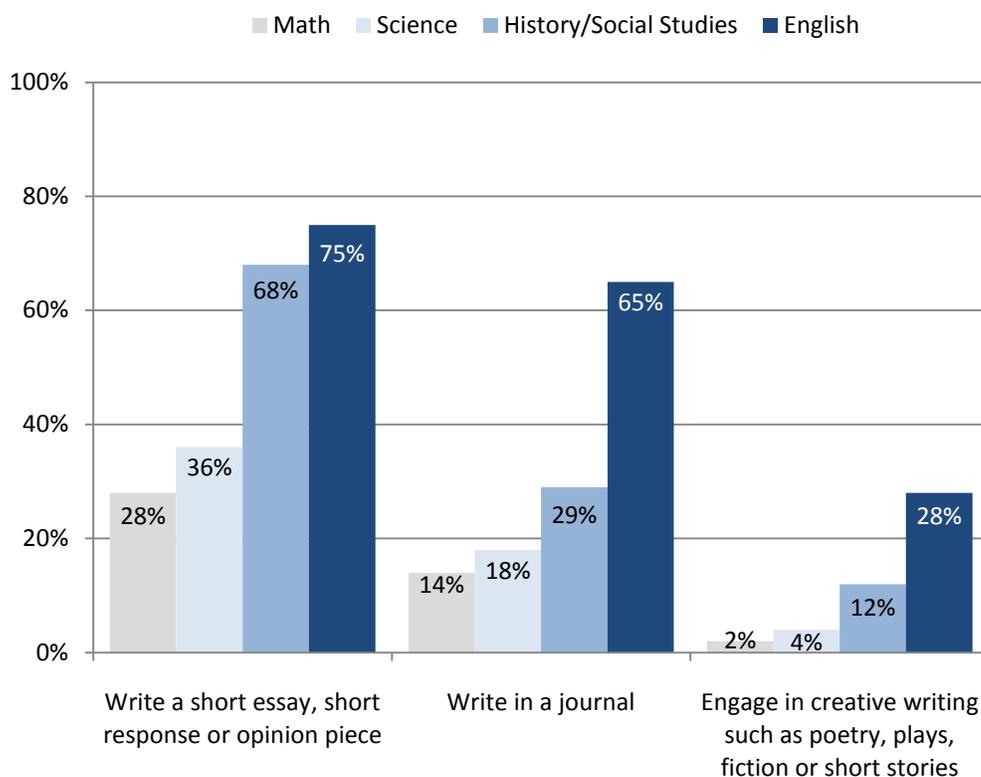
Math   Science   History/Social Studies   English

|	Write a short essay, short response or opinion piece	Write in a journal	Engage in creative writing such as poetry, plays, fiction or short stories
Math	28%	14%	2%
Science	36%	18%	4%
History/Social Studies	68%	29%	12%
English	75%	65%	28%

Source: Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012.   Based on a non-representative sample of 2,067 middle and high school teachers.

How do teachers—and students—define "writing" in the digital world?

A fundamental question posed to the AP and NWP teachers in the current study is how they and their students define "writing." Specifically, we asked teachers which forms of writing in the digital age— academic writing assignments, texting, social network site posts, blogs, tweets, etc.— are "writing" in their eyes, and which are not? In a 2008 Pew Internet survey of teens on this topic, the consensus among 12-17 year-olds was that there is a fundamental distinction between their digital communications with friends and family and the more formal writing they do for school or for their own purposes. Only the latter is considered "writing" in teens' eyes.[9] Survey and focus group findings in the current study indicate this perception has not changed, either among students or their teachers, and that there remains a fairly strong conceptual divide between "formal" and "informal" writing. For both groups, much day-to-day digital communication falls into the latter category.

Asked in focus groups to clarify what, specifically, they consider "writing," the majority of teachers indicated that "formal writing" and "creative writing" fit their definition of "writing." Slightly fewer said they would classify "blogging" as writing, and very few said they would consider texting as a form of writing. Asked how they thought students would categorize these same writing forms, the results are comparable. Most of these teachers do not think their students consider texting writing, but rather confine their definition of "writing" to those exercises they are required to do for school. A handful of teachers went even further, saying that some students define "writing" only as something that requires them to use complete sentences.

On how students define "writing," AP and NWP teachers say...

Most [students] define writing as something their teachers MAKE them do. While they do see it as necessary in academics (and even sometimes in life), few see the value and purpose in practicing writing. Most students today (even AP students) do not write enough, either in or out of the classroom.

Our kids, over the course of their lives, will write infinitely more than we ever will. I'm 43 years old--half of my life was lived without email, texting, social networking, etc. The fact is, that is writing. Kids have more access points today and those access points are literally at our fingertips and beeping and buzzing blipping...nudging us to write. Incredibly though, students do not see this as "writing."

Because students still write journals in some classes, I think they still distinguish this from blogging. I think they see journaling as writing, but not blogging quite yet. Although, I think that is starting to change as they start blogging for classes. I think blogging will be viewed as more official writing in the future.

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[9] "Writing, Technology and Teens," available at http://www.pewinternet.org/Reports/2008/Writing-Technology-and-Teens.aspx.

While most AP and NWP teachers in the focus groups said they do not consider texting, blogging, or micro-blogging (posting on social network sites) "writing" in the traditional sense, they believe these digital formats do spur thinking and encourage communication among their students, which may lead to deeper thinking and self-expression. Several teachers characterized these shorter online posts as "pre-writing" that may get a student engaged in a topic or discourse enough to want to write a longer piece about it or explore it further. In some teachers' eyes, these digital forms of expression are building blocks for lengthier, more formal writing.

On newer digital forms of writing, AP and NWP teachers say…

These digital technologies give students a reason to write. Social media and texting are very engaging for them; they write reflexively. It is not classic academic writing for sure. But, they do use the written language to communicate. This requires a certain amount of composition activity. Texters must decide the most efficient set of words to include in their message in order to convey meaning. These activities are "pre-academic writing", but nevertheless for some kids they are formative processes that can lead to more sophisticated composition skills.

Students can write and voice ideas in many different registers. It is often not "academic" writing in the sense that many teachers would consider. However, I think the kinds of real world applicability of student work in classes makes these new digital tools much more relevant for students beyond their schooling years.

I read a fascinating article that talked about the impact of micro-blogging on writing. The piece started talking about how everyone just assumed that when things like Twitter and Facebook began to become more prevalent we would see a decline in our society's willingness to take the time to write. What the article went on to explain however, was that many people who blurt something out on these sites are also actually taking the time to digest what others are saying on the matter, collaborate or chat with the others who are talking about the same thing, and then in turn they feel more compelled to go on and take the time to compose a longer piece of writing - such as a blog post. I see a lot of truth to this idea. In essence, the micro-blog has become to some their pre-writing.

Teachers in the study say today's students are expressing themselves more, and more often

Though most AP and NWP teachers who participated in the study do not characterize activities such as texting, tweeting, blogging or micro-blogging on social network sites as "writing" in the strictest sense, there is almost universal agreement among them that the digital ecology in which today's teens live provides many more avenues for personal expression. In addition, most agree that many forms of personal expression are more accessible to the average student than has been the case for past generations. Ultimately, most of these teachers see their students expressing themselves in text (and other formats) more so than was the case when they themselves were in middle and high school. Asked in focus groups, if students today simply write more, in sheer quantity, most participating AP and NWP teachers agree this is the case.

Digital technologies provide many opportunities to practice writing through participation. Mobile technologies allow one to write, capture, edit, & publish while on the go, anytime, anywhere. Be it at a museum, walk through the old neighborhood, or on a wilderness hike. Writing is no longer limited to a designated time or location.

They enjoy writing. When you talk to these kids, they like to write. They don't like to write when you tell them, 'I want you to write this.' But in fact they love to write, and when you look at what they're writing, they're talking about themselves and expressing themselves. Maybe not well but they are speaking their minds, so they are, I think, exploring who they are and what they're about and they're reading what other people are writing and looking at, and exploring other people's feelings and ideas.

The informality of the written word and how students use the language is the downside of technology, but the upside is that students are communicating in the written form much more than I ever did at their age.

The ease of accessibility brought via technology has opened the availability of writing opportunities for students today. Some devices have tempted students to write everything as if it were a text, but teacher focus on this issue can channel the text craze into more academic writing. I think like all technologies, there are good and bad points, but at least the thought processes of writing are taking place.

I think they're writing more, more than ever, and I think they have a much more positive outlook on writing, not just because of the school…you have Facebook, you have email, you have Twitter…they're writing constantly.

I was going to echo what [other teacher] said about the various increased avenues of expression. That is a good thing, without question. Just how they're being used and not used is another topic of discussion, but in terms of the impact of technology on writing, we are becoming a society that is almost more so than ever before communicating with each other through the internet word. I won't even say the written word. I'll say the digital word if that even becomes an expression. That's what we're doing.

92% of AP and NWP teachers surveyed describe writing assignments as "essential" to the formal learning process, and "writing effectively" tops their list of skills students need to be successful in life

The survey gauged AP and NWP teachers' sense of the overall importance of incorporating writing into formal learning today, and asked them to rank the value of effective writing vis a vis other skills students may need to be successful in life. The vast majority (92%) say the incorporation of writing assignments in formal learning is "essential," with another 7% saying it is "important, but not essential." Only 11 teachers out of more than 2,000 describe the incorporation of writing assignments into formal learning as "only somewhat important" or "not important."

These results are not surprising, given the large number of writing teachers in the sample and the focus on formal writing in much of the U.S. educational system. But the high value placed on writing extends

across AP and NWP teachers of all subjects. While 99% of English teachers in the sample say that writing assignments are essential to the formal learning process, the same is true for 93% of history/social studies teachers, 86% of science teachers, and 78% of math teachers.

Asked to place a value on various skills today's students may need in the future, "writing effectively" tops the list of essential skills, along with "judging the quality of information."[10] Each of these skills is described as "essential" by 91% of AP and NWP teachers surveyed. Again, while large majorities of teachers of all subjects respond this way, English teachers are slightly more likely than others to say that "writing effectively" is an "essential" skill for students' future success.
Other skills relevant to the current digital culture also rank high as life skills, with large majorities of these teachers saying that "behaving responsibly online" (85%) and "understanding privacy issues surrounding online and digital content" (78%) are "essential" to students' success later in life. Skills that fewer of these AP and NWP teachers view as essential for students' success in life include "presenting themselves effectively in online social networking sites" and "working with audio, video, or graphic content." Fewer than one in three AP and NWP teachers in the sample describes either of these skills as "essential" to their students' futures, though pluralities do describe each of these skills "important, but not essential."

Teachers of all subjects place a high value on writing, and particularly formal writing assignments, with English teachers leading the way

% of each group who say…
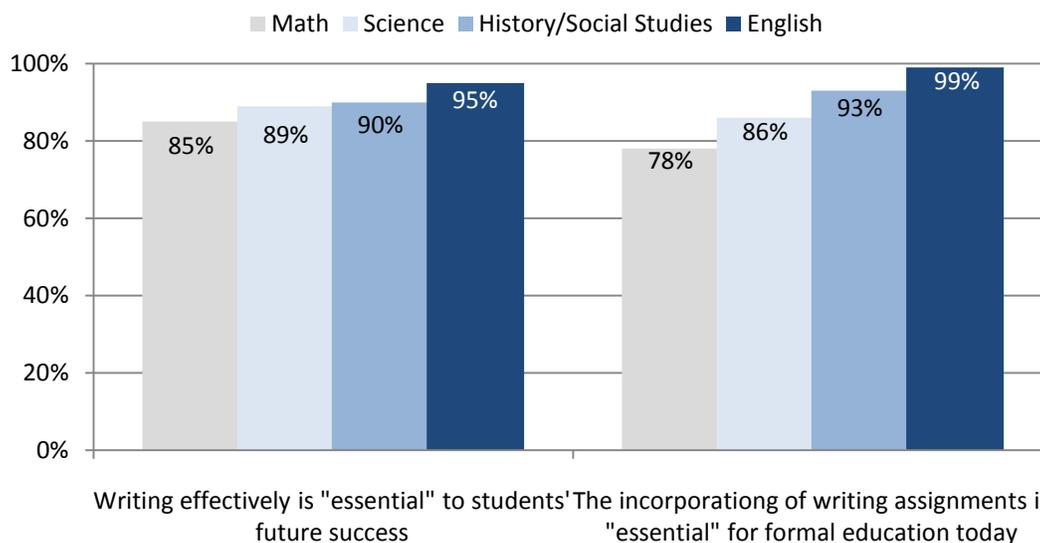
Source: Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012.   Based on a non-representative sample of 2,067 middle and high school teachers.

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[10] For more on the latter, see "How Teens Do Research in the Digital World," available at http://pewinternet.org/Reports/2012/Student-Research.aspx.

What skills do students need for the future?

How important do you feel each of the following skills is for your students to be successful in life?

Legend: ■ Essential ■ Important but not essential □ Only somewhat important ■ Not important

Skill	Essential	Important but not essential	Only somewhat important	Not important
Judging the quality of information	91%	9%		
Writing effectively	91%	8%	1%	
Behaving responsibly online	85%	14%		
Understanding privacy issues surrounding digital and online content	78%	20%	2%	
Communicating ideas in creative, engaging or interesting ways	59%	38%	3%	
Finding information quickly	56%	40%	4%	
Presenting themselves effectively in online social networking sites	31%	41%	23%	5%
Working with audio, video or graphic content	23%	54%	22%	2%
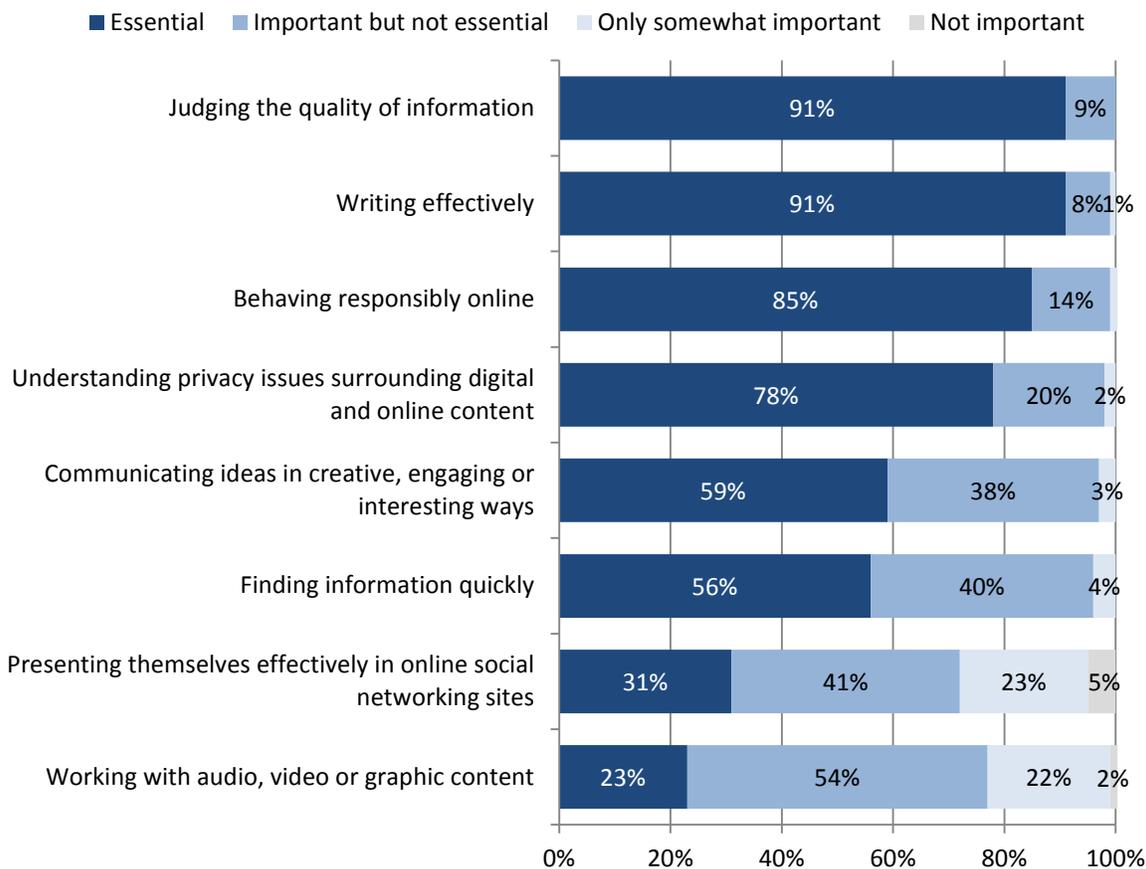
Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012. Based on a non-representative sample of 2,067 middle and high school teachers.

Do AP and NWP teachers see continued value in longer writing assignments?

The tremendous value most AP and NWP teachers place on writing of all forms, and particularly "formal" writing, was reflected throughout focus group discussions. For some AP and NWP teachers, the extent to which today's middle and high school students engage in what many see as "informal" writing means that "formal" writing assignments are more critical than ever. Moreover, many see tremendous value in longer writing assignments that require students to organize their thoughts and fully develop complex ideas (particularly because they often have to present ideas on standardized tests in this format). They see longer, formal writing assignments as an important juxtaposition to the more informal and often more truncated styles of expression in which their students regularly engage. Throughout focus groups, AP and NWP teachers expressed the belief that students must master all styles of writing in order to be successful across social domains and to communicate with different audiences.

There is great purpose and value in teaching students to write long and formal texts. Again, there are a whole lot of ideas that simply cannot be reduced simply without serious distortion or reduction. Consequently, developing complex ideas and thinking often requires longer texts. Writing is a demonstration of thinking, after all. So the deeper and more complex the thinking, the more that is reflected in the writing. As for formal texts, academia certainly requires a greater level of formality but so does a lot of work in the political, legal, and commercial world. Formal writing is almost always a factor that can be used for exclusion. Inability to write formal texts potentially robs students of voice and power. Arguably more important is the ability to recognize and adjust to the context that is appropriate for a given purpose. So knowing when and how to write with greater formality is an essential skill.

The organization and critical thinking skills that must be employed when students write a longer, more formal piece are skills that will students to become better, more engaged citizens. The processes of brainstorming, researching, evaluating, selecting, analyzing, synthesizing, revising are all skills that help students become more critical citizens, more discerning consumers, and better problem-solvers.

To carry an idea out to see if it is "true" to the thinker or not, I think this is so important. I want students to grapple with the complexity of a subject, to see it from all sides by way of a formal written response. Further, I think breaking down that response into its finer parts help me to teach the components that would go into an extended response. An example of this would be a section of their packet simply titled, DEFINITION. Before going into their response, I ask my students to define their terms and to set their parameters for the paper, not only as a service to their readers, but as a guidepost for themselves.

Writing is thinking—and, quite honestly, I don't think any of us fully knows what our writing is (will be) about until we write it. Writing develops our thoughts and allows us to grapple with the "whats" and the "whys" of life. In this respect, writing informal and formal texts serves as role playing exercises as much as they do anything else. It is practice in being critical, analytical, reflective, informative and so on. We're shipping young people out into the world where they are going to have to buy a car, a lawn mower, a stove...and they are going to want to read informative reviews before they spend their money. Writing it allows us to become familiar with it--we may never write an informative review once we leave school, but some...many...will want to read reviews before they spend their own money on something. Beyond buying something, I want to emphasize "writing is thinking is role play for life" as a cross-curricular ideal that too often becomes buried as *just* an English class objective.

Long texts give students the opportunity to deeply analyze an idea. Longer texts are essential to articulate complex concepts and beliefs. Although not everyone will be asked to write a long academic paper for their jobs, the reflection that goes behind this type of writing is critical for everyone. The process of making thinking transparent and clear to others is essential to knowing the why behind the what. The notion of form al texts supports the idea of knowing how to communicate with various audiences. The more registers a person has in his or her arsenal, the more effective that person will be when communicating with a diverse group.

I think that there is value of having long and well organized thoughts about a topic. I think that when we delve deeply into a topic and have to provide an argument or exploration then we must be able to write logically and coherently and be able to develop a point without getting off track. We must be able to write for an audience and provide evidence and delve deeply. I think there are also audience needs to be met when deciding on what level of formality we will write with so I see the value in teaching formal writing. People have to produce reports for colleagues and prospective business partners and college professors so this is obviously a skill that needs to be learned.

Writing is crucial across the curriculum. Good writing teachers teach students how to communicate a logical argument that is well-researched. At my school, I am impressed with the amount our English and history students write as well as the amount our science students write. The IB program does not have many multiple choice tests; therefore, students have to be good writers to perform well on IB exams... The IB program places such a heavy emphasis on communication that the students (and teachers) have adapted their definition to include anything that involves clearly stating ideas and explaining rationale.

While many focus group participants stressed the importance of learning to write in multiple styles—including more "formal" styles—and to write lengthier pieces on complex topics, other teachers questioned the "term paper mentality" and the tendency of some educators to equate length of assignment with complexity of thought. Some AP and NWP teachers in the study debated the value of longer textual expression today, not just for students but for society as a whole. As many digital tools encourage shorter, more concise expression, these teachers questioned whether mastering more traditional writing styles will be critical for their students moving forward. While these skills may be valued in standardized testing and in the college and university settings, there was some debate about how useful these skills are beyond those two arenas. Moreover, some teachers questioned whether lengthy writing assignments are the most effective format for teaching students specific writing skills.

On the value of longer writing assignments in the digital world, AP and NWP teachers say...

When I first started at the school there was this big thing about EVERY SIXTH GRADER had to write a research paper, big time knockout research paper. I kept asking why. Why? No one seemed to have a good answer. It wasn't in the district curriculum and it wasn't a specified mandated something from the state curriculum, so I kept asking why. Now, there were research skills that had to be taught in both the district and state curriculum, so we spent our time working on the process of research and how to find credible sources, then we did some culminating something that wasn't a research paper. It was such a rebel thing for me to do at the time, but I felt like I would either be giving every step of the process a little bit of time, or I could devote more quality time to the actual research. I think some [teachers] are definitely still stuck in the term paper mentality.

Regardless of the length of a student's writing, I think it is more important to teach students to develop their thoughts completely. If development of thought can come through length or formality then so be it. More important than length or formality would be for students to have a firm understanding about how to organize their ideas in such a way where they can effectively communicate their thoughts and ideas. I certainly don't think that a teacher should only teach any one kind or length of writing, but the most often I hear the reason we should teach students to write lengthy formal essays is because that is the way they will have to write in high school, which in turn is how they will have to write in college. While I would say there can be value in getting a student dedicated to deeply investigating a certain topic through a longer writing assignment, I would never be willing to teach kids formal writing just because that is the way they do it in high school - there would have to be another purpose.

This almost starts to get at the "how many words should this be question." I tend to find that when I say 500 words long, kids work to that end and stop. Sometimes they seem to like this better...it's easy and sure. Usually, I say to make a plan and work to thoughtful response to the assignment and the feedback from their peers. This usually drives more from their thought process that my giving them a word count. Is this a formal text? Not really, but yes at the same time. I think many teachers panic when students deviate from the 5 paragraph essay that they know and understand. The belief seems to be that this serves their needs on the near future high stakes test that are demanded on students. I'm not sure that this serves them past this point.

I don't think length is a point to pound home with any student. We need to look at the content of a students' writing the most. If that means a paper has 8-10 pages to it, then so be it, but students need to learn how to sort out what is relevant and irrelevant details and information. Students need to produce well planned, thought out papers that get to the point.

III.   Teachers See Digital Tools Affecting Student Writing in Myriad Ways

Majorities of AP and NWP teachers in the study see digital tools having several distinct, beneficial impacts on student writing, including providing a broader audience for student work, encouraging creativity and personal expression in a multitude of formats, and offering more opportunities for collaboration, interaction and feedback. Many teachers say that taken together, these three impacts of digital technologies make writing both more meaningful and less intimidating for many students, while also encouraging greater commitment to, and personal investment in, what they produce.

Yet many of these AP and NWP teachers also express concerns about how digital tools and platforms are shaping the way their students approach writing. Of most concern are what some perceive as diminishing grammatical skills and vocabulary, which they attribute largely to the informal writing in which today's students are heavily engaged. In addition, some AP and NWP teachers worry that rather than encourage greater understanding of and appreciation for different audiences, digital tools actually blur the boundaries between formal and informal audiences and discourage student sensitivity to these distinctions. Finally, many of these middle and high school teachers worry that their students are losing the ability to develop, organize and express complex thoughts because they generally communicate in more concise forms of expression.

Majorities of AP and NWP teachers see digital tools benefiting student writing in several key ways

Asked whether they agree or disagree with a series of statements about potential impacts digital tools may be having on today's students, majorities of AP and NWP teachers in this sample agree that:

- Today's digital technologies allow students to "share their work with a wider and more varied audience" (52% strongly agree, 44% agree)

- Today's digital technologies "encourage student creativity and personal expression" (26% strongly agree, 52% agree)
- Today's digital technologies "encourage greater collaboration among students" (23% strongly agree, 56% agree)

In focus groups, teachers spoke at length about how these three perceived impacts benefit student writing. Many said that not only are their students are doing considerably more writing outside of the classroom than they would without these digital tools, but they have the unique experience of writing for broad and varied audiences because of the internet. Exposing student writers to a wider audience via online platforms is a considerable change from a time when only one's teacher and perhaps a few classmates would read a student's writing.

Not only do many of these teachers use online platforms such as GoogleDocs to have students edit each others' work in a public way, but many have students work together on Wikis, use whiteboards to share and edit student work in class, and have students "publish" their work in other online forums. While

teachers acknowledge that some middle and high school students may struggle in this more public learning environment, overall these AP and NWP teachers felt that more students benefited from writing for a broader audience than were inhibited by it. Many of these teachers see exposure to a wider audience as an opportunity for students to get more diverse feedback on their work, which encourages them to think more consciously about audience as they write, and in turn leads to greater investment in what is written.

In addition, many AP and NWP teachers noted that digital tools encourage personal expression in many forms, not just "writing." This benefits students who might otherwise struggle to express themselves in formal writing, and pushes those more comfortable with self-expression to be even more creative. According to these teachers, the many diverse forms of self-expression available today make the process of communicating one's ideas less intimidating and more accessible for students today. Several teachers noted that for many students, digital tools take the "scary" factor out of "formal writing."

Teachers' views of potential impacts of today's digital ecology on students

Do you agree or disagree with each of the following statements?
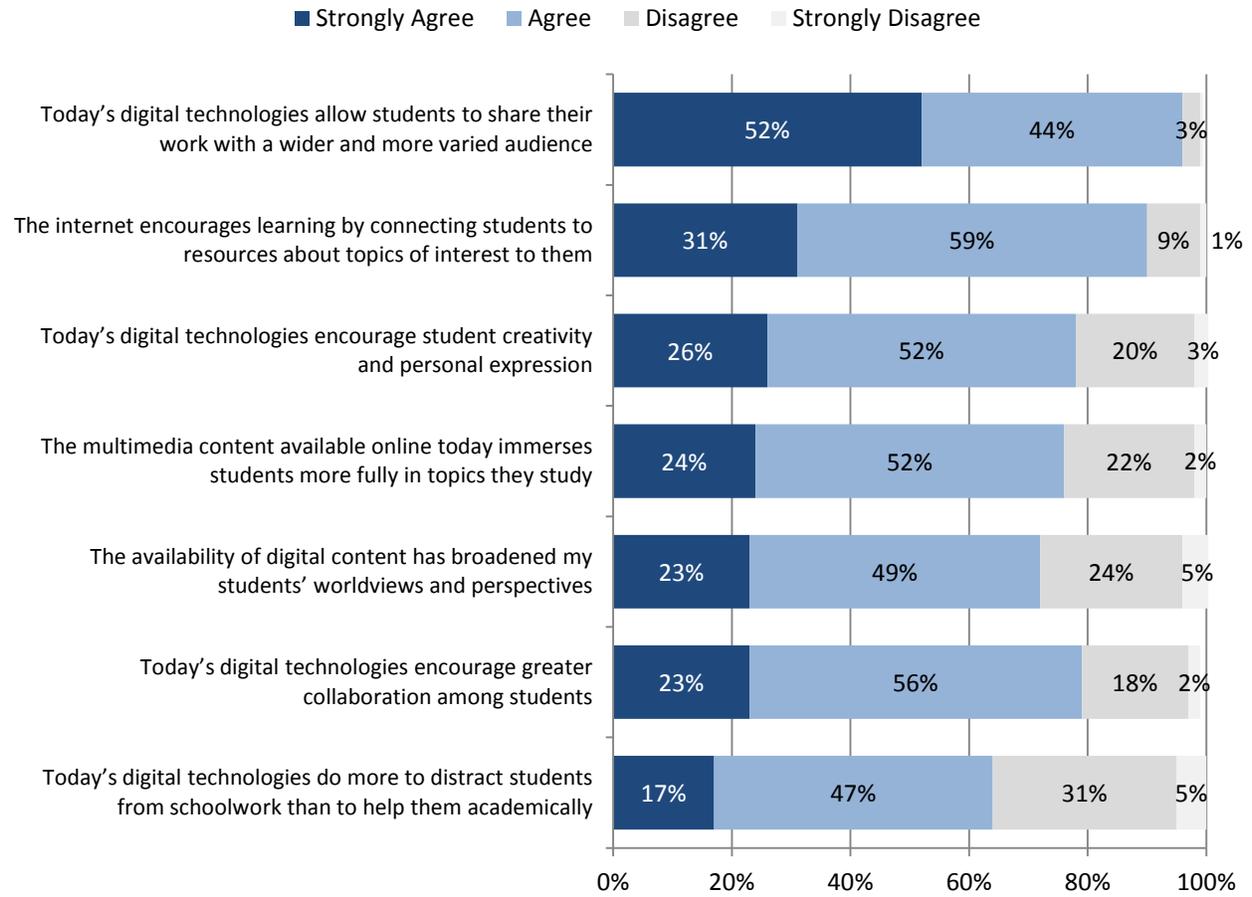
■ Strongly Agree ■ Agree ■ Disagree ■ Strongly Disagree

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
Today's digital technologies allow students to share their work with a wider and more varied audience	52%	44%	3%	
The internet encourages learning by connecting students to resources about topics of interest to them	31%	59%	9%	1%
Today's digital technologies encourage student creativity and personal expression	26%	52%	20%	3%
The multimedia content available online today immerses students more fully in topics they study	24%	52%	22%	2%
The availability of digital content has broadened my students' worldviews and perspectives	23%	49%	24%	5%
Today's digital technologies encourage greater collaboration among students	23%	56%	18%	2%
Today's digital technologies do more to distract students from schoolwork than to help them academically	17%	47%	31%	5%

0% 20% 40% 60% 80% 100%

One way these tools help young writers is to see their work in another forum. Many students are used to only "desktop" publishing. They write on their desktop, finish their writing, and put it on the teacher's desk. I have found that students take a closer look at their writing when they know that the audience will include their peers. At RAW INK Online, their work is often seen by teachers and authors from outside of our school. So, students take a closer look at their blog posts and responses. Through having students share their writing with their peers in these modalities, I have seen them become more at ease with the writing process. They are more willing to put their ideas down in writing when writing for an authentic audience. The students begin to develop an awareness for the need to write/communicate in a way that makes sense to the reader and communicates clearly their intended message.

Based on my own personal experiences I would have to agree that today's digital technologies have provided students more opportunities to develop and share their thoughts creatively. When I was in school, if I wanted my voice to be heard by more people than just my three best friends, I would have had to write something up to submit it to the school newsletter or the local paper. Whether or not what I wrote was published would then be left up to the one editor that read my piece. Today I can simply tweet something to my several hundred followers and immediately incite some kind of response. Personally, I feel my voice matters more because I know that when I tweet something or post it to my blog it has the potential to be read by a lot of people, and the positive feedback that I receive when I do post propels me to want to write more. I know my students feel the same way. I have seen a heightened sense of responsibility on the part of my students to be more thoughtful in articulating their ideas because they know others will read their work. Additionally, I have seen where students feel empowered to contribute on seemingly niche subjects (specialized knowledge about video games, etc.) because they know they have knowledge that will add to what is being shared on the web about that subject.

For my students, this is an issue of communication, of meeting the standards not only as writers, but as people very aware that the audience is not their teacher, but a much broader venue. I try to help them see a bigger space for their writing than just the four walls of our room. For my students it comes down to developing something to say, and then creating the most effective means to say it. Their writing is not really "long, formal writing," but rather it's writing that gets their point across in the most effective way, developing a sense of style (not necessarily formal) and engaging an audience. We spend a while unpacking the relevant standards - drawn from the Common Core, and, a key component is engaging an audience and orienting them to a point of view of specific context for the issue. So, effective writing is a key part of that, but for most of the work my students do, writing is one component, and at times it's just a basis for the videos or other multimedia they'll create.

When my students make digital films we screen them together, talk about their work together, and then students subsequently post links to their films on Facebook, etc. So, if a kid is engaged, this writing has a whole new element that traditional writing did not have. The audience enlarges, the retrospective self evaluation increases and the com position matters m ore because it will be publically shared.

In my experience the extended audience provided by online writing encourages students to be more deliberate and thoughtful. My students have been using a Ning and m ore recently their own blogs to post writing pieces and then use the comment features to provide peer feedback. While at first students were hesitant and shy both to post work and make thoughtful and useful comments about others' writing, once the routine was established and the community proved to be a safe one, student writing has benefitted.

Another thing that I love is the authentic audience that digital tools can provide for students. I have my students blogging—meaning that students "publish" a variety of different types of writing to a public site where anyone can read and comment on their work. I had a student share that a pastor from somewhere in the country had commented on her blog. She was beyond ecstatic to read that someone thought her work was excellent. I can, and do, tell her that all day long, but when she hears that from someone else she is convinced. I have seen students able to develop a stronger voice in their writing when they post it to their blog as opposed to them just turning it in for the teacher.

GoogleDocs is used as a drafting and revision tool that can easily be shared among one another. We engage in response writing on a daily basis to: a TED talk, or a Podcast, or an episode of This American Life. These responses are posted onto the schools Ning to be shared with the class as a whole and can be seen by other educators. These formats allow the students to share their thoughts, interruption and understating of the material with one another in a real time form. It's all about connecting. I believe that students are reading, writing, creating and sharing more than ever through digital media. By being able to connect with others they remain invested and passionate about what they are creating.

I think writing becomes less hinged on the types of length requirements I remember focusing on in high school and college. We are a more collaborative writing group: editing our school Wikipedia page, editing work simultaneously on GoogleDocs or sending texts via polleverywhere means everyone is producing and authoring short and long texts simultaneously. Writing can feel less high risk as a result.

I think we've always been a creative species that has produced a lot of thoughtful articulation of ideas. I don't know that digital technologies have really changed that. And there have always been a lot of opportunities to write. Back in the day I wrote a lot of songs, poems and stories in notebooks, on napkins and scraps of paper; my students today do more of that kind of drafting digitally. I think what's different now is the conversations around writing. There are more ways writers can talk back to others about their compositions now – chats in Google Docs, via comments on their Flickr content, etc. The opportunities to collaborate have created more chances to converse with a more diverse audience. Writing is m ore social now, and my students are much more aware of audience than I was when I was a teen.

Digital technologies have allowed my students to be more collaborative in their writing experiences and to experience writing for a larger audience. My expository writing class is now a high school version of a blended course. Students are able to respond to one another through an online academic social network. Through this site they brainstorm together, share responses to writing in forums and share resources through shared links and wiki creation. They also share their writing through sites like GoogleDocs or wiggio. We even collaborate on how we pace our writing assignments through an online calendar. Students research together by sharing links through diigo. In my freshman class students are able to use elireview.com for online peer review, which is especially nice for them so they can easily share their writing and focus their responses to one another. We also collaborate with other classes. We have six American Literature classes at my high school and we're all connected through our online academic social network. We post on forums and create wikis together and share resources across classes. Students now have around 180 peers as their audience for a lot of their writing, instead of just a teacher or one class.

I teach at a New Tech school, in which everything we do is a project-based learning model and our projects are always completed collaboratively, whether in pairs or larger groups. My students use GoogleDocs extensively as they move through their projects for planning and then com position. I think the collaboration allowed on GoogleDocs is really changing the way people and our students write. Most of the students I teach have been learning in this model for the past three years and for the most part have been using GoogleDocs along with other digital tools increasingly during that time. At this point they are very comfortable writing with one another, editing each other's writing, and accepting feedback from one another. I love the transparency of GoogleDocs as well - the history is all there for students and teachers to revisit past editions and know who has contributed what.

I have seen students more willing to go back and revise or improve their work in order to provide more clarity when using digital tools than when they are writing it on paper. Many times after we have had a conference I hear students saying, "Ok, can I go back and fix that?" It's music to my ears. I am actually interested in seeing how digital writing plays out a little more because I think it does give us more reason to go back and evaluate, fix, add to, change any given work over time.

I strongly agree that [digital tools] encourage developmental skills such as creativity. There are so many wonderful platforms available to students and they can express one single idea in so many ways. If students read a book, they don't have to do a book report, they can create a blog, a glog, or a digital video about the book.

I think this generation of students have many more opportunities, not only to write (in many forms) and learn to express themselves, but the added benefit that social media and GoogleDocs have to offer is to provide them with an audience for these thoughts and expressions. We know our students can write-- they text all day. My students' expressions make up the majority of my Twitter stream. While in the past we may have written in our diaries and journals and hid them under our pillows, students today write and post their feelings for the world to see. I do see this as helping them to articulate their thoughts and I often wonder what the effect is of them having an audience, the opportunity for immediate two-way communication or at least validation of their musings (the Like button) and what that does to their confidence as writers/thinkers.

I think students are writing and reading more because of their online lives than ever before. But it's not just writing, of course. I have students who are reluctant, ill-educated writers who produce videos and organize websites. There is a lot more self-directed learning happening now than I've seen before. And it's exciting to get out of the way of this.

Actually, I tend to disagree more with this idea than agree. There is definitely a higher volume of writing [in the digital age], but the purpose and audience for most students' writing is not automatically an invitation to greater creativity or more thoughtful articulation. There is an emphasis placed on speed and immediacy that actually can eat away at creativity. Moreover, the thoughtful articulation of ideas is compromised by a widespread expectation that all writing should be short and direct, which may not always be clear.

With all of these technologies, I think writing is at the heart, but our students are also driven to take it a step further to include video, sound, hyper links, images, animation, etc. That's a huge boost in creativity.

In focus groups, AP and NWP teachers were careful to point out that simply having access to a wider audience and more platforms for self-expression does not necessarily translate into effective writing and communication. Writing for varied audiences, and particularly writing for online audiences, is a skill that must be taught. Likewise, communicating in the appropriate style for a particular venue and/or audience is something many students have not mastered, according to these teachers. As a result, many teachers report spending class time teaching just these skills.

On collaboration, AP and NWP teachers say...

The ability to have wider and more frequent conversations about their composition I think has helped my students' writing. But just having the potential for wider conversations and a larger audience doesn't always mean more people are listening. I mean, we've got to explicitly teach the art of online conversation.

Like reading, I think writing is also about thinking and learning. A former student said that writing a research paper for my class and then repurposing it for larger audiences [as a blog post] allowed her to think in an organized manner and critically read and apply her thinking in ways other experiences did not. She felt she learned how to think and develop extensive ideas through the process of writing a long formal text. She then had to reexamine her research and repurpose her work for another audience. She felt that experience continued to challenge her thinking about the ways in which writing and researching relate to various life situations. Additionally, she suggested that students may read blog posts on their own, but the challenge of reading and synthesizing material based on scholarly research was one students needed to be challenged to do through an academic environment. So, research paper or blog...it all has to relate back to thinking and learning with purpose.

I do feel like students are writing more than I did. Instead of notes, students are sending texts and emails, instead of calling, students are messaging. There is so much more communication centered around writing today. One thing we do need to address is the careful crafting of these electronic messages. They are easily misinterpreted without the visual and verbal cues. This is where intention, audience, tone, etc. need to be taught. It's the whole notion of identity and perception. How did you mean to represent yourself in that message? What do you think the perception of your identity and your message is by others? These are skills that need to be addressed and taught.

I think it is important for students to have a sense of a discourse community when it comes to researching and sharing out from that research. To understand that one side of the continuum are the blissfully-unaware and on the other are the highly-qualified respondents. When they draft a response, revise a paper, post a blog, enter a discussion thread, they become—almost automatically--a part of that discourse community. Can the student self-identify where they appear upon this continuum? What might this tell the student about their place in the conversation? To which end do they stand with the response they are offering when they offer it?

These technologies also have helped my students understand various rhetorical situations for their writing because we explore how our academic social network is different from other sites or other writing experiences. For instance, some Facebook qualities are in our site, but students know they also have a very formal audience for their work too. I think teaching about concepts of writing actually makes a lot of sense when we are direct in explaining how writing is impacted by audience and purpose and medium. Students understand that texts have characteristics that research papers do not and they understand that they need to be mindful of the differences in writing based on audience, purpose and medium of writing.

Overall, when these three key impacts are taken together – a broader audience, increased opportunities for creativity and personal expression, and greater collaboration – the vast majority of AP and NWP teachers participating in the study see a tremendous upside to writing in the digital age. In focus groups, teachers repeatedly used the words "investment" and "engagement" to describe the impact

On whether today's students are more invested in their writing, AP and NWP teachers say...

In thinking about digital writing and the potential for audience, I think that idea of someone beyond myself reading their work is a real key factor in what drives many of my students to extensively stick with a piece of writing and keep digging in, revising, working on things m ore, and really feeling an investment in a piece. I know that at the start of one of my courses, when students understand that the writing we'll be doing is for a mass audience, the idea can be intimidating for some students right off, but once they understand that they have extensive support from me as their coach, and that we have a process where work is developed and really built, then that apprehension goes away. Once we get to the stage where we're ready to publish work, students are so proud of what they've produced that they're psyched to see it going public. So, I've steadily seen students having a real investment when they are writing publicly.

I see an improvement in students' writing as a result of new technologies in the classroom: Students are more aware of audience and thoughtfully consider their purposes for writing and what readers will gain from their work. Shy students often come alive online in ways they don't in class because they have time to think and compose before sharing their ideas and opinions. My students respond to each other's writing through our Edmodo page and learn how to provide constructive feedback. Technology tools increase students' engagement and interest in writing. Students collaborate more through Googledocs, Edmodo, and our class blog. Students consider their online presence.

In a way, technology has made writing for a public audience less intimidating. If we exploit the possibilities of using these forums to share ideas and to enhance writing skills, that would be a very exciting thing. So, our goal may be to go forth and eradicate the poor grammar and spelling, as well as the odd contractions (might've???) and get our students' work out there!

I still know some teachers that insist students hand write everything because she doesn't want them cheating on their notes. To her there are a lot of negative thoughts about using technology because it makes it easier to cheat. I don't guess she realizes they cheat more on her assignments than they do mine. For her the other problem is that the teacher has to relinquish a little more control to the students if you are allowing the students to collaborate and think freely. I find that a huge benefit, but other teachers who have to be in 100% control all the time, find the use of technology a huge downside. For me, the negative impacts are minor because real world connection, collaboration, and creativity kids are able to use when using technology far outweighs any of the negative things.

they see digital tools having on student writing.

Along with these benefits, 68% of these AP and NWP teachers say digital tools make students more likely to take shortcuts and not put effort into their writing

Asked about specific impacts digital tools may have on student writing, AP and NWP teachers in this sample expressed the greatest concern about these tools increasing the likelihood their students will "take shortcuts and not put effort into their writing." Just over two-thirds of these AP and NWP teachers (68%) say that digital tools are having this impact. Fewer teachers, but still a sizeable percentage, also say these tools make students more likely to "write too fast and be careless" (46%) and more likely to "use poor spelling and grammar" (40%). (On the latter measure, teachers are fairly divided, with 38% saying digital tools make students LESS likely to use poor spelling and grammar – an indication of the tension between the positive and negative effects of automated spellcheck and grammar check.)

This question was originally posed in a 2007 Pew Internet nationally representative telephone survey of teens and their parents. At that time, 49% of teens 12-17 said the use of computers and other digital tools for writing made them more likely to take shortcuts and not put effort into their writing, and 41% said that digital tools make them more likely to write too fast or be careless. In addition, 42% said these tools make them more likely to use poor spelling or grammar. Parents' views in the 2007 survey generally aligned with those of their teens.[11]

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[11] "Writing, Technology and Teens" available at http://www.pewinternet.org/Reports/2008/Writing-Technology-and-Teens.aspx

Digital technologies are perceived as contributing to both positive and negative writing skills and habits

% of each group who say using computers and other digital tools for writing…

	Makes students MORE LIKELY to do this	Makes students LESS LIKELY to do this	Makes NO DIFFERENCE in this regard
Take shortcuts and not put effort into their writing			
2012 Teachers	68%	10%	22%
2007 Teens	49	13	37
2007 Parents	45	14	35
Write better because they can revise and edit easily			
2012 Teachers	56	19	25
2007 Teens	59	10	30
2007 Parents	69	11	17
Be creative			
2012 Teachers	50	12	37
2007 Teens*	44	12	43
2007 Parents*	50	10	36
Present ideas clearly			
2012 Teachers	46	13	41
2007 Teens	44	9	45
2007 Parents	54	7	34
Write too fast or be careless			
2012 Teachers	46	19	35
2007 Teens	41	16	43
2007 Parents	40	13	41
Use poor spelling and grammar			
2012 Teachers	40	38	22
2007 Teens	42	19	38
2007 Parents	40	28	30
Communicate well			
2012 Teachers	32	28	41
2007 Teens	36	12	51
2007 Parents	43	18	36
Write in multiple genres and styles			
2012 Teachers	24	13	63

English/Language Arts teachers have the most positive view of the impact of digital tools on student writing

On all three of these measures, English teachers in the sample express the most positive view of the impact of digital tools. They are the least likely to say that digital tools make students more likely to take shortcuts in their writing, use poor spelling or grammar, or write too fast and be careless.

English/Language Arts teachers are the least likely to see digital tools having negative impacts on student writing

% of each group who say digital tools make their students MORE likely to…
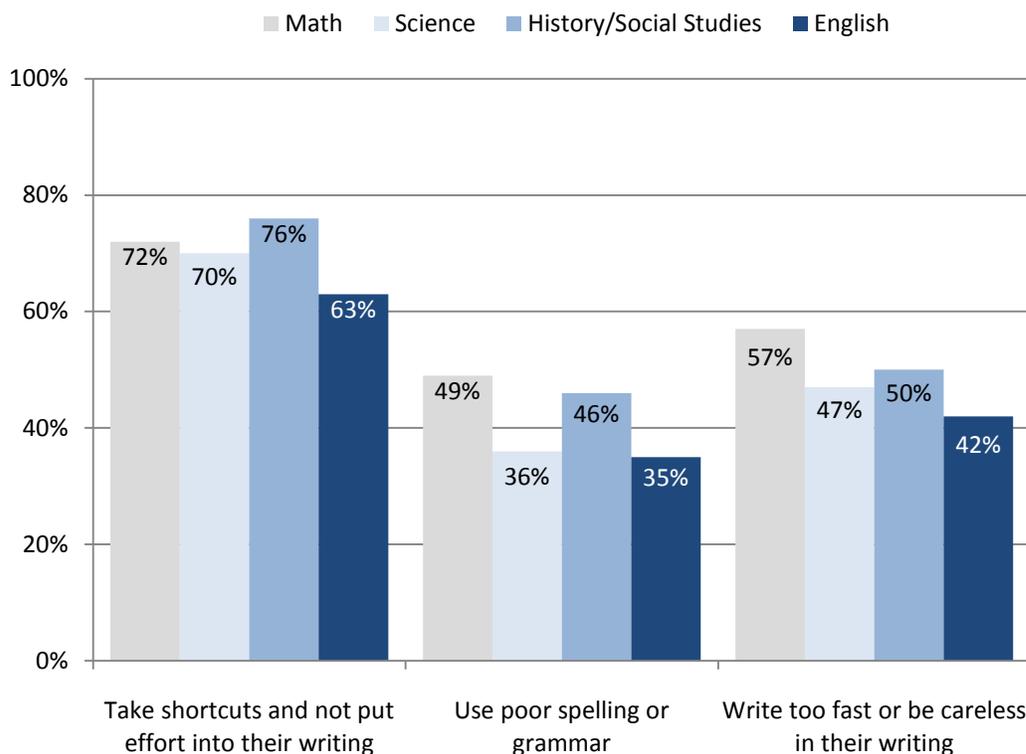
Source: Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012. Based on a non-representative sample of 2,067 middle and high school teachers.

Conversely, most AP and NWP teachers surveyed (56%) say digital tools also make students more likely to revise and edit their work

Reflecting the mixed impact teachers see digital tools having on student writing habits, many note potential positive impacts as well. More than half of the AP and NWP teachers in the sample feel these technologies increase the likelihood their students will revise and edit their work. In 2007, a similar percentage of teens (59%) said this was the case. Math (64%) and English/Language Arts (60%) teachers are more likely than both science (53%) and history/social studies (48%) teachers to feel that digital tools are having this positive effect on student writing.

Also on the positive side, a plurality of teachers (50%) say digital tools make students more likely to "be creative," a finding which is consistent across AP and NWP teachers of different subjects. Yet on other potential impacts, these AP and NWP teachers are divided. For example, 32% of AP and NWP teachers surveyed say today's digital tools make students MORE likely to communicate well, but almost as many (28%) say these tools make students LESS likely to communicate well.

Despite lengthy discussion in focus groups about the benefit of learning to write for varied audiences in today's digital ecology, just 24% of AP and NWP teachers feel that digital tools make today's students MORE likely to write in multiple genres and styles. Instead, most teachers (63%) say digital tools have no impact on student writing in this regard.

Focus group discussions revealed some additional concerns about the impact of digital tools on student writing

In addition to the concerns captured in the survey of AP and NWP teachers, focus group discussions revealed other concerns these teachers have about the potential impact of digital tools on student writing. In these discussions, three main concerns emerged:

- diminishing grammatical skills and vocabulary,
- an increasingly blurry line between formal and informal writing, resulting in the creep of "text speak" into formal writing, and
- a general emphasis on short forms of expression

As use of today's digital technologies—including the internet, cell phones and social networking sites—becomes more prevalent in the classroom and in students' personal lives,[12] some AP and NWP teachers say the overall quality of student writing is declining. The clearest evidence they point to is the "creep" of more casual language and grammar (sometimes referred to as "textspeak") into students' academic writing. Because more informal settings such as texting and social network site posts have distinct norms about what is acceptable (such as incomplete sentences, misspellings, widespread use of abbreviations, a generally informal tone), some AP and NWP teachers worry that they ultimately undermine students' formal writing.

While some AP and NWP teachers in the study described these informal expressions as a unique language or register that can benefit student self-expression when used in the right venue, others worry that their students are increasingly unable to draw a distinction between informal and formal writing. In focus groups, teachers were divided as to whether the transference of rules and norms from one writing domain to another was the result of students simply not recognizing the distinction across domains, or if it was *conscious disregard* for those distinctions.

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[12] New teens report

On GRAMMAR and VOCABULARY, AP and NWP teachers say...

Technology has increased the amount of writing students do, but decreased the quality. For instance, instead of writing letters, quick texts are sent instead. Also, students use substandard grammar, or become overly reliant upon spelling and grammar checkers on the computer.

The single biggest negative impact [of digital technologies is] poor writing skills and verbal skills. Yes, so the use of word processing programs and spell-check and all that stuff is wonderful, but they rely on it so much that even when it changes their thoughts and words and it doesn't even make sense anymore because they've put in words that they've substituted words for misspelled words that don't even make sense, it hinders their ability.

I tell them, I have sophomores and juniors and I tell them, read pre-1970 writing. It's richer vocabulary. Most of them have very poor vocabulary just because they simply do not read books and they certainly don't read things written before the 1980s.

"The one that always jumps out at me and I find really frightening is they have horrifically bad vocabularies. I primarily blame that on just simply not reading and certainly not reading anything with any challenge to it. Like a lot of the more recent books that they will read, they just don't have the depth of language. They don't have that complexity of language or the complexity of vocabulary."

In addition, some AP and NWP teachers note a potential decline in vocabulary and grammatical skills among their students, exacerbated by an overreliance on automated grammar, spellcheck and dictionary tools built into word processing programs. While these tools have unquestionably made word processing faster and easier, and can benefit students when used thoughtfully, some teachers worry they can also undermine students' understanding of and attention to basic writing principles.

Texting has spilled over into so much of my students' writing that trying to decipher what they are writing has become difficult. They don't see the problem, and feel that as long as they have written something, it should be accepted no matter how it's written.

Although my students probably don't see texting and entries on Facebook as writing, I guess they are still writing. However, I have seen the negative effects because much of this writing uses incorrect grammar, spelling, and capitalization. I have a hard time with some students using the lowercase i and abbreviations in their essays.

I think my students would say that any 'writing' they do is for specific assignments in classes, essays, research papers, etc. Outside of the classroom they are texting a lot. While texting is a form of communication, it is not 'writing' in my opinion, and because of texting, I think there are some serious issues that are surfacing more and more these days. A lot of students don't know how to write a complete thought. They can't use correct punctuation, and they don't start sentences with capital letters. They are supposedly learning all this in class, but it is their outside communication that seems to predominate in their ability to communicate. There is a definite laziness happening with the students and writing.

I see them as minor issues. I see Text Talk as another language. There's a time and place for it, but not everyone understands it. Still, there are those contexts where it is socially acceptable and expected. I wouldn't rob them of that, but it is my job to teach them how to negotiate the many registers and codes they use in language every day. To me, this code-switching is an important part of being literate.

What is hard to discern is how much of this is due to the influx of all the technology at their fingertips and the actual developmental stage of a typical adolescent. There is a definite challenge for many students in making adjustments in formality and purpose, because so much of the writing they do is casual in nature, mainly due to the array of digital technologies afforded to them driven by instant connection. Adjusting to an academic mode, for example, proves more difficult than might be expected.

Texting may have a negative impact on students' writing in that the informalities of texting are definitely seeping into their writing, but that is not what I want to comment on. Texting has created a greater connection between myself and my students and an ability to respond quickly to their questions. My students often text me with questions about assignments and I love that I can quickly and easily answer their questions.

I believe that writing has been somewhat negatively impacted by technology. With texting is a key form of expression there is little thought or effort put into essential elements of writing, such as spelling, grammar and exposition. That transfers over to students' attitude about writing for school assignments.

The biggest challenge is to get them to write well in a math class. They do not feel it is important because to them math is "not English class." Because of the prevalence of texting, they are lazy writers and expect you to "know what they meant" when they poorly word responses.

Automated word processing tools, and the speed that accompanies them,may contribute to an additional concern expressed by AP and NWP teachers—a lack of patience among some students to execute longer writing assignments. Some teachers in the study question whether a growing cultural emphasis on speed and on truncated forms of expression (from tweets to status updates to blog posts) has conditioned students today to write, and think, in morselized, less developed pieces. These teachers are particularly concerned that what appears as impatience or carelessness is actually a diminishing set of cognitive skills in this area, or a lack of appreciation for subtly constructed arguments.

On TRUNCATED EXPRESSION, AP and NWP teachers say...

The effects [of digital tools on writing] are both positive and negative. Students are expressing their opinions more. I think my students are thinking more about what is happening in the world because of technology. They are communicating more in written form with texting, social networks, etc. However, and this is the big problem, they are not doing it well. They have more opinions, but they cannot express them in a complete manner. I have also noticed that it seems to take the students longer and longer to write essays these days. Because they are only used to writing little snippets of information, when they actually have to write a short essay of substance (2-3 short paragraphs, a 15-minute assignment) it takes them a half hour or more.

One big thing that is apparent to me is that students actually write a lot m ore than we often believe. What, how, and why they write might not be what is always desired in school, but it seems to me they actually do write more than ever. What is interesting is that very few think of themselves as writers. There seems to be a disconnect. So a lot of writing has a careless quality to it. The writing is sloppier and unpolished more often than not. For example, ask them to write or develop some kind of personal correspondence, regardless of mode, and they are more able to be successful.

Most students lack craft, which certainly is not new, yet because they spend so much time engaged in these sort of shorter, more direct, unruly writing tasks, there can be a tendency to resist technique and craft instruction. Thus, truly developing anything at sophisticated level of depth is difficult. So the prospect of writing with longer, complexly constructed structures, modeled on the likes of sentences from Faulkner or Dickens takes a lot of assistance. In fact, the writing is directly linked to the reading, where many struggle to unpack even mildly sophisticated text in reading, because they have an ingrained expectation that everything can be short and direct, even if they intellectually understand the limitations of the expectation. It is common for students to see pieces of writing as repetitive, rather than recognizing the subtle wrinkles or different color that might be used in restatement of an idea or theme. In their own writing, they tend to think of development as "filler."

IV. Teachers Assess Students on Specific Writing Skills

Asked to assess their students' current writing skills, these AP and NWP teachers give students modest ratings. Despite seeing many positive effects of today's digital tools on student writing, teachers rate the actual writing skills of their students as "good" or "fair" in most cases, rather than "excellent" or "very good." On each of nine specific writing skills asked about, a majority of these middle and high school teachers rate students "good" or "fair," indicating most view their students' writing skills as average and needing improvement.

Teachers rate most students' writing skills "good" or "fair"

Of nine specific skills asked about in the survey, AP and NWP teachers rated students highest on their ability to "effectively organize and structure writing assignments." About one-quarter of these teachers describe their students as very good (21%) or excellent (3%) when it comes to this aspect of writing. In addition, about one in five teachers rate their students very good (18%) or excellent (3%) when it comes to "understanding and considering multiple viewpoints on a particular topic or issue." Yet even for these top rated skills, more teachers describe their students' performances as "fair" or "poor" than as "very good" or "excellent." This was true of all nine writing skills asked about in the survey – more teachers rate their students at the bottom of the scale than at the top.

Of particular concern to these teachers is their students' ability to "read and digest long or complicated texts" and to "navigate issues of fair use and copyright in composition." On both of these measures, more than two-thirds of AP and NWP teachers in the sample describe their students' performance as "fair" or "poor." In addition, 57% of these teachers rate students "fair" or "poor" on "appropriately citing and/or referencing content," and half give their students low ratings on "giving constructive feedback on other students' work" and "constructing a strong argument."

Teachers most likely to rate students' specific writing skills as "good" or "fair"
Overall, how would you rate your students in their ability to do each of the following?

Legend: ■ Excellent ■ Very good □ Good □ Fair □ Poor

Skill	Excellent	Very good	Good	Fair	Poor
Effectively organize and structure writing assignments	3%	21%	43%	28%	5%
Understand and consider multiple viewpoints on a particular issue or topic	3%	18%	39%	32%	8%
Give constructive feedback on other students' work	3%	13%	35%	37%	13%
Appropriately cite and/or reference content	3%	12%	29%	37%	20%
Synthesize content/information from multiple sources into a cohesive piece of work	2%	15%	38%	33%	11%
Use tone and style appropriate for their intended audience	2%	14%	40%	34%	10%
Construct a strong argument	2%	13%	36%	37%	12%
Read and digest long or complicated texts	1%	8%	22%	38%	31%
Navigate issues of fair use and copyright in composition	1%	7%	25%	37%	30%

Axis: 0%, 20%, 40%, 60%, 80%, 100%

Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012. Based on a non-representative sample of 2,067 middle and high school teachers.

When it comes to rating students' writing skills, it is the English/Language Arts teachers among this sample of AP and NWP teachers who again have a more positive view. They were more likely than teachers of other subjects to give their students ratings of "excellent" or "very good" on most of the specific writing skills asked about.

English/Language Arts teachers have more positive views of student writing skills
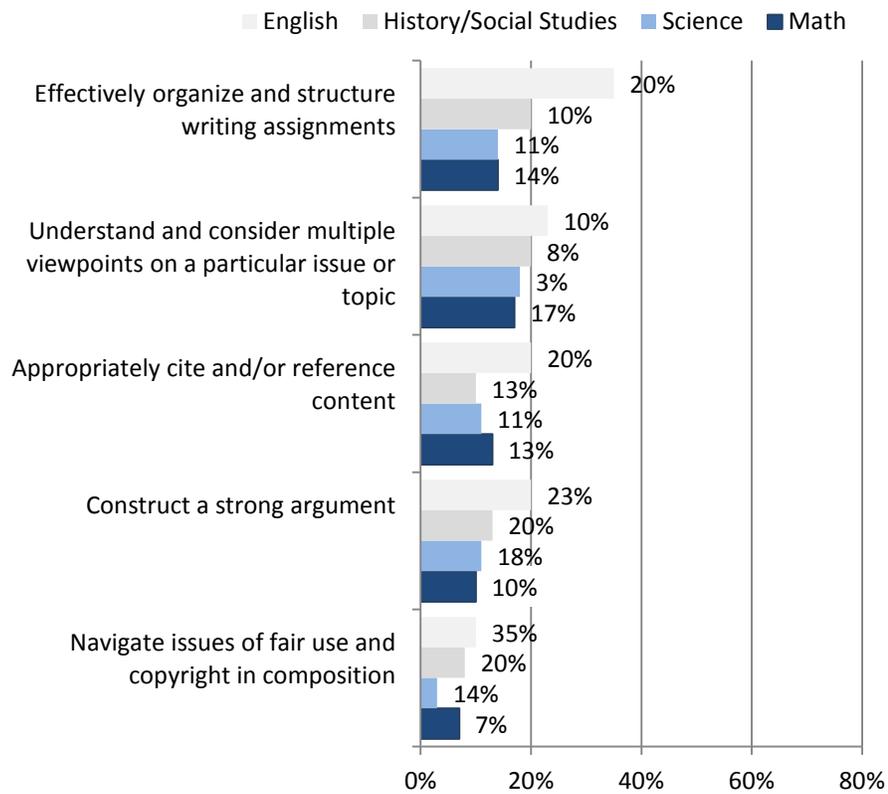
Legend: English / History/Social Studies / Science / Math

Effectively organize and structure writing assignments
- 20%
- 10%
- 11%
- 14%

Understand and consider multiple viewpoints on a particular issue or topic
- 10%
- 8%
- 3%
- 17%

Appropriately cite and/or reference content
- 20%
- 13%
- 11%
- 13%

Construct a strong argument
- 23%
- 20%
- 18%
- 10%

Navigate issues of fair use and copyright in composition
- 35%
- 20%
- 14%
- 7%

(x-axis: 0%, 20%, 40%, 60%, 80%)

Source: Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012.   Based on a non-representative sample of 2,067 middle and high school teachers.

A large majority of AP and NWP teachers surveyed devote class time to teaching about fair use, copyright, and citation

As noted above, the skill for which these AP and NWP teachers give students the lowest rating is "navigating issues of fair use and copyright in composition" and most of these teachers also rate their students "fair" or "poor" on their ability to "appropriately cite and/or reference content." With so much material available publicly in digital form, the temptation for students to copy and paste others' work into their own is a concern for many teachers, as is the difficulty many students have discerning the source of material they find online and citing that source correctly.

Clearly, AP and NWP teachers feel students need to improve in these areas, and large majorities are devoting class time to developing these skills. Across teachers of all subjects, 88% spend class time discussing with students the concepts of citation and plagiarism, and 75% report using class time to discuss the concepts of fair use and copyright. The focus and time spent on these issues reflects not only one of the key skills teachers say students need to improve, but also one of the unique challenges these educators face teaching writing in the digital age.

Different ways teachers address issues of plagiarism and fair use
% of teachers who do each of the following…
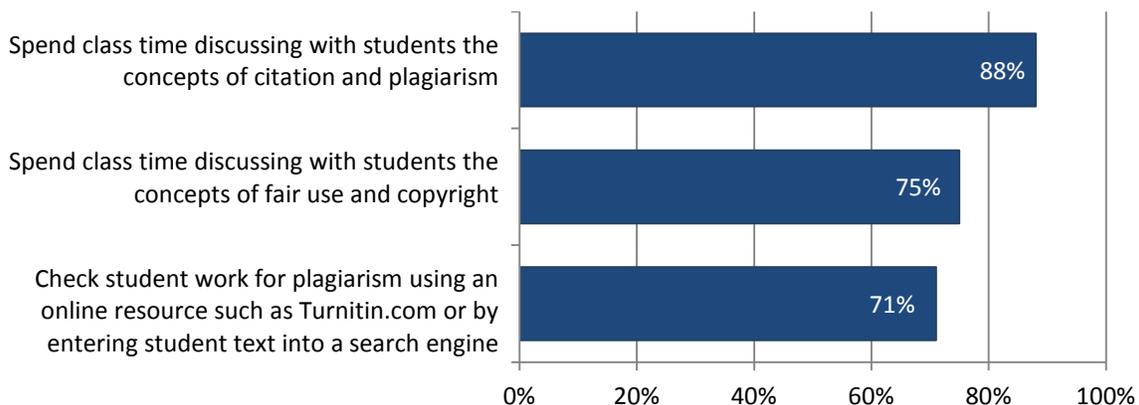
Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012. Based on a non-representative sample of 2,067 middle and high school teachers.

While overall, large majorities of this group of AP and NWP teachers report spending class time teaching about both fair use and plagiarism, the burden falls mainly to English/Language Arts teachers. Virtually all of the English/Language Arts teachers surveyed (99%) spend class time teaching their students about plagiarism and proper citation, while 83% work with students on understanding the concepts of fair use and copyright.

English/Language Arts teachers bear the burden of teaching about plagiarism and fair use, though most history/social studies teachers also spend class time on these topics

% of each group who spend class time discussing with students the concepts of…
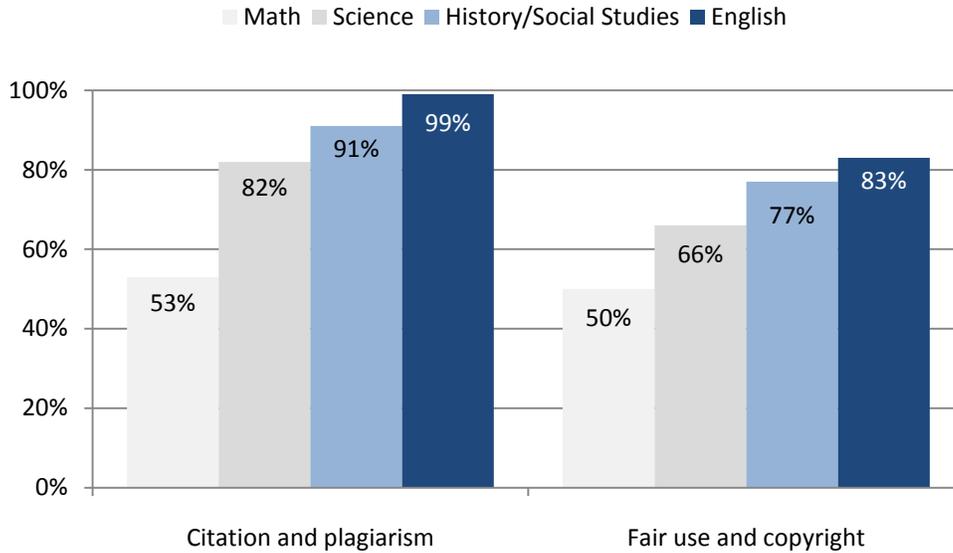
Legend: ▢ Math ▢ Science ▢ History/Social Studies ▮ English
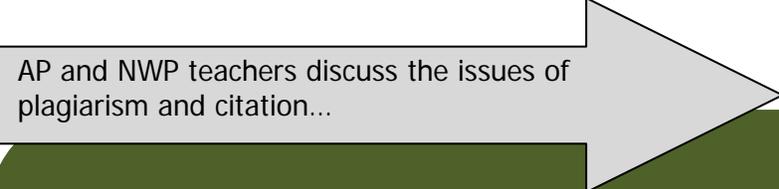
AP and NWP teachers discuss the issues of plagiarism and citation...

I think that a lot of things that we were surprised about in our English class was [students] not being able to cite. Not being able to cite where they got their information from and figuring out how to put it in a way that's not just copy-paste, to figure out or not just paraphrasing a few lines but actually taking that information and using that information.

Whether accidental or blatantly intentional, there is a tremendous disconnect with how to correctly use and cite outside research. I'm very much at a loss for this quagmire as well.

The biggest challenge has been getting them to analyze sources for credibility. Also, citation and plagiarism are issues. It seems because the information is so freely found, copied, and pasted, students don't stop to think about what needs to be cited.

The media person has put together a ppt on plagiarism, so the first two days of the semester, we spend time going over these two topics so we are all on the same page. (We have a two day drop and add period then). In a perfect world, the students would come to us with these skills, but in reality they don't have them.

What everyone else has stated is what I believe. Being able to verify the accuracy of the sources is important. Students use the first few sites they come across and don't verify the information from additional sites. They should start learning this during elementary school so by the time they get to high school, it becomes second nature. The other part is being able to put this material into their own words. Everyone, including parents, believe that copying and pasting into a report is doing research, even after the concept of plagiarism is explained to them.

I feel like we have just started the discussion [about plagiarism and fair use] and need to go more in depth. I do think this is more of an issue now than ever. There are so many sites, so may resources, so many temptations for our students. We need to teach them exactly what it means to plagiarize. The whole notion of intellectual property seems fuzzy to our students.

Amazingly, I think students understand things a whole lot better than we teachers often give them credit. Students intimately understand the desire to be given credit for what they produce. Starting from that recognition helps solve most problems from the start. I definitely address issues of fair-use, where appropriate and have spent a lot of time over the last few years invested in deepening my own understanding on this. There continues to be so much misinformation and misunderstanding on copyright issues.

Nearly all plagiarism issues that I have encountered are more learning experiences than efforts to get over on anyone. The incidents have more to do with subtle distinctions. The biggest issue I see is that there are too many tasks given to students that are invitations to plagiarize. I try really hard to create tasks and assignments that require more of them, synthesizing something new. Approaching things in that way preemptively addresses a lot of copyright and plagiarism issues.

We talk about this as we design projects together; we keep track of sources; we give increasingly detailed credit as we learn how and why to recognize others' contributions to our works. We talk about how much more likely we are to plagiarize when we don't understand what we're reading, so we work hard to find texts that make sense to us and that we can paraphrase and credit.

In focus group discussions, teachers disagreed as to whether most plagiarism and violations of fair use are conscious choices to misuse content based on willful disregard or laziness, or if these concepts are generally misunderstood by well-meaning students. Some AP and NWP teachers questioned their own understanding of these complicated and ever-changing concepts—as well as the norms that stem from them—and said they were not surprised to see middle and high school students struggle with them.

Many AP and NWP teachers in the sample also use digital tools to combat plagiarism among their students

The AP and NWP teachers surveyed also note the value of digital tools in helping them detect and combat plagiarism by their students. This "digital monitoring" can be done in many ways, the most common being requiring students to submit all assignments in digital form so that they can be easily checked for lifted passages using tools such as Turnitin.com. Survey data reveal that 71% of this group of AP and NWP teachers check student work for plagiarism using tools like Turnitin.com and/or entering student text into search engines.

AP and NWP teachers discuss using digital tools to combat plagiarism...

I give them essay prompts where they're required to have at least three bibliographical entries. They then submit their work through turnitin to check for plagiarism. Since I have juniors and seniors, they come to me with whatever research skills they've acquired in their English classes.

Going online, typing in key words, and finding so many different sources makes research so much easier today. But sometimes I long for the days of going to the library and actually doing research by looking up information, reading, taking notes and then writing things in your own words. At least you know that the students did much of the work themselves. It is too easy to just cut and paste somebody's work and call it your own. Even with great programs like turnitin which allows you to check authenticity, the concept of research today is not what it used to be.

Our English teachers have really led the charge on teaching good research habits (thank you to all English teachers!), I only need to echo what they've learned from their English teachers and remind them of academic honesty and turning in a product that is really their own. The English teachers have been wonderful about teaching students to distinguish reliable sources from those that are not, and knowing to use sites with .edu and .org as a starting point. Knowing that I will check their work for plagiarism and there will be severe consequences for the grade if there is plagiarism helps students take seriously the task of making a product that is original work.

My gut instinct tells me that resources like turnitin.com aren't solutions, but band aids. Personally, I tend not to opt for the scare tactic..."if you plagiarize I'll catch you!" Again, I'd rather have them research and write in smaller chunks more often about different subjects--teach the skill, make it manageable and recursive. As an 8th grade teacher I feel responsible for the skill – practice with the larger research project or paper can come later.

When I first started teaching at the middle school level, our media specialist came in and delivered an awesome lesson on fair use and plagiarism. Now, with budget cuts, that service is not provided. When I begin our research project in the spring, I take time to discuss with my students what plagiarism is and how I can find it within their papers. Fair use is addressed when the issue comes up in class. Our school doesn't have the funding to use an online resource such as turnitin.com. I simply type in a few words of a student's paper if I suspect plagiarism. Usually I can find if they have been plagiarizing.

It is kind of interesting, the only time I have had a real problem with plagiarism is when the student felt so short on time and feels completely under pressure to perform that they feel as though cheating is the only way. We do talk about fair use and plagiarism in my classroom, but I have found my students, the few who have done it, to be pretty poor plagiarizers. I usually recognize it pretty quick and can copy and paste it just into Google and it will pop up.

While technology is great and has given students access to much more information, I am concerned with the information overload students encounter. Too many sources available, too much information, and students need to learn better how to evaluate a source to determine whether or not it is valid and reliable. I also yearn for days when kids would use the good old periodical guides in the library. Kids are much more likely to download and print sources and then highlight passages instead of taking notes over sources. And yes, many merely cut and paste passages into their papers and try to pass it off as their own. Thankfully our school uses TurnItIn and this helps catch those plagiarizers pretty well.

V.   Teaching Writing in the Digital Age

Given the myriad ways teachers see digital tools shaping how students approach writing, it is critical to understand how the digital ecosystem is shaping how writing is taught in schools today. On the whole, AP and NWP teachers in the study say that digital tools make teaching writing easier, particularly collaborative online platforms that allow them to work alongside students in the editing process and observe their students' thinking and work in progress. In focus groups, these middle and high school teachers shared countless examples of the unique ways they use digital tools—ranging from whiteboards to GoogleDocs to wikis—to teach key writing skills. Such lessons are used to address all aspects of writing, including grammar, organization, voice, tone, critical thinking, and persuasion.

AP and NWP teachers surveyed use a wide range of digital tools to teach writing

It was evident in focus groups that in addition to the many impacts of digital technologies on student writing, these tools also have a considerable and largely positive impact on AP and NWP teachers' perceptions of their own ability to teach writing effectively. Many of these teachers say interactive technologies are currently part of their learning environments, including using interactive whiteboards (52%), having students develop, share or post their work on a website, wiki or blog (40%), and having students edit their own work (36%) or others' work (29%) using collaborative web-based tools such as GoogleDocs and Moodle.

What do AP and NWP teachers have students do online?

% of AP and NWP teachers in the sample who say they have students…

Activity	Percentage
Do research or search for information online	95%
Access or download asssignments from an online site	79%
Submit assignments online	76%
Develop, share or post their work on a website, wiki or blog	40%
Participate in online discussions	39%
Edit or revise their OWN work using a collaborative web-based tool such as GoogleDocs	36%
Edit OTHERS' work or give others feedback using a collaborative web-based tool such as GoogleDocs	29%
Post their own work online where people OTHER THAN their classmates or teachers can see it	22%

Source: Teacher data from the Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012, n=2,462 middle and high school teachers.

Digital tools AP and NWP teachers are using in their classrooms

% of AP and NWP teachers in the sample who say they and/or their students use the following digital tools in the classroom or in completing assignments…
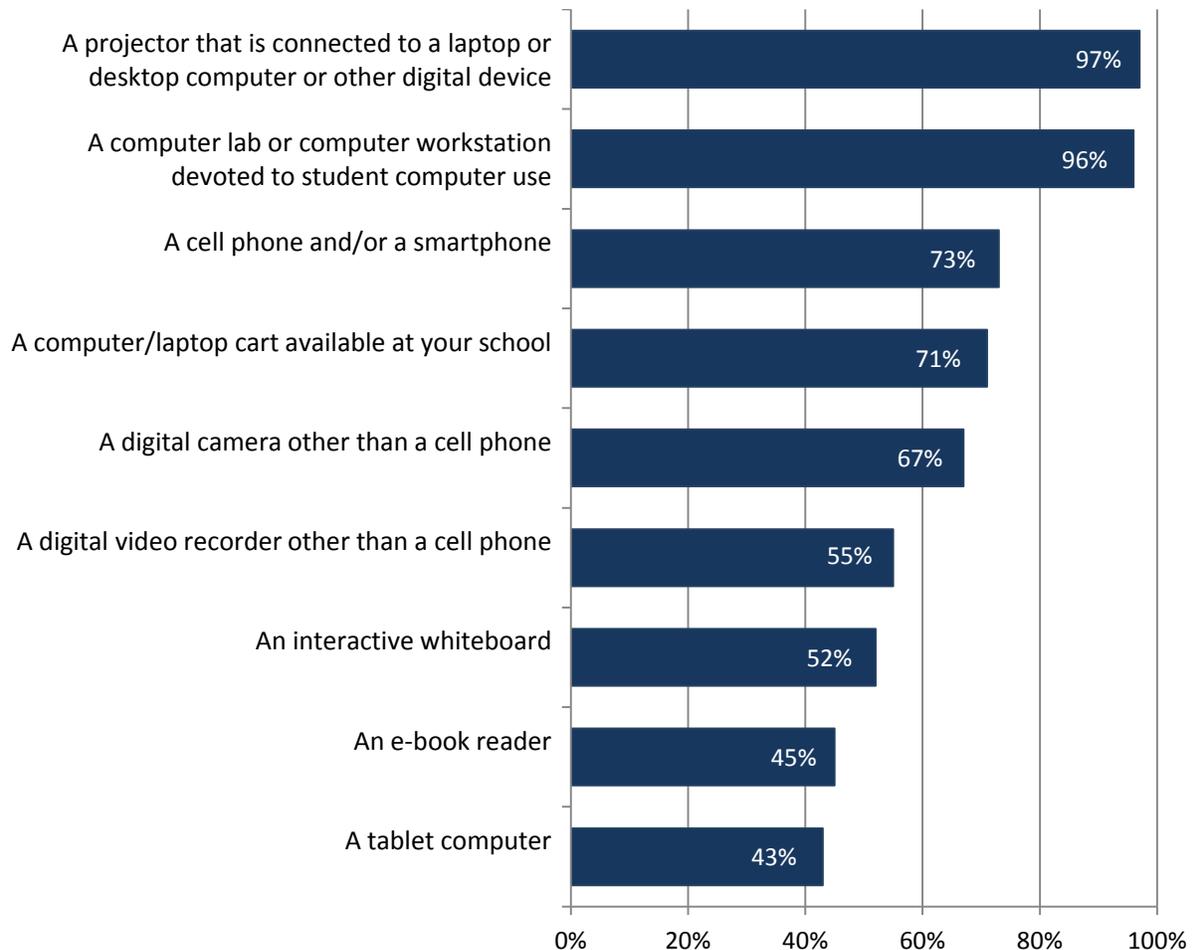
Digital tool	Percentage
A projector that is connected to a laptop or desktop computer or other digital device	97%
A computer lab or computer workstation devoted to student computer use	96%
A cell phone and/or a smartphone	73%
A computer/laptop cart available at your school	71%
A digital camera other than a cell phone	67%
A digital video recorder other than a cell phone	55%
An interactive whiteboard	52%
An e-book reader	45%
A tablet computer	43%

Source: Teacher data from the Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012, n=2,462 middle and high school teachers.

The use of e-readers and cell phones as a learning tool varies by the subject matter being taught. It is not surprising that English and Language Arts teachers are the most likely to report e-readers being part of the learning environment. Math teachers, in contrast, are particularly *un*likely to say that they or their students use cell phones in the learning process.

Tablets, e-readers, and cell phones are used more often by teachers and students in higher income areas

% of each group who say they or their students use this device as part of the learning environment…	Cell Phone	Tablet Computer	E-reader
All teachers	73	43	45
Teacher age			
22-34	70	37	45
35-54	73	43	47
55+	75	48	47
Subject taught			
English/Language Arts	74	44	58
History/Social Studies	76	46	43
Math	58	40	33
Science	71	41	33
Student socioeconomic status is mainly…			
Low income/Below poverty line	71	37	41
Lower middle income	73	40	44
Middle income	72	44	48
Upper middle/Upper income	78	56	55

Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012, n=2,462 middle and high school teachers.

Likewise, some groups of AP and NWP teachers are more likely than others to employ more collaborative online tools. For instance, the youngest teachers in this group (those under age 35) are the most likely to have students develop or share work on a website, wiki or blog (45% v. 34% of teachers age 55 and older). They are also more likely than the oldest teachers to have students participate in online discussions (45% v. 32% of teachers age 55 and older) and use collaborative web-based tools such as GoogleDocs to edit work (41% v. 34% of teachers age 55 and older). Middle school teachers (those teaching grades 6-8) are the most likely to have students develop and share work on wikis, webpages or blogs. Just under half of middle school teachers (47%) have their students use these collaborative tools, compared with 41% of 9th-10th grade teachers and 35% of 11th-12th grade teachers.

One could argue that some subjects lend themselves more easily to these types of online collaborative tools, and survey results reflect this. English teachers are the most likely to say they have students use these types of tools, often by a wide margin over teachers of other subjects. Conversely, math teachers are least likely to make use of these tools.

Some subjects may lend themselves more easily to the use of interactive and collaborative online tools

% of each group who have their students…	Develop, share or post their work on a website, wiki or blog	Participate in online discussions	Edit or revise their work using a collaborative web-based tool such as GoogleDocs
All teachers	40	39	36
Subject taught			
English/Language Arts	50	48	47
History/Social Studies	39	41	36
Math	20	23	18
Science	33	35	32
Teacher age			
22-34	45	45	41
35-54	42	41	36
55+	34	32	34
Grade level taught			
6-8	47	42	40
9-10	41	39	35
11-12	35	40	36

Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012, n=2,462 middle and high school teachers.

Overall, teachers say digital tools have made teaching writing easier

In both the survey and the focus groups, AP and NWP teachers described the impact of utilizing digital tools in the teaching process in largely positive terms. Overall, half of the teachers who completed the survey said that today's digital technologies make it EASIER to shape or improve student writing, while just 18% said they make it MORE DIFFICULT.

More experienced teachers are no more or less likely than their younger colleagues to say that digital tools make it easier for them to shape student writing. The only striking difference among teachers is again in comparing teachers of different subject matters. Among these AP and NWP teacher, English/Language Arts teachers (64%) are much more likely than teachers of math (32%), science (38%) and history/social studies (45%) to say digital tools make teaching writing easier.

50% say today's digital technologies make it EASIER for them to shape or improve student writing

Do today's digital technologies make it EASIER or MORE DIFFICULT for you as a teacher to shape or improve student writing, or do they have NO IMPACT?
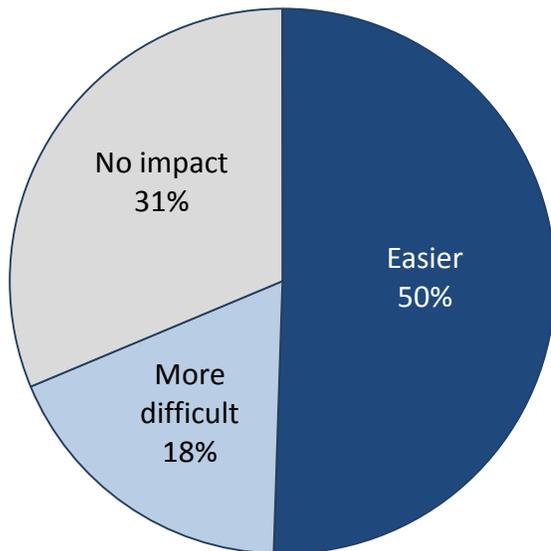
**Source:** The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012. Based on a non-representative sample of 2,462 middle and high school teachers.

This positive sentiment about the impact of digital technologies on teaching writing was also reflected in many focus groups comments. In general, teachers noted how these technologies generally enabled them to "see their students thinking," and move from talking about writing with their students to actually manipulating student writing in an interactive way. They also lauded these technologies for giving students a "hands on" experience in editing their own and others' writing.

Asked to describe how they teach writing, focus group participants said that the basics of writing are taught in English classes, and then skills are honed in other classes through practice. Teachers try to provide students with examples of good and poor writing, and will assign essays, papers, and free response questions throughout the year to give students the opportunity to work on their writing skills. Many noted the value of digital tools to provide students with writing examples, both good and bad; tools most commonly noted for this purpose were smart boards and teaching platforms such as Elmo and WebAssign.

Thus, beyond simply providing students more opportunities to practice their writing skills, teachers noted that digital tools can be critically important in providing specific feedback to students on where and how their writing can improve. Many felt this interactive feedback helps make students more receptive to improving their writing. As students implement suggested changes in their writing, they (students) begin to see improvements and start to gain confidence. Moreover, by working on both their own and others' work, they learn to identify and appreciate good writing. This is where teachers in the study see digital tools having the biggest impact.
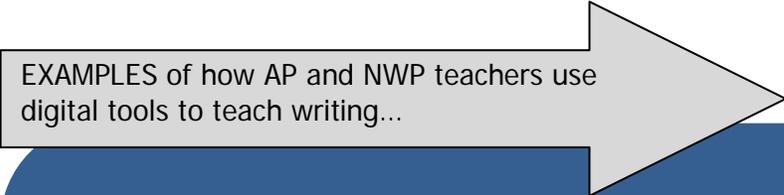
EXAMPLES of how AP and NWP teachers use digital tools to teach writing...

I utilize Turn It In with my AP students primarily to prevent plagiarism. It's a good resource, though, because the kids can also use it to check grammar, to peer edit, and to view previous students' essays. I use it with my Smart Board to bring up essays to evaluate, critique, etc. I also use the Smart Board to study other types of writing as well as other forms of media (on line sources, photos, etc). These help with thinking, which indirectly helps with writing. It also helps kids see different forms of persuasion with also helps with their writing. I will occasionally use the Smart Board for grammar-type exercises to help with issues that creep up in their writing.

Participation in scheduled, threaded-interactions at Twitter have helped some of my students to be in the same place and time as authors of the books they are invited to read. One instance of this was when I hosted a threaded discussion, which looked at two books that came out last fall, Laurel Snyder's BIGGER THAN A BREADBOX and Anne Ursu's BREAD CRUMBS. In my experience, so many of our students have underestimated the power of social media for making larger connections than those they currently realize by simply walking down the hallways of their own schools.

My senior AP students are reading *Dead Man Walking* as a model of persuasive writing. I've taught this book for a number of years now, and one of the things I try to impress upon them is how many rhetorical strategies the author uses to try to justify her position. In the past I would have my students keep track of those strategies that they noticed (and that I pointed out) in a spiral notebook. But I had this feeling that they weren't getting enough out of this activity. This year I had the class create a wiki to pool their resources. One of the things I wanted them to learn was the idea that there's a progression from weaker to stronger pieces of evidence as an argument progresses. So after they entered their piece of evidence in the wiki, I had the class do an online activity with a GoogleDoc/Form where they ranked the evidence on those pages. This at least helped them look at all the examples of analogy, for instance, and then think about which ones were stronger than others. I suppose I could have done this with butcher paper and markers, but I only have so much wall space.

GoogleDocs is wonderful for collaborative composing as well as quick feedback that students can see in real time. Last year, my students collaborated to compose Declarations of Education. This was the first time for them to use GoogleDocs. They were amazed by how easy it was, but also how quickly their writing could be seen and receive feedback. Knowing that their writing was being viewed motivated them to produce. Knowing that they were collaborating and their group could see what they were contributing amazed them. When they saw a comment, I heard things like, "Wait! Who is that? Let me respond!"

Social media and the Internet provide students with mentors and mentor texts from whom and which they learn genres of writing and characteristics of effective communication. For example, I use social media to make appointments with a filmmaking mentor for a student; the student has learned editing/ composition techniques, as well as script-writing conventions from the web-app ScriptBuddy thanks to interactions with the mentor.

Ning is used as a digital classroom portfolio to display students working projects: articles, photography, writing reflections, video production, class projects, digital storytelling,...There is a great video on called "Problems have Solutions," where the students use technology to learn how to solve the Rubik's cube, then construct a machine that solves the Rubik's cube using logarithms. It is a place where we as a learning community can post and place our "working projects." We believe it is better to have an imperfect something, than a perfect nothing.
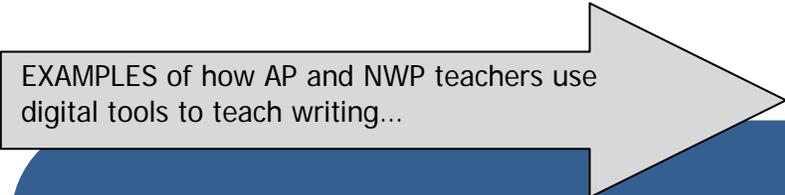
GoogleDocs and SmartBoard combo also allows us to unpack the revision process, which back in my pre-Internet classroom days was pretty much a black box. Students used to print up a copy, do some peer editing, take some of feedback home, and return with a revision. A week ago, for instance, I had students take a stand on a controversial issue. The next day in class I had them find evidence to support their position in three ways: 1. where they normally find information (pretty much a basic Google search for most of them), 2. EBSCO database, and 3. Opposing Viewpoints. Yesterday they wrote a draft in class as per these instructions. Since they had shared their drafts with me, I was looking in on their com posing process as they wrote. This worked in a couple of ways. Obviously, I was able to supervise the kiddies and keep them on task. But more importantly, I was able to see the students thinking. At times I would comment on a student's composing habits, other times students could ask a question and I could view the draft with them (with or without projecting it for the whole class to see). If I saw an interesting strategy or stylistic device a student was using, I could point that out to the group. Also, to see how struggling writers worked through a draft was instructive. I probably popped into their drafts most often.

One of my favorite parts of utilizing these tools is the added level of collaboration students can have with their writing. I find it funny that for so many things we let students work in partners to collaborate and share ideas, but often when it comes to writing we make them do it independently. For some time I have thought that writing can be just as collaborative as any other activity we do with our students. One year, my students decided that we needed to improve our school's Wikipedia page. We started thinking about all of the different things that would be needed to add to our Wikipedia page so we created our own Wikispace where we began to dump all sorts of information that we would need. Then, students broke up into groups to start composing the text that would be included on the page. It was so neat to look on the history tab of each page and see how different students had gone back and forth editing and revising the work to compose a more cohesive paragraph.

Another thing I like to do with students is have them use something like Today's Meet to brainstorm ideas when they are beginning a writing assignment. This is so helpful for all students because they are able to take, change, and add to ideas being shared by the whole class in order to further develop their own thoughts about a piece. I have found that many students like to talk out their writing ideas before they ever put something officially down on paper, and there are so many digital technologies that can assist students in this way.

GoogleDocs has afforded students the opportunity to work with peers on research papers, to seek & receive feedback on a piece of writing, on a specific trait. They are able to read each others' responses or writing and gain perspectives other than their own. Students begin to recognize a well written piece of writing by their ability to identify the specific traits of the piece, juxtapose a piece of writing that has not been edited. Software such as Word and Pages offer a safe place to become a better writer by providing a private platform to express themselves free from the conventions police. Conventions matter, but some of the students have expressed they will forgo attempting to express anything that is not "safe" and free from convention correction when writing for someone else or a specific person. They have expressed that it is deflating to only receive feedback on conventions, and little to none on sentence structure, voice, word choice...again, conventions matter! Digital technologies are tools and resources that have personally improved my students' ability to express their ideas, aid in their sentence structure/flow, increase their lexicon, encourages them to develop their voice, and make conventions relevant.

I was just reading a paper in Google Docs, commenting, etc. and was joined by my student in that document. She must have received an email that I commented, went to check out the document while I was grading it, and sat and watched as I read and commented. There's something to that.

I use the Mastering Biology site that comes with the Campbell Biology program. I also use the CPS "clickers" in class for review and during lecture notes. We also use a lot of technology in lab for both AP Biology and APES. This technology does not directly teach writing skills, but I can use the information and data collected with this technology to help students learn how to assemble the information into coherent written communication.

I utilize Turnitin with my AP students primarily to prevent plagiarism. It's a good resource, though, because the kids can also use it to check grammar, to peer edit, and to view previous students' essays. I use it with my Smart Board to bring up essays to evaluate, critique, etc. I also use the SmartBoard to study other types of writing as well as other forms of media (on line sources, photos, etc). These help with thinking, which indirectly helps with writing. It also helps kids see different forms of persuasion with also helps with their writing. I will occasionally use the Smart Board for grammar-type exercises to help with issues that creep up in their writing.

Technology allows students to get faster feedback on their writing and allows the teacher to give that feedback flexibly and conveniently. We don't have to wait for class to go over student work.

I'm thinking about technology that's actually really helped me to improve their writing. I'm thinking specifically about GoogleDocs, emailing, some other systems kind of like iBooks or the Amazon Kindle app where it's allowed me to say, "Here, this right here is what you're not understanding." I've had three or four lines going back and forth on GoogleDocs on one sentence because that sentence just happens to be on a thesis and I'm not getting the thesis. I can do that with every student in my class in a reasonable amount of time because of that technological tool. Whereas if I was using paper the way that people used to do it, it's much more difficult to say, "Here," and then have a conversation going back and forth. I mean I would think it's almost impossible to hand it back and then have another student hand back another piece of paper.

All the classrooms in our school are equipped with Smartboards. This technology has allowed our students to move to another level in writing. They are more engaged with classmates' writings and also able to analyze other works of art as a class. The more our students are able to engage with the writings of exemplary authors, the better writers they become themselves. It is one thing to just talk about the writing, but another to be able to manipulate it.

At the same time they use digital tools to teach writing, 94% of AP and NWP teachers surveyed encourage their students to do at least some of their writing by hand

In conjunction with the extensive use of digital tools in many classrooms, almost all of the AP and NWP teachers in the sample say they encourage their students to do at least some of their writing by hand. Their reasons vary, but in focus groups many teachers noted that because students are required to write by hand on standardized tests, it continues to be a critical skill for them to have. This is particularly true for AP teachers, who must prepare students to take AP exams with pencil and paper.

In focus groups, others expressed the belief that students do more active thinking, synthesizing, and editing when writing by hand. Because of the temptation online to copy and paste others' work into their own, some teachers said they feel the only way to ensure their students are original thinkers is to have them complete writing assignments entirely without the aid of the internet and digital tools.

Still others say they have found that not all of their students are comfortable writing digitally. A common assumption about the current generation of middle and high school students—popularly referred to as "digital natives"—is that they all enjoy and are comfortable with using digital tools. Yet some AP and NWP teachers pointed out this is not the case, and that some of their students are more effective or more comfortable writers when writing by hand with pencil or paper.

Finally, there was a small group of teachers in the study who do not see enough added value in digital tools to incorporate them into the teaching process. Where teaching writing is concerned, these AP and NWP teachers feel that tried and true methods continue to be the most effective.

I don't incorporate technology at this time to help students learn writing skills. We use good old fashioned paper and pencil format. I am open to incorporating technology, but only if it truly enhances learning and I am not aware of any technology piece that would do it better than what I am currently doing.

[In Spanish class] for oral work we use tons of technology. However, for writing, it is pencil/pen and paper. They have to write on paper for the AP Exam. They need to practice penmanship, and I do not want them using spellcheck on the computer. I also keep writing assignments as in-class assignments, and they don't get to use dictionaries. If it is a research paper, then the system is different, but usually any research projects are done for oral presentation. Since the essay on the AP Exam is about writing a comparative essay based on the articles and listening material, that is what I also use to develop their skills.

I do not incorporate technology at all to help students with writing skills. I require students to write in class using a pen and paper. I feel that this allows me to see their thoughts, not what they can find online.

I like old-fashioned pen or pencil and paper. Technology is fine, and I am a blogger myself, but I like to see learning on pen and paper.

I truly believe that since they must write for 3 hours on the actual [AP] exam it is important they hand write all essays for me. For learning writing skills, Word has spell check and grammar check (which although very good I think, it has hurt the student knowledge, they rely on the computer to correct it all).

I make extensive use of technology for writing, but much less in AP because a major component of the exam, the essays, have to be handwritten. I recognize that there are many obstacles to computers being allowed to all students writing essays -- issues of access, availability of the internet, and much more -- but I really hope [we find] ways to overcome this in the near future.

Recently I was having a conversation with a colleague who is concerned about how little writing students are willing to do for him in class. I have the same students. We use GoogleDocs and social media and they are on their cell phones and in on their Facebook pages or Tumblr blogs all day. I suggested to this colleague that when he asks them to write using pen and paper he is adding an unfamiliar element to their work. It's most natural for them to compose on a screen. Quickly, I added that there are a few students who still prefer to write on paper first, but not many. This conversation came to mind when I saw your question because -- as this example shows -- I've begun to ask the question in reverse: What impact does it have on students' writing when they don't have the tools they normally use to communicate?

Our 8th grade students are fairly well versed in their GoogleDocs Skills. We have been incorporating these tools for about the past four years, and at this point, the usage has become automatic and a deeply ingrained part of our learning process. It has been a goal of mine for about the past two years to build class in a way that these skills are just "the way we do things" so that they are as second nature as paper and pencil. However, because our high stakes state assessments are still paper based (for a few more years at least) we still do have writing and assessment on demand that is paper and pen based. Recently, we asked students to record their scores on various skill components...both digitally and with paper and pen. I assumed that the work composed on the computer would be much more "clean and refined", but this was not always the case. We actually found that about 50% of the students scored better in mechanics and development when using paper and vice versa. We spent some time talking about this and really worked to help students to define what medium worked best for them. The plan is that if students know that they tend to compose better with paper and pen, then they (and we) will know to be more careful when composing digitally-- and the reverse as well. This was a really interesting conversation. Especially, since we always hear about the "digital natives" of today, and it came through clearly that roughly half of students are upset that they may be required to do all testing digitally in the relatively near future. Curious...

Additional challenges faced teaching writing in today's digital environment

While half of the teachers surveyed report that digital tools make teaching writing EASIER, 18% report that they make the task more difficult. The survey asked teachers to tell us the biggest challenge they face teaching writing today, and several core themes emerged:

- disparate access to digital tools and widely varying skill levels among students
- a "digital tools as toy" mentality among students
- a lack of critical thinking skills in their middle and high school students
- a limited definition among students of what constitutes "writing"

The first theme, disparate access to digital tools across schools and among students, pervaded survey findings, with teachers of low income students reporting very different attitudes toward and impacts of the use of digital tools among their students. The topic of persisting digital divides in the educational arena was covered in depth in the second report in this series[13], which discussed how teachers of the lowest income students not only worry that their students do not have the access to digital tools they need at home or at school, but that teachers at those schools are not receiving adequate support and training in how to use these tools effectively in the classroom. Together, many teachers say, these disparities are creating a wider gap between more advantaged and less advantaged schools and school districts.

However, in addition to disparate access to digital tools, AP and NWP teachers point to widely varying tech skill levels students bring with them to the classroom. While some students have advanced tech skills and are very comfortable working with digital tools, others lack exposure or do not share the same comfort level. The assumption that all children who make up the generation widely referred to as "digital natives" are equally comfortable with and skilled in the use of the latest digital tools can be very damaging, these AP and NWP teachers noted. They often must remind themselves this is the case as they create assignments and decide which tools to use in their classes, and often devote class time covering what many would consider basic tech skills in order to ensure all students are on a level playing field.

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[13] See "How Teachers are Using Technology at Home and in their Classrooms," available at
http://www.pewinternet.org/Press-Releases/2013/Teachers-and-Technology.aspx.

Students' disparate access to, and skill using, digital tools ....

One challenge emerges with some things like GoogleDocs, blogs and others, and that comes for students who are working at a remedial level. When they haven't had much previous exposure to things like sharing documents or, for some, even fully navigating email, then they're not only behind in terms of meeting content standards, but they also tend to struggle in getting up on navigating some of the digital basics. I see it especially with some students who are not only struggling readers and writers, but also extremely slow on a keyboard, and since often they're from lower income households, they don't have the familiarity with things like texting and using a keyboard extensively. So, at times, there winds up the need for a balancing act: helping students improve their literacy skills, but also helping them master the basic digital tools so that they can improve their literacy skills.

What we've created with technology is a piece of paper and pencil which can appear anywhere around the Earth in a nanosecond. That is pretty amazing. And, for better or for worse, that is where the world is heading. We are establishing that those with digital abilities to read and write will have the access to the information. Access to information is power.

Our class has a Wiki...again, they don't naturally take to knowing how to manage it physically. Basic digital skills (what I consider basic) such as setting up a link back to an essay on GoogleDocs is something I have to constantly review with them . 8th graders are so apt to click first and ask questions later...no matter how often and precisely cued.

Coming from a very rural poverty area, most of my students do not have computer access at home. The only place they experience technology is at school. This is very unfortunate for my kiddos, because the department of education and our school have very rigid filters in place. This allows for no interaction between the students on social networks, Wikis, or blogs. We do have a computer lab in our school that is used as a language and math lab, but the students are not really taught computer skills or allowed to work in GoogleDocs. The lack of computer knowledge and proficiency is a scary thing, because very soon our students will be expected to take high stakes tests on computers.

I believe today's digital technologies have the potential to provide students more ways to tap into their creativity and their critical thinking skills. I'm a proponent of technology in the classroom and wish that my students had these tools available to them at school. In reality, however, I teach in a high poverty, rural district (m ore than 70 percent of the students receive free and reduced lunch). Our principal is of the theory that if you can't do it with pencil and paper, then it doesn't need to be done. Students do not have access to social media, Wikis or GoogleDocs. They are not allowed to use cell phones during school. Many students and staff (including myself and our principal) do not have Internet access at home because of where we live.

Many of these AP and NWP teachers also noted the challenge they face shifting students' perceptions of digital tools as "toys" to be used for social activities to viewing digital tools as important parts of the learning process. Several teachers described the "tool as toy" mentality many children develop through their early exposure to digital technologies at home. A child's first experience with these technologies is often in the realm of play, entertainment, and communication with loved ones, which encourages the perception of digital tools as useful only for these tasks. When AP and NWP teachers use digital tools such as cell phones as a learning device in class, they note, it is not uncommon to have to "retrain" their students to see these devices as learning tools.

Teaching students to see digital technologies as important tools for learning is a challenge....

The first impact [of using digital technology in the classroom] is their realization that digital technologies carry the expectations and benefits of being a good communicator. Technology is toy before it is a tool in the lives of my students. So, I discover with them just how much they do not know about technology. While they may be willing and eager to use technology, they do not necessarily understand any of it as a tool or life application.

We're both a Google and Apple oriented school--teachers are encouraged to use Google Apps, Docs, etc. In my class, we set up our Google Reader app earlier this year. They learned what RSS stands for and what it means to use an aggregator such as Flipbook. My intention is to use that tool as an ongoing product for research--to encourage the concept that research is no isolated in on project or paper, but it is always a good idea to read and explore ideas as we write. I wouldn't say my students are resistant to it, but it is definitely a literacy skill that they have little experience with...let alone comfort.

At the 8th grade level, digital literacy is a real a ground floor venture. It is proving to be more about exposure and developing knowledge rather than setting them on their own to be digital readers and writers. Today, for instance, we tried cel.ly in class. Students are so trained to leap into texting for fun, and in that they expect immediate results, I was surprised at how specific and slow I had to be in instruction—text this phrase to this number--for kids who text to each other all the time, that basic engagement did not come naturally. Once we got into the lesson, they were able to warm to the idea of texting responses, offering their confusion, etc. about the short story they read the night before.

Many of these teachers expressed the belief that teaching writing is less about the actual writing mechanics and more about the students' ability to think critically. In focus groups, several teachers said they find today's students so rushed in everything they do, and so accustomed to getting and processing information quickly, that they often approach the organization of their thoughts for a writing assignment the same way. Many teachers say a major challenge is getting their students to slow the process down, take sufficient time to analyze information closely and carefully, and only then begin the writing process. Instead, according to teachers' accounts, they often see students speed through these tasks and underestimate the time it takes to produce a solid piece of writing containing a coherent and persuasive argument that synthesizes material well.
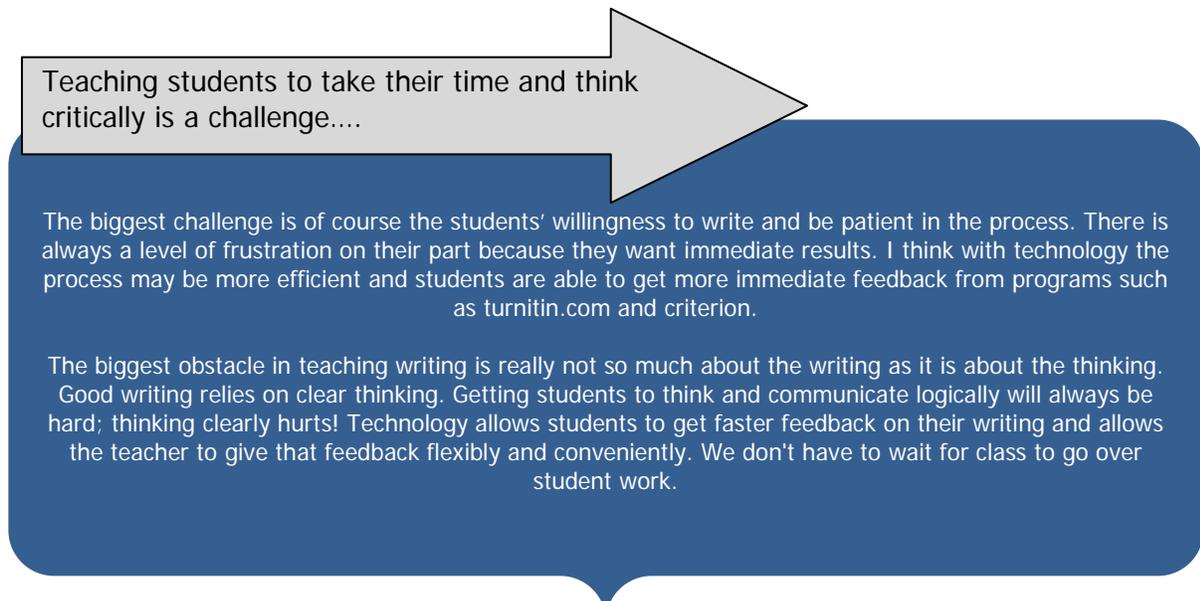
Teaching students to take their time and think critically is a challenge....

The biggest challenge is of course the students' willingness to write and be patient in the process. There is always a level of frustration on their part because they want immediate results. I think with technology the process may be more efficient and students are able to get more immediate feedback from programs such as turnitin.com and criterion.

The biggest obstacle in teaching writing is really not so much about the writing as it is about the thinking. Good writing relies on clear thinking. Getting students to think and communicate logically will always be hard; thinking clearly hurts! Technology allows students to get faster feedback on their writing and allows the teacher to give that feedback flexibly and conveniently. We don't have to wait for class to go over student work.

The survey included an open-end question asking teachers the biggest challenge they face teaching today's students to write well. While many themes emerged, including grammatical issues, plagiarism, and having them develop an appreciation for the importance of writing well, one theme stood among the others – that was getting students to slow down and take their time. These AP and NWP teachers repeatedly mentioned the tendency of today's students to want instant gratification, which they see as a serious detriment to the writing process. Not only do teachers tell us that getting students to think before they begin writing is a challenge, it is also a challenge to have them revise their work and produce multiple drafts.

Asked "What is the biggest challenge today in teaching your students to write well, AP and NWP teachers say....

Encouraging students to take their time in planning what they want to write. Students are always in a hurry to just write what they know and then show you. I want my students to show relationships in the content of what they write. Don't just throw an answer out there or a topic out there.

They are not as patient given the time commitment required to write a successful piece. Text speak is taking over. It's all about getting things done FAST.

Getting past their conditioning for immediate gratification. Truly effective writing takes time and students are not generally accustomed to working on projects which take longer than a class period.

Getting them to really read and analyze what they are supposed to be writing about. They want the quick answer. They don't want to have to search for it. They don't want to have to analyze it. They want to go to Google, type a term in and find the info. They are not interested in really understanding that info.

To do pre-writing activities so that they have thought through what they want to write before starting. Students tend to want to jump right in without thinking through their essay, story or poem.

They want instant results and it is difficult to show them that writing is a process. It is not something you put in a search engine and receive results in .1222 seconds.

In science, it is actually the critical thinking required to write analytically more so than the actual writing itself. For the writing itself, being able to write a coherent paragraph seems to be the biggest challenge. Most students seem to write simplistically and in a steam-of-consciousness manner.

Teaching students that writing is a slow, deliberative process -- a first draft can never be a final draft!

The biggest challenge is to get students to slow down, think carefully, and revise their writing.

The biggest challenge for teaching students to write well is planning and revising. Students do not often take the TIME to plan a well organized essay nor do they find it beneficial to revise.

Time management. Students need time to proofread, peer review, edit, revise and rewrite. Too often pushing deadlines creates hurried work with poor structure and mechanics simply because they need a good proofread!

Taking the time to evaluate and revise their writing.

Writing is a process, and many students rush the process, and it is hard to get them to revise and edit.

Convincing students that there is a need to revise and edit and revise again. Students tend to be too content with their first draft.

Ultimately, most of these AP and NWP teachers say the value of digital technology in teaching does not lie within the tool itself, but rather in how it is used

Ultimately, most AP and NWP teachers in the study say, digital tools used in the learning process are only as valuable as the pedagogy behind their use, and this speaks to the need for effective professional development in this area. While most of these teachers report having at least some training in how to use digital tools effectively in the classroom, they most often seek out that training on their own.[14] What many desire is a more structured and comprehensive approach to the use of digital technologies in the learning process, as well as sufficient access to the tools and support that both teachers and students need.

These tools do not accomplish these goals straight out of the box. The devil is in the details. Students need teachers who construct thoughtful assignments and inquiry projects, a classroom community and school culture which values creativity and expression and has structures in place to push students to continually further their craft. But, whether it be blogs or GoogleDocs or tweets or marble composition notebooks, students need to write frequently in low stakes ways to work these cognitive muscles. Also, we must constantly remember that the tool is not the thing -- the learning and the literacies are the thing. Teaching kids to use GoogleDocs cannot replace teaching organization and developement. Perhaps it is now more important since so much writing can easily become first draft published writing (Tweets, blog posts, and even GoogleDocs positions) without the proper support and encouragement to thoughtfully revise.

Technology tools do not replace quality instruction or a strong literacy community in the classroom. It concerns me that we rush to embrace these tools without understanding that access to technology in the classroom does not instantly improve students' learning. We limit the potential of these tools (and our students' potential) if we do not use digital technologies alongside a strong pedagogical foundation. Powerpoint presentations shown on a projector become 21st Century overhead transparencies. Multiple choice worksheets in GoogleDocs are still worksheets. Posting writing online isn't better than turning it in to the teacher's tray if she is the only person who reads your work. I do see that my students write m ore because they have more outlets for publishing their work and authentic reasons for writing, but they still must learn how to write well, work with others, manage deadlines, conduct research, and use the right tool for the task.

I'm constantly reminded of two things as I continue to incorporate digital resources:
a) it is always about the pedagogy--if you do not have a good plan, the technology itself is really an impotent tool without...it is no better than a toy
b) training...training...training...we are not training our teachers enough in this area

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[14] See "How Teachers are Using Technology at Home and in their Classrooms," available at http://www.pewinternet.org/Press-Releases/2013/Teachers-and-Technology.aspx.

Methods

Data collection was conducted in two phases. In phase one, Pew Internet conducted two online and one in-person focus group with middle and high school teachers, as well as two in-person focus groups with students in grades 9-12. Focus group findings were instrumental in shaping the development of a 30-minute online survey, which was administered in phase two of the research to a national sample of middle and high school Advanced Placement and National Writing Project Summer Institute teachers, drawn from sample files provided by the College Board and the National Writing Project, respectively.

Phase One—Focus Groups

Focus group discussions were designed to elicit from teachers and students their perceptions of the different ways digital technologies such as the internet, search engines, social media, and cell phones are impacting and shaping students' research and writing habits and skills. Teachers were also asked to speak in depth about their experiences teaching research and writing to middle and high school students today, any challenges they encounter, how they incorporate digital technologies into their classrooms and assignments, as well as how these technologies play a role in their professionalization.

In-person focus groups were led by two Pew Internet researchers, and were held on-site at a College Board school in the northeastern United States, immediately following school hours.   Each discussion was approximately 1.5 hours in duration, and students and teachers were provided with Barnes & Noble gift cards as a token of appreciation for their participation ($25 for students, $50 for teachers). Focus group discussions were recorded and transcribed.

Two online focus groups were also held with teachers. The first utilized an existing online research community of 150 Advanced Placement teachers. A series of discussion questions or "exercises" designed by Pew Internet were administered to this group by panel administrators using an online, asynchronous platform. Panel administrators then provided Pew Internet with transcripts of responses to the exercises.

The second online teacher focus group was administered by Pew Internet staff using an online focus group platform. Participants in this group consisted of 30 National Writing Project teachers recruited by NWP site administrators. The asynchronous 3-day focus group was moderated by Pew Internet staff, and all participants were able to see and respond to one another's comments as well as questions and comments from the moderators. Transcripts of the focus group were downloaded following completion of the discussion.

All focus group sessions were analyzed to identify key themes, and discussion guides were revised and adjusted between groups to better probe emergent themes. All focus group discussion guides are available at the end of this section.

Phase One: Focus Groups

	Location	Date(s)	Participants
Teacher focus groups			
Group #1	Online, asynchronous discussion	November 8-17, 2011	150 AP teachers participating in the AP's Insight Community Panel
Group #2	Conducted at a College Board school in the Northeast United States	December 13, 2011	8 Grade 9-12 Teachers covering a variety of class levels and subject matter expertise
Group #3	Online, asynchronous discussion	February 26-28, 2012	30 NWP teachers recruited by NWP site administrators
Student focus groups			
Group #1	Conducted at a College Board school in the Northeast United States	December 13, 2011	9 students in grades 9-10
Group #2		December 14, 2011	10 students in grades 11-12

Phase Two—Online Survey

Following completion of focus group discussions, Pew Internet designed and fielded a 30-minute online survey with a national sample of middle and high school teachers. The sample is not a probability sample of all teachers because it was not practical to assemble a sampling frame of this population. Instead, two large lists of teachers were assembled: one included 42,879 AP teachers who had agreed to allow the College Board to contact them (about one-third of all AP teachers), while the other was a list of 5,869 teachers who participated in the National Writing Project's Summer Institute during 2007-2011. A stratified random sample of 16,721 AP teachers was drawn from the AP teacher list, based on subject taught, state, and grade level, while all members of the NWP list were included in the sample.

Email invitations containing a link to the survey and unique username and password were sent to members of the sample; teachers could not opt-in to the sample. The response rate was 12% for the AP teachers and 14% for the NWP teachers. Given the nature of the sampling frames used for the study, no margin of error has been computed.

The online survey was conducted from March 7–April 23, 2012, and was completed at least in part by 2,462 teachers (2,067 teachers completed the entire survey; partial completes were kept, and all percentages reported are based on those answering each question).

Online Survey Sample Breakout	
Invited to participate	22,590
Known undelivered emails	2,501
Delivered email invitations (at most)	20,089
Unique visitors to the survey	2,564
Responders	2,462
Completed surveys	2,067

The teachers who participated in the survey

The survey results presented here are *not* based on a representative sample of U.S. middle and high school teachers, yet every effort was made to administer the survey to as broad a sample of educators as possible from the samples available. Overall, the 2,462 Advanced Placement and NWP Summer Institute teachers who participated in the survey comprise a fairly wide range of subject areas, experience levels, geographic regions, school type and socioeconomic level, and community type (full sample characteristics below).

The final sample includes teachers from all 50 states, Puerto Rico and the U.S. Virgin Islands. All teachers who participated in the survey teach in physical schools/classrooms, as opposed to teaching online or virtual classes. English/Language Arts teachers make up a significant portion of the sample (36%), reflecting the intentional design of the sample. Only 9% of the final sample is middle school teachers, with the other 91% reporting that they currently teach grades 9-12. While half of the teachers participating in the survey report teaching in a small city or suburb, there is fairly wide distribution across school size and students' socioeconomic status. There is also a wide distribution in terms of teachers' ages and experience levels.

Who took the survey? *% of survey respondents who fall into each category*

Teacher's age	
20-34	21
35-44	29
45-54	29
55+	23
Teacher's gender	
Male	29
Female	71
Years teaching	
5 or fewer	8

Who took the survey? *% of survey respondents who fall into each category*

6 to 10	23
11 to 15	23
16 to 20	18
21 or more	28

Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012, n=2,462 middle and high school teachers.

Who took the survey? *% of survey respondents who fall into each category*

Subjects taught	
Arts/Music	5%
Foreign language	7
History/Social Studies	17
English/Language Arts/Reading/Composition	36
Math	12
Science	13
Other	9
Performance levels taught	
AP/IB courses	34
ESL	2
Honors/Gifted/Accelerated	22
Mixed level courses	30
Remedial	6
Special education	2
Other	3
Grade levels taught	
6-8	9
9-10	36
11-12	56
Type of community in which you teach	
Large metropolitan area or big city	23
Small city or suburb	50
Small town	13
Rural area	14
SES of students	
Mostly upper or upper middle class	17
Mostly middle income	32
Mostly lower middle income	24
Mostly low income	20

Who took the survey? *% of survey respondents who fall into each category*

Mostly living below the poverty line	6
School size	
Fewer than 300 students	7
300 to under 1000	31
1000 to under 2000	40
2000 or more	23

Source: The Pew Research Center's Internet & American Life Project Online Survey of Teachers, March 7 to April 23, 2012, n=2,462 middle and high school teachers.

Interpreting the results

There are several important ways the teachers who participated in the survey are unique, which should be considered when interpreting the results reported here. First, 95% of the teachers who took the survey teach in public schools, thus the findings reported here reflect that environment almost exclusively. Moreover, and perhaps more importantly, the majority of teachers in this sample (56%) teach AP, honors and accelerated courses, thus the population of middle and high school students they work with skew heavily toward the highest achievers. These accelerated classes may have resources and support at their disposal—particularly in terms of specialized training and access to digital tools—that are not available in all classrooms.

In addition, it is critical to keep in mind that almost a third of the sample (NWP teachers) has received extensive training in how to effectively teach writing in today's digital environment. The National Writing Project's mission is to provide professional development, resources and support to teachers to improve the teaching of writing in today's schools.   The NWP teachers included here are what the organization terms "teacher-consultants" who have attended the Summer Institute and provide local leadership to other teachers. Research has shown significant gains in the writing performance of students who are taught by these teachers.[15]

Thus, the population of teachers participating in this research might best be considered "leading edge teachers" who are actively involved with the College Board and/or the National Writing Project and are therefore beneficiaries of resources and training not common to all teachers. It is likely that teachers in this study are developing some of the more innovative pedagogical approaches to teaching research and writing in today's digital environment, and are incorporating classroom technology in ways that are not typical of the entire population of middle and high school teachers in the U.S.

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[15] More specific information on this population of teachers, the training they receive, and the outcomes of their students are available at the National Writing Project website at www.nwp.org.

Survey questions

Welcome to a national survey of teachers being conducted by Pew Internet, the College Board, and the National Writing Project! The goal of the study is to understand how digital technologies are impacting the research and writing practices of today's middle and high school students, as well as different ways educators are using digital tools in their teaching.

Below is some important information about taking the survey...

- This survey is completely confidential. Results are reported in the aggregate, and responses are never attributed to any individual.

- Most questions ask you to select the single response that best reflects your answer. Other questions are labeled

- SELECT ALL THAT APPLY, and for these you can select more than one response.

- Grid questions list multiple items down the left side of the screen and response choices across the top. Please provide an answer for each item in the grid.

- Some questions are followed by textboxes in which you can type your answer.

- Please move through the survey using the "back" and "next" buttons just below the question box. Do not use your browser's back button.

- Your responses are saved as you move through the survey, but they are not final until you click the "submit" button at the end of the survey. Once you submit your survey, you will not be able to log back in.

- If you need to, you can suspend your session by clicking the "logout" link below the question box. Your answers will be saved, and you can log back in later to finish the survey.

Q1   Which grade level(s) do you currently teach? **(check all that apply)**
      *response required
      PLEASE NOTE THIS SURVEY IS ONLY INTENDED FOR THOSE CURRENTLY TEACHING IN GRADES
      6-12.

	CURRENT	
%	2	Sixth
	3	Seventh
	4	Eighth
	15	Ninth
	21	Tenth
	27	Eleventh
	29	Twelfth
	1	None of these

   *NOTE: Percentages may add to more than 100% due to multiple response

   If Q1="None of these," send to last page of survey

Q2   Which of the following subjects do you currently teach? **(check all that apply)**
      *response required

	CURRENT	
%	5	Arts and/or Music
	7	Foreign Language(s)
	17	History and/or Social Studies
	36	English/Language Arts/Reading/Composition
	12	Math
	13	Science
	*	Generalist/All elementary subjects
	9	Other (SPECIFY)

   *NOTE: Percentages may add to more than 100% due to multiple response

Q3   Are you currently teaching... **(check all that apply)**
      *response required

	CURRENT	
%	34	AP/IB courses
	2	ESL courses
	22	Honors, gifted or accelerated courses
	30	Mixed level courses
	6	Remedial courses
	2	Special education courses
	3	Other (SPECIFY)

   *NOTE: Percentages may add to more than 100% due to multiple response

SECTION II – TECH USE AND ATTITUDES

The questions in this section are about <u>your own</u> use of digital technologies, including the internet and email, online activities such as social media use or social networking, tech devices such as tablet computers, smartphones and any apps you might download or use on mobile gadgets.

Q4   First, overall, how confident are you in your ability to learn how to use new digital technologies? Would you say you are...

	CURRENT	
%	56	Very confident
	39	Somewhat confident
	4	Not too confident
	*	Not at all confident

Q5   Do you happen to have any of the following items, or not?

		YES	NO
a.	A desktop computer	87	13
b.	A laptop computer or netbook	93	7
c.	A cell phone, or a Blackberry or iPhone or other device that is also a cell phone	94	6
d.	A handheld device made primarily for e-book reading, such as a Nook or Kindle e-reader	47	53
e.	An iPod or other MP3 player	78	22
f.	A tablet computer such as an iPad, Samsung Galaxy, Motorola Xoom, or Kindle Fire	39	61
g.	A game console like Xbox or PlayStation	53	47

Q6   Some phones are called "smartphones" because of certain features they have. Is your cell phone a smartphone or not, or are you not sure?

Based on cell phone owners [N=2,367]

	CURRENT	
%	58	Yes, my phone is a smartphone
	41	No, my phone is not a smartphone
	1	I'm not sure if my phone is a smartphone

Q7   Do you ever use your cell phone to...?

Based on cell phone owners [N=2,367]

		YES	NO	PHONE CANNOT DO THIS
a.	Send or receive email	62	22	16
b.	Send or receive text messages	92	6	2
c.	Access the internet	64	21	14
d.	Download a software application or "app"	57	22	20

WEBA   Now thinking about how you use the internet in general....Do you ever use the internet to do any of the following things?

		YES	NO
a.	Not including email, do any type of work or research online for your job	99	1
b.	Use an online search engine to help you find information on the Web	100	*
c.	Create or work on your own online journal or blog	39	61
d.	Download video files onto your computer so you can watch them at any time	74	26
e.	Use a social networking site (for example, Facebook, LinkedIn or Google+)	78	22
f.	Take material you find online - like songs, texts or images - and remix it into your own creation	51	49
g.	Watch a video on a video-sharing site (for example, YouTube or GoogleVideo)	97	3
h.	Look for information on Wikipedia	87	13
i.	Use Twitter	26	74
j.	Watch a television show or movie online	76	24
k.	Upload a video file so others can watch or download it	67	33
l.	Create or work on your own webpage	59	41

MODEM3B At home, how do you connect to the internet...

%	CURRENT	
	1	Dial-up telephone line
	97	High speed connection, such as DSL, cable modem, wireless connection, fiber optic or T1
	*	Don't know what kind of connection I have
	1	Do not access the internet at home

Q8   On which of the following social networking sites do you currently have a profile?
      CHECK ALL THAT APPLY

      Based on SNS or Twitter users [N=2,367]

	CURRENT	
%	28	Facebook
	12	YouTube
	11	Google+
	10	Twitter
	6	Edmodo
	4	Flickr
	4	Ning
	3	Delicious
	2	Diigo
	2	MySpace
	2	Slideshare
	2	Vimeo
	1	Foursquare
	1	MyYearbook
	*	Bebo
	*	Digg
	*	Eventbrite
	*	Orkut
	2	Other (PLEASE SPECIFY)

      *NOTE: Percentages may add to more than 100% due to multiple response

Q9   About how often do you use social networking sites?

      Based on SNS or Twitter users [N=2,367]

	CURRENT	
%	32	Several times a day
	30	About once a day
	10	3 to 5 days a week
	13	1 to 2 days a week
	10	Every few weeks
	5	Less often

Q10   Which search engine do you use MOST OFTEN? **(SELECT ONE)**

Based on search engine users [N=2,374]

	CURRENT	
%	90	Google
	4	Yahoo search
	3	Bing
	*	Ask
	*	AOL
	*	MyWebSearch
	*	Dogpile
	*	WebCrawler
	1	Other (PLEASE SPECIFY)

Q11   In general, how much of the information you find using search engines do you think is accurate or trustworthy? Would you say...

Based on search engine users [N=2,374]

	CURRENT	
%	5	All or almost all
	55	Most
	40	Some
	1	Very little
	0	None at all

Q12   How CONFIDENT do you feel about your own searching abilities when using a search engine to find information online?

Based on search engine users [N=2,374]

	CURRENT	
%	73	Very confident
	26	Somewhat confident
	1	Not too confident
	*	Not at all confident

SECTION III –TECHNOLOGY IN TEACHING

This section includes questions about different ways you and your students might use digital technologies (such as the internet and email, social media or social networking sites, tech devices such as tablet computers, smartphones and apps, etc.) as part of the learning process.

Q13 Please tell us if you or your students ever use any of the following digital tools, either <u>in the classroom</u> or in <u>completing school assignments</u>. When thinking about your answer, please include digital tools supplied by you or the school, as well as any items students might own themselves.

		YES, I DO THIS	YES, MY STUDENTS DO THIS	YES, BOTH I AND MY STUDENTS DO THIS	NO
a.	A computer lab or computer workstation (a space devoted to student computer use) available at your school	7	15	73	4
b.	A computer/laptop cart available at your school	9	19	43	29
c.	A projector that is connected to a laptop or desktop computer or other digital device	42	2	53	3
d.	An interactive whiteboard	16	5	31	48
e.	A digital camera other than a cell phone	21	10	35	33
f.	A digital video recorder other than a cell phone	15	13	27	45
g.	A tablet computer	14	18	11	57
h.	An e-book reader	12	20	13	55
i.	A cell phone and/or smartphone	12	16	44	27

Q14 Overall, when it comes to knowing how to use digital technologies (such as the internet and email, social media or social networking sites, tech devices such as tablet computers, smartphones or gaming systems, apps, etc.) which of the following statements best describes YOU?

	CURRENT	
%	18	I usually know more than my students
	42	My students usually know more than I do
	40	Our knowledge levels are usually about equal

Q15 Do you agree or disagree with each of the following statements about today's middle and high school students?

		STRONGLY AGREE	SOMEWHAT AGREE	SOMEWHAT DISAGREE	STRONGLY DISAGREE
a.	Compared with previous generations, today's students have fundamentally different cognitive skills because of the digital technologies they have grown up with	40	48	9	2
b.	Today's digital technologies are creating an easily "distracted" generation with short attention spans	43	44	11	2
c.	Today's students are really no different than previous generations, they just have different tools through which to express themselves	11	36	40	12
d.	Today's students are more media savvy than previous generations	53	33	12	2
e.	Today's students are more literate than previous generations	2	18	61	19
f.	Today's students are very skilled at multi-tasking	9	38	39	14
g.	Today's students are too "plugged in" to digital technologies and need more time away from them	38	48	12	2

Q16 Please tell us if you ever have your students to do any of the following...

		YES	NO
a.	Submit assignments online	76	24
b.	Access or download assignments from an online site	79	21
c.	Edit or revise their own work using a collaborative web-based tool such as GoogleDocs	36	64
d.	Edit others' work or give others feedback using a collaborative web-based tool such as GoogleDocs	29	71
e.	Develop, share or post their work on a website, wiki or blog	40	60
f.	Participate in online discussions	39	61
g.	Do research or search for information online	95	5
h.	Post their own work online where people other than their classmates or teachers can see it	22	78

Q17   Do your students ever use their <u>cell phones</u> for the following school-related activities, or not?

		YES	NO	STUDENTS CANNOT HAVE CELL PHONES IN CLASS[16]
a.	Looking up information IN CLASS	42	9	49
b.	Texting IN CLASS with you or other students as part of an assignment or lesson	11	38	51
c.	Taking pictures or recording video for a school assignment	38	17	45
d.	Using an online cell phone platform such as Celly	2	49	49
e.	Uploading school-related content to the internet	18	34	48

Q18   Do you agree or disagree with each of the following statements about the overall impact of today's digital technologies on middle and high school students?

		STRONGLY AGREE	SOMEWHAT AGREE	SOMEWHAT DISAGREE	STRONGLY DISAGREE
a.	Today's digital technologies encourage greater collaboration among students	23	56	18	2
b.	Today's digital technologies allow students to share their work with a wider and more varied audience	52	44	3	*
c.	Today's digital technologies encourage student creativity and personal expression	26	53	20	3
d.	Today's digital technologies do more to distract students from schoolwork than to help them academically	17	47	31	5
e.	The internet encourages learning by connecting students to resources about topics of interest to them	31	59	9	1
f.	The multimedia content available online today immerses students more fully in topics they study	24	52	22	2
g.	The availability of digital content has broadened my students' worldviews and perspectives	23	49	24	5

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[16] Note that percentages vary for this response category across items because not all teachers responded to each item in this question. Therefore, the base on which the percentages are based changed from item to item, as did the number of teachers selecting this response option.

Q19   How important do you feel each of the following skills is for your students to be successful in life?

		ESSENTIAL	IMPORTANT BUT NOT ESSENTIAL	ONLY SOMEWHAT IMPORTANT	NOT IMPORTANT
a.	Writing effectively	91	8	*	0
b.	Finding information quickly	56	40	4	*
c.	Judging the quality of information	91	9	*	0
d.	Communicating their ideas in creative, engaging or interesting ways	59	38	3	*
e.	Presenting themselves effectively in online social networking sites	31	41	23	5
f.	Working with audio, video or graphic content	23	54	22	2
g.	Behaving responsibly online	85	14	2	0
h.	Understanding privacy issues surrounding digital and online content	78	20	2	*

SECTION IV – THE IMPACT OF DIGITAL TECHNOLOGY ON RESEARCH

The questions in this section ask about the impact of today's digital technologies (such as the internet and email, social media and social networking sites, tech devices such as tablet computers, smartphones and apps, etc.) on how students are taught and learn to <u>engage in research</u>.

Q20   First, overall, would you say the impact of the internet on students' research habits has been mostly positive or mostly negative?

	CURRENT	
%	77	Mostly positive
	23	Mostly negative

Q21   Overall, what would you say is the most POSITIVE aspect of students today being able to conduct research online?

TEXT BOX

Q22   Overall, what would you say is the most NEGATIVE aspect of students today being able to conduct research online?

TEXT BOX

Q23   Thinking about the research habits of your students...

How likely, if at all, are your students to use each of the following sources in a typical research assignment?

		VERY LIKELY	SOMEWHAT LIKELY	NOT TOO LIKELY	NOT AT ALL LIKELY
a.	Google or other general online search engines	94	5	1	*
b.	Online databases such as EBSCO, JSTOR or Grolier	17	29	36	18
c.	A research librarian at your school or local public library	16	37	34	14
d.	Their peers	42	46	10	2
e.	Textbooks (either print or electronic)	18	48	28	5
f.	Printed books (other than textbooks)	12	38	41	9
g.	Wikipedia or other online encyclopedias	75	19	4	2
h.	YouTube or other social media sites	52	33	13	3
i.	News sites of major news organizations such as the New York Times or CNN	25	49	23	3
j.	SparkNotes, CliffNotes, or other study guides	41	34	19	6
k.	Student-oriented search engines such as Sweet Search	10	34	39	17

Q24   Overall, how would you rate your students on each of the following?

		EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
a.	Understanding how online search results are generated	5	18	29	26	21
b.	Ability to use appropriate and effective search terms and queries	6	20	36	29	9
c.	Ability to assess the quality and accuracy of information they find online	3	11	26	37	24
d.	Ability to recognize bias in online content	1	7	20	38	33
e.	Patience and determination in looking for information that is hard to find	1	6	15	35	43
f.	Ability to use multiple sources to effectively support an argument	3	12	26	39	20

Q25   Do you ever....

		YES	NO
a.	Give your students research assignments in which they are NOT permitted to use online search engines	29	71
b.	Develop research questions or assignments that require students to use a variety of sources, both online and offline	83	17
c.	Spend class time discussing with students how to assess the reliability of information they find online	80	20
d.	Spend class time discussing with students how search engines work and how search results are generated/ranked	35	65
e.	Spend class time helping students improve their search terms and queries	57	43
f.	Spend class time discussing with students how to generally conduct research using the internet	71	29
g.	Direct students to specific online resources which you feel are most appropriate for their assignments	90	10

Q26   Do you agree or disagree with each of the following statements?

		STRONGLY AGREE	SOMEWHAT AGREE	SOMEWHAT DISAGREE	STRONGLY DISAGREE
a.	The amount of information available online today is overwhelming for most students	35	48	15	2
b.	Search engines have conditioned students to expect to be able to find information quickly and easily	76	23	1	*
c.	The internet enables students to find and use resources that would otherwise not be available to them	76	23	1	*
d.	The internet makes students more self-sufficient researchers who are less reliant on adult help	18	47	28	7
e.	Today's digital technologies discourage students from finding and using a wide range of sources for their research	25	46	23	6
f.	Today's digital technologies make it harder for students to find and use credible sources	13	47	33	7

SECTION V – TEACHING WRITING

The questions in this section ask about the impact of today's digital technologies (such as the internet and email, social media and social networking sites, tech devices such as tablet computers, smartphones and apps, etc.) on how students are taught and learn to <u>write</u>.

Q27   In general, how important do you feel the incorporation of <u>writing assignments</u> into formal learning is today?

	CURRENT	
%	92	Essential
	7	Important, but not essential
	*	Only somewhat important
	*	Not important

Q28   Thinking about the 2011-2012 academic year, please tell us about how often, if at all, you have your students do each of the following.

		EVERYDAY OR ALMOST EVERDAY	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	JUST A FEW TIMES A YEAR	NOT AT ALL
a.	Engage in creative writing such as poetry, plays, fiction or short stories	5	12	18	31	33
b.	Write a short essay, short response, or opinion piece	13	45	25	10	7
c.	Write a research paper	1	1	11	64	23
d.	Create a multimedia or mixed media piece incorporating video/audio/images	1	3	17	56	22
e.	Write out mathematical problems, proofs or explanations of mathematical concepts	13	9	5	5	68
f.	Write in a journal	20	21	12	11	37
g.	Write up a lab	1	10	11	6	72
h.	Write music or lyrics	1	1	4	22	72
i.	Write computer programs	1	1	1	3	95
j.	Design computer games	*	*	1	2	97

Q29   Do you ever encourage or require your students to do some of their writing by hand?

CURRENT
%   94   Yes
        6   No

Q30   Overall, do you think using computers and other digital tools <u>for writing</u> makes a student MORE likely or LESS likely to do each of the following, or does it not really make a difference?

	DIGITAL TOOLS MAKE STUDENTS MORE LIKELY TO DO THIS	DIGITAL TOOLS MAKE STUDENTS LESS LIKELY TO DO THIS	DIGITAL TOOLS MAKE NO DIFFERENCE IN THIS REGARD
a. Be creative	50	12	37
b. Present ideas clearly	46	13	41
c. Take short cuts and not put effort into their writing	68	10	22
d. Communicate well	32	28	41
e. Use poor spelling and grammar	40	38	22
f. Write too fast or be careless	46	19	35
g. Write better because they can revise and edit easily	56	19	25
h. Write in multiple genres and styles	24	13	63

Q31   What would you say is the biggest challenge today in teaching your students to write well?

TEXT BOX

Q32   Do today's digital technologies...

CURRENT
%   50   Make it EASIER for you as a teacher to shape or improve student writing
       18   Make it MORE DIFFICULT for you to shape or improve student writing
       31   Have NO IMPACT on your ability to shape or improve student writing

Q33   Overall, how would you rate your students in their ability to do each of the following?

	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
a. Synthesize content and information from multiple sources into a cohesive piece of work	2	15	38	33	11

b.	Effectively organize and structure writing assignments	3	21	43	28	5
c.	Understand and consider multiple viewpoints on a particular issue or topic	3	18	39	32	8
d.	Use mixed media or multimedia to express their ideas	10	32	36	18	4
e.	Read and digest long or complicated texts	1	8	22	38	31
f.	Construct a strong argument	2	13	36	37	12
g.	Give constructive feedback on other students' work	3	13	35	37	13
h.	Use tone and style appropriate for their intended audience	2	14	40	34	10
i.	Navigate issues of fair use and copyright in composition	1	7	25	37	30
j.	Appropriately cite and/or reference content	3	12	29	37	20

Q34   Do you ever....

		YES	NO
a.	Check student work for plagiarism using an online resource such as Turnitin.com or by entering student text into a search engine	71	29
b.	Spend class time discussing with students the concepts of fair use and copyright	75	25
c.	Spend class time discussing with students the concepts of citation and plagiarism	88	12

SECTION VI – TEACHING PRACTICE AND SCHOOL CONTEXT

The questions in this section ask about the impact of today's digital technologies (such as the internet and email, social media and social networking sites, tech devices such as tablet computers, smartphones and apps, etc.) on the way teachers engage in their profession.

Q35   First, has the internet and other digital technologies had a MAJOR impact, MINOR impact, or NO impact on you personally in each of the following ways?

		MAJOR IMPACT	MINOR IMPACT	NO IMPACT
a.	Giving you access to more material, content, and resources to use in your teaching	92	8	1
b.	Allowing you to share ideas with other educators	69	28	4
c.	Enabling interaction with students	57	37	6
d.	Enabling interaction with parents	67	30	3
e.	Increasing the range of content and skills you need to be knowledgeable about	75	22	3
f.	Generally requiring more work for you as a teacher	41	42	18

Q36   How often, if ever, do you do the following?

		EVERYDAY OR ALMOST EVERYDAY	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	JUST A FEW TIMES A YEAR	NOT AT ALL
a.	Look for material online to help you create lesson plans	36	44	14	5	1
b.	Look online for the latest research in your field or the subjects you teach	22	35	27	14	2
c.	Receive email alerts or online newsletters that follow developments in your field	52	28	12	4	4
d.	Interact online with other teachers to get or give advice on handling classroom issues	22	23	20	20	14
e.	Look online for content or material you think will engage your students	45	39	12	3	*
f.	Use a social networking site like Ning or Twitter to exchange ideas with other teachers	8	10	10	11	60

Q37   Is there one website or online resource you turn to regularly for resources about teaching writing and/or research?

INSERT TEXT BOX

Q38 How often, if ever, do you get new ideas for incorporating digital technologies into the learning experience from each of the following sources?

		VERY OFTEN	OFTEN	SOME-TIMES	JUST ONCE IN A WHILE	HARDLY EVER OR NEVER
a.	Your own research and experience	32	31	26	8	3
b.	Other teachers	17	39	33	9	2
c.	Formal training	7	21	38	23	10
d.	Informal training	7	22	40	22	9
e.	Your students	8	22	40	21	9

Q39 Is each of the following a MAJOR challenge, MINOR challenge, or NOT a challenge at all for you, personally, in incorporating more digital technologies and digital learning into your classroom pedagogy?

		MAJOR CHALLENGE	MINOR CHALLENGE	NOT A CHALLENGE AT ALL
a.	General resistance by colleagues and administrators	14	38	49
b.	Time constraints	61	33	6
c.	Pressure to teach to assessments	43	38	19
d.	Lack of resources and/or access to digital technologies among your students	40	41	19
e.	Your own lack of comfort, knowledge or training with digital technologies	9	43	48
f.	Lack of technical support (such as repair, troubleshooting, set-up) to use digital technologies consistently	30	47	24

Q40 Overall, compared with other schools, would you say your school is AHEAD of the curve, about AVERAGE, or BEHIND the curve when it comes to using digital technologies effectively?

	CURRENT	
%	26	Ahead of the curve
	49	About average
	25	Behind the curve

Q41 Which of the following two statements best describes the school in which you currently teach?

	CURRENT	
%	62	Our school does a GOOD job providing teachers the resources and support they need to effectively incorporate the newest

digital technologies into their curriculum and pedagogy

38   Our school does a POOR job providing teachers the resources and support they need to effectively incorporate the newest digital technologies into their curriculum and pedagogy

Q42   Does YOUR SCHOOL OR DISTRICT currently provide teachers with formal training in how to incorporate digital technologies into the learning process?

	CURRENT	
%	68	Yes
	32	No

Q43   Have you ever sought out on your own opportunities to learn more about incorporating digital technologies into the learning process?

	CURRENT	
%	85	Yes
	15	No

Q44   Does YOUR SCHOOL (not individual employees) currently have any of the following?

	YES	NO
a. Its own website	99	1
b. Its own online community forum or shared space (apart from its own website) using a platform such as NING, Schoology or Edmodo	27	73
c. A profile or page on a social media site such as Facebook, Twitter, YouTube, or Flickr	37	63

Q45   How many of your students...

	ALL OR ALMOST ALL	MOST	SOME	HARDLY ANY	NONE
a. Have sufficient access IN SCHOOL to the internet and other digital technologies they need to effectively complete school assignments	54	27	15	5	*
b. Have sufficient access AT HOME to the internet and other digital technologies they need to effectively complete school assignments	18	54	26	2	*

Q46   Based on your experience, which of the following comes closest to your view of the impact of digital technologies on students today...

CURRENT

%   44   Today's digital technologies are NARROWING THE GAP between the most and least academically successful students

56   Today's digital technologies are leading to even GREATER DISPARITY between the most and least academically successful students

Q47   Do you agree or disagree with each of the following statements?

		STRONGLY AGREE	SOMEWHAT AGREE	SOMEWHAT DISAGREE	STRONGLY DISAGREE
a.	Today's digital technologies are leading to greater disparities between affluent and disadvantaged schools and school districts	39	45	13	3
b.	It is imperative for schools to teach and assess today's students using the digital technologies they are most comfortable with	27	53	18	3
c.	Courses or content that focus on digital literacy must be incorporated into every school's curriculum	47	44	8	1
d.	Courses or content that focus on how students should behave and treat others online must be incorporated into every school's curriculum	56	36	7	1

Q48   How much of an issue, if at all, is managing your students' use of cell phones and other technology in your classroom?

CURRENT

%   28   Major issue
43   Minor issue
11   Not an issue
19   Students cannot carry or use cell phones in my school

Q49   Does your school currently have any of the following in place? If so, how much of an impact, if any, does it have on your teaching?

		YES, HAS A MAJOR IMPACT ON MY TEACHING	YES, HAS A MINOR IMPACT ON MY TEACHING	YES, HAS NO REAL IMPACT ON MY TEACHING	NO, SCHOOL DOES NOT CURRENTLY HAVE THIS
a.	Rules governing the use of cell phones by students on school grounds	21	43	34	3

b.	Filters blocking access to certain websites or online content	32	46	19	3
c.	An AUP or acceptable use policy governing how school computers and networks may and may not be used	16	33	49	3

SECTION VIII -- DEMOGRAPHICS

SEX   We have just a few last questions for statistical purposes only. First, are you male or female?

	CURRENT	
%	29	Male
	71	Female

AGE   What is your age? PLEASE SELECT FROM THE DROP-DOWN MENU BELOW

	CURRENT	
%	*	Younger than 22
	*	22-24
	7	25-29
	13	30-34
	13	35-39
	16	40-44
	14	45-49
	15	50-54
	13	55-59
	8	60-64
	2	65 or older

YRS   For how many years have you been teaching? PLEASE SELECT FROM THE DROP-DOWN MENU BELOW

	CURRENT	
%	*	This is my first year
	8	2 to 5
	23	6 to 10
	23	11 to 15
	18	16 to 20
	28	21 or more years

STATE In what state do you currently teach? (DROP-DOWN ALL 50 STATES AND US TERRITORIES)

Q50   Did you participate in a National Writing Project Invitational Summer Institute any time between 2007 and 2011?
       *response required

	CURRENT	
%	28	Yes
	72	No

SITE   At what National Writing Project site did you attend the Invitational Summer Institute? If you attended at more than one site, please choose the most recent. (DROP-DOWN LIST OF SITES)

       Based on NWP SI teachers

CT   Would you describe the community in which you teach as...

	CURRENT	
%	23	A large metropolitan area or big city
	50	A small city or suburb
	13	A small town
	14	A rural area
	*	Distance or online courses

SES   Would you describe the students you teach as...

	CURRENT	
%	17	Mostly upper or upper middle income
	32	Mostly middle income
	24	Mostly lower middle income
	20	Mostly low income
	6	Mostly living below the poverty line

TYPE   Do you currently teach...

	CURRENT	
%	95	At a public school
	1	At a private school
	1	At a parochial school
	2	At a charter school
	*	Distance or online classes
	1	Other (PLEASE SPECIFY)

SIZE How many students in total are currently enrolled in the school at which you teach?

	CURRENT	
%	1	Fewer than 100
	6	100 to under 300
	10	300 to under 500
	21	500 to under 1000
	22	1000 to under 1500
	18	1500 to under 2000
	23	2000 or more

EDUC What is the LAST grade or class you completed in school?

	CURRENT	
%	*	High school graduate
	10	College graduate (B.A., B.S., or other 4-year degree)
	90	Post-graduate training (toward a Master's or Ph.D., Law or Medical degree)

PAR Are you the parent or guardian of any children under age 18 now living in your household?

	CURRENT	
%	44	Yes
	56	No

HISP Are you, yourself, of Hispanic or Latino origin or descent, such as Mexican, Puerto Rican, Cuban, or some other Latin American background?

	CURRENT	
%	5	Yes
	91	No
	4	Refused

RACE What is your race...

NOTE: If you are Hispanic, please tell us if you consider yourself WHITE Hispanic or BLACK Hispanic

	CURRENT	
%	86	White
	2	Black or African-American
	2	Asian or Pacific Islander
	1	Mixed race
	1	Native American/American Indian
	2	Other (PLEASE SPECIFY)

5   Refused

INC   Last year, that is 2011, what was your total household income from all sources, before taxes?

	CURRENT	
%	0	Less than $10,000
	*	$10,000 to under $20,000
	1	$20,000 to under $30,000
	4	$30,000 to under $40,000
	7	$40,000 to under $50,000
	24	$50,000 to under $75,000
	23	$75,000 to under $100,000
	24	$100,000 to under $150,000
	9	$150,000 or more
	9	Refused

That completes the survey!
Thank you again for participating in this study being conducted jointly by the Pew Internet &
American Life Project, the College Board, and the National Writing Project.

SUBMIT SURVEY BUTTON

[After submission, redirect to Pew Internet homepage]

Focus group discussion guides

Online Focus Group with Advanced Placement Teacher Panel

Project Description:

The Pew Internet & American Life Project, the College Board, and the National Writing Project are partnering on a research study exploring how technology is used in classrooms today, as well as how new technologies impact teachers' professional development and interactions with students and parents. The results will be made available to the public in a report issued next year. Your responses may be quoted anonymously in the report, but your identity will never be shared with anyone other than the researchers conducting the study. We understand that some questions may not apply to all teachers. If you cannot answer a particular question, please feel free to indicate that and move to the next discussion item. We truly appreciate your participation.

Activity #1 (Technology and Research Practice)

Discussion One: Based on your observations, how do today's high school students (both AP and non-AP) define "research" and what it means to conduct effective research? What are the key ways technology (such as the internet, search engines, online resources, wikis, digital devices such as cell phones and tablet computers, etc.) has impacted the research skills of your students, either positively or negatively?

Discussion Two: Given today's technologies, what do you think are the most critical research skills students should learn? At what stage in their educational careers should students begin learning these skills?

Discussion Three: How do you approach teaching these critical research skills [link to Discussion Two] to your high school students? How extensively, if at all, do you incorporate technology (either in the classroom or home assignments) to help students develop the research skills they need? How do you develop these teaching practices?

Discussion Four: What have been the biggest challenges or obstacles you have faced in teaching effective research skills to your high school students? How do you see technology changing and shaping the way research skills are taught? How receptive are students to learning effective research skills?

Activity #2 (Technology and Writing Instruction)

Discussion One: Based on your observations, how do students today define "writing"?

POLL: Which of the following activities do <u>students</u> think of as writing?

> Formal writing (essays, papers, etc)
> Creative writing

Blogging
Texting
Other (please describe)

POLL: Which of the following activities do <u>you</u> think of as writing?

Formal writing (essays, papers, etc)
Creative writing
Blogging
Texting
Other (please describe)

POLL: Do today's students do enough writing, both inside and outside of the classroom?

Discussion Two: What are the key ways technology (such as social networks, blogs, wikis, other forms of social media, and digital devices such as cell phones and tablet computers) has impacted student writing? Overall, do new technologies help students write better or do they impact student writing in mostly negative ways?

Discussion Three: How do you approach teaching students how to write? How extensively, if at all, do you incorporate technology (either in the classroom or home assignments) to help students learn writing skills? How do you develop these teaching practices?

Discussion Four: What have been the biggest obstacles/challenges you have faced in teaching writing to today's students? How do you see technology changing and shaping the way writing skills are taught? How receptive are students to learning writing skills?

Activity #3 (Technology and Professional Practice)

Discussion One: How has technology (such as the internet, social networks, blogs, digital devices such as cell phones/tablet computers/laptops, etc.) impacted teacher professionalization and training? How has technology shaped the way teachers communicate and/or collaborate with one another?

Discussion Two: How has technology shaped the way teachers manage their classrooms and discipline their students? How has technology shaped the way teachers communicate with students? Does technology strengthen or weaken communication between teachers and students?

Discussion Three: Overall, does technology make it easier or harder for you to carry out your professional roles and responsibilities? What are some examples of how it makes your professional role easier/harder?

Discussion Four: To what extent does your school encourage or discourage the use of new technologies in the classroom? Has your school taken any steps to provide *access* to new technologies to teachers and/or students? Does your school provide any specific *training* or *support* to help teachers use new

technologies effectively?

Activity #4 (Personal Perceptions of Technology/Incorporating Technology into Teaching)

Discussion One:

POLL: Do you consider yourself an early adopter of new technologies (such as social media, smartphones, tablet computers, e-readers, apps, etc.)?

> Yes
> No

POLL: In general, how comfortable are you learning how to use new technologies?

> Extremely comfortable
> Very comfortable
> Somewhat comfortable
> Not comfortable

POLL: Have your students ever taught you new ways to use certain technologies or about the impact a new technology can have?

> Yes (Please give an example)
> No

Discussion Two: To what extent do you, personally, feel new technologies should be incorporated into the school environment and classroom learning? Do you *enjoy* incorporating new technologies into your teaching or do you find it burdensome? Do you ever involve your students in developing new ways to incorporate technology into the classroom?

Discussion Three: Are you ever concerned that your students are "overexposed" to technology today or have too much "screen time" in their lives? What are some of the specific ways you see students being personally impacted by today's technologies? Are the impacts you see mostly harmful or mostly beneficial for students?

Discussion Four: In your experience, to what extent do new technologies create disparities across classes, schools or districts? To what extent do new technologies create disparities among your students? What impact do those disparities have?   How do you and/or your school try to address those disparities?

Online Focus Group with NWP Summer Institute Teachers

Thank you for participating in this national study of teachers being conducted by the Pew Research Center's Internet & American Life Project, the College Board, and the National Writing Project. You may log in to the discussion as many times as you wish until **6:00 AM EST on Sunday, January 29**, when the discussion will close. If you leave the discussion and then log back in, you will be taken to the last section you completed. Once you have completed all sections, you can move back and forth throughout the discussion to see others' posts and respond to them. **We encourage interaction!**

There are four sections in this discussion, and some questions require responses in order to move forward (marked mandatory). The first section includes some basic questions so we can learn a little more about you. The second section includes questions about the impact of digital technologies on your students' writing and research habits. The third section asks about your own teaching practices. Finally, the last section includes questions about using multimedia assignments. **Please complete all four sections.**

If you have any questions or concerns, or have trouble logging in to the discussion, please contact Pew Internet's Director of Research, Kristen Purcell, at **kpurcell@pewinternet.org**.

SECTION I

1. Which of the following is the HIGHEST grade level you currently teach? (Select one)

> 6
> 7
> 8
> 9
> 10
> 11
> 12

2. What subjects/classes do you currently teach? Please list them below.

3. Are you male or female?

> **Male**
> **Female**

4. What is your age? Please choose a category below.

5. For how many years have you been teaching? Select answer below.

6. In what state do you currently teach? Please tell us below.

7. Would you describe the community in which you teach as… (Select one)

     A large metropolitan area or big city

     A small city or suburb

     A small town

     A rural area

8. Would you describe the students you teach as… (Select one)

     Mostly upper or upper middle income

     Mostly middle income

     Mostly lower middle income

     Mostly low income

     Mostly living below the poverty line

9. Thinking about all of the classes you are currently teaching, what is the **longest writing assignment** (approximate number of pages) you have given students this year?   Please briefly describe the assignment.

10. Thinking about all of the classes you are currently teaching, which of the following best describes the **longest text** your students have had to read this year?

     A long novel

     A short novel

     A chapter from a textbook

     A short story or play

     An essay or short article

     Other _____

SECTION II – How Technology Impacts Student Writing and Research

1. In your experience, in what ways do the internet and other digital technologies, such as social media, Wikis, tools like GoogleDocs, cell phones and texting, and smartboards, impact your students' writing abilities? Please give examples.

2. Some feel that today's digital technologies (such as social media, Wikis, tools like GoogleDocs, cell phones and texting, and smartboards) provide students more opportunities to write, create their own content and express themselves than was the case in previous generations, thereby encouraging the development of skills such as creativity and the thoughtful articulation of ideas. Based on your experience, do you agree or disagree with this view? Please explain.

3. Some feel that today's digital technologies (such as social media, Wikis, tools like GoogleDocs, cell phones and texting, and smartboards) are undermining students' ability to focus and generally shortening their attention spans. Based on your experience, do you agree or disagree with this view? Please explain.

4. Compared with previous generations, do you feel your current students are more or less skilled at each of the following? Or do you think there is no real difference between present and past generations of students?

- Concentrating on, reading deeply, and thinking critically about long or challenging texts?
- Thoroughly researching an idea or assignment?
- Critically evaluating the information they gather?
- Formulating persuasive and/or well-informed viewpoints and arguments?
- Producing clear and cohesive written material?
- Expressing themselves creatively?

5. Overall, what do you see as the **purpose** or **value** of teaching students how to read and critically examine long or challenging texts? Is this a critical skill for today's students to learn? Why or why not? How do you see it serving them in the future, if at all?

6. Overall, what do you see as the **purpose** or **value** of teaching students how to write long and/or formal texts? Is this a critical skill for today's students to learn? Why or why not? How do you see it serving them in the future, if at all?

Section III – Teaching Writing and Research

1. What has been the **most effective** assignment/classroom lesson/teaching approach you have used to develop your students' writing skills? What specifically made it effective? Did it incorporate or address the use of digital technologies (such as social media, Wikis, tools like GoogleDocs, cell phones and texting, and smartboards), either in class or by students at home?

2. How often, if ever, do you encounter issues with or have to take into account students' **access to digital technologies** when developing your lessons and assignments? Do most of your students have high-speed internet access at home? Do they generally have access to the digital devices they need (laptops, computers, etc.) to complete their assignments?

3. What does it mean to **search for information** in today's digital environment? To what extent do your students have the skills for using a variety of search tools? How do they evaluate the **credibility** of sources? How do you teach them these skills, if at all?

4. How well do your students understand the concepts of **fair use** and **plagiarism**? Do you, personally, spend class time talking about fair use and/or plagiarism? Do you take any active steps to monitor your students' work for plagiarism (for example, online resources such as turnitin.com)?

5. Please complete the following statement… "The **biggest challenge** in teaching my students to write effectively is…..(FILL IN THE BLANK)"

6. Thinking ahead ten years — to the year 2022 — how do you think writing will be taught in middle schools and high schools? What will be different? What will be the same? Will there be radical pedagogical changes over that time, or will writing be taught largely as it is today?

SECTION IV – Multimedia and Mixed Media

1. Have you given your students any assignments this year that required them to present information in a **mixed media** or **multimedia** format?

> **Yes**
> **No**

IF NO:
2. Please tell us below the main reasons you do **NOT** give your students mixed media or multimedia assignments.

IF YES:
2. Can you give an **example** of a recent mixed media or multimedia assignment you havegiven your students? Did you feel it was successful? Why or why not?

3. Why did you choose to incorporate multimedia or mixed media assignments into your teaching? What do you see as the **major benefits** of this type of assignment? What are the **major drawbacks**? How do students respond to this type of assignment?

ASK ALL – RANDOMIZE TEACHERS TO RECEIVE ONE OF THREE VIDEOS
4a/4b/4c. This is a short video clip with an example of one type of multimedia assignment created by students. Please watch the video and then answer the questions below.

What does this piece of student work say to you about research and writing using digital technologies?
What advice would you give this student about where to go next with this piece?
How would you support the student?
What are the implications of this piece for your own teaching? Specifically…Do you feel producing
        something like this would be a valuable experience for your students and a good use of time and
        resources (both yours and theirs)? Why or why not?
Do you have any concerns about or face any particular obstacles in assigning this type of work? If so, what are they?

Thank you! That completes all of the specific questions we have. Your insights and experiences will be used to develop a national survey of teachers, to be conducted this spring. If there are any important elements of teaching student writing and research in today's technological environment that you feel we have not addressed, please tell us below.

In-Person Focus Group with College Board Teachers

HAVE TEACHERS FILL OUT QUESTIONNAIRE WHILE THEY ASSEMBLE AT TABLE (at end of guide)

I.   INTRODUCTIONS (5 min)

- Who we are and what the study is about (note that we are building on prior teacher focus groups)
- Confidentiality
- We are taping the discussion, only researchers will have access to the tape
- May quote in report but no names will be used
- Ground rules
  - No wrong answers, interested in all experiences/opinions
  - don't speak over others so we can hear everyone on tape
  - okay to disagree
  - speak loudly so we can hear everyone on tape
  - please turn all cell phones and electronic devices off
- Incentives will be handed out at the end, pizza will be available

II.   TECHNOLOGY'S IMPACT ON RESEARCH SKILLS (25 min)

Let's jump right in…

Pull out the green and red cards – Very positive, mostly positive, mostly negative, very negative

When I ask a question, please hold up the card that best represents your opinion, facing out so everyone can see it….

- **QUESTION #1: Overall, the impact of the internet on your student's RESEARCH HABITS is…? HOLD UP YOUR CARDS**

  Go around the room and probe answers. Themes to discuss…
    o   Availability of more/better sources
    o   Creates laziness, student too reliance on internet/search to produce answers
    o   Students want instant answers, give up when they can't find them in five minutes
    o   Can't judge the quality of different online sources
    o   Too quick to believe everything on the internet
    o   Can do research faster
    o   Does it make research more interesting for students? Can dive deeper into topics?
    o   Does it make research more fun?
    o   Students' overall reading comprehension and tolerance for reading long documents
    o   Have trouble synthesizing info into their own arguments? Too much information?
    o   Students cut and paste info and submit it as their own (HOLD FOR LATER)
    o   Students' overall online search skills – good or bad?
    o   Students' ability to formulate good research questions
    o   Students' ability to bring new facts and insights to their teachers and classmates
    o   Students' overall passion for exploring a research question in depth
    o   Students' ability to contribute their own knowledge and experiences to a subject
    o   Students' attention spans
    o   Students' ability to accept ambiguity when there is no clear answer
    o   Students' overall critical thinking skills
    o   Students' ability to see multiple sides of a topic

III.   TECHNOLOGY'S IMPACT ON WRITING SKILLS (25 min total)

- **QUESTION #2: Overall, the impact of the internet and other digital technologies like cell phones and texting on your student's writing skills is…? HOLD UP YOUR CARDS (15 min)**

  Go around the room and probe answers. Themes to discuss…

  - Grammar/Spelling
  - Overall structure/organization/flow of written work
  - Willingness to edit their own work
  - Ability to edit their own work
  - Cohesion of thoughts and ideas in writing assignments
  - Students' ability to find their own voice in their writing
  - Students' ability to develop and understand different writing styles
  - Students' ability to support an argument with facts
  - Students' ability to formulate their own opinions
  - Collaboration with others
  - Creative writing
  - Formal writing
  - ability to discuss a topic at length
  - originality in their thinking and writing
  - awareness of audience
  - word choice

- **How much of an issue is plagiarism? (10 min)**

  - Do students fully understand what plagiarism is and when they are doing it?
  - Do students view plagiarism as an ethical issue?
  - Do you spend class time on this issue?

IV.   **Constructing assignments/Teaching research and writing (35 min total)**

- **Construction of assignments (10 min)**

    Given everything we've just talked about, how does this impact how YOU construct research and writing assignments and effective research and writing skills?

    o First, is it getting harder to create research and writing assignments for students?

    o How much do you find yourself changing/adjusting your…

       o teaching methods

       o assignments

       o expectations in response to students' research and writing habits and behaviors?

    o Enforce rules about sourcing? Require non-internet sources?

    o Spend class time teaching about how to evaluate online sources and find alternative material/primary sources? How do you do this?

    o Assuming most research gets done online, are you okay with that? In general, do you embrace that trend or push against it?

    o Do you regularly vet student papers for plagiarism? How so?

    o Do you allow students to submit things in multi-media formats or via collaborative tools?

    o How do digital divide concerns shape your assignments?

- **What's the MOST SUCCESFUL** *research/writing* **assignment or lesson you've used? (10 min)**
  - What specifically have you found <u>DOES NOT WORK</u>?
  - How <u>receptive are your students</u> to learning approaches to research that go beyond search engines and online sources?
  - What's the <u>biggest obstacle</u> you face in teaching effective research and writing skills? (Access issues, student impatience, lack of time)

- **What skills do your students come to you with and what do you have to teach them? (10 min)**
  - What skills do you think they should come to your class having already mastered? How/when should that learning begin?
  - What skills do you think you should be teaching at this level?
  - Should these digital literacy skills be incorporated into existing curricula or be a separate curriculum?
  - Do teachers have time to incorporate these lessons into their teaching?

- **Do your students ever teach you new ways to use certain technologies or the impact a new technology can have? Do you ever involve your students in developing new ways to incorporate technology into the classroom? (5 min)**

V.   OTHER IMPACTS OF TECHNOLOGY ON TEACHERS/STUDENTS (15 min)

QUESTION: Overall, technology has a (positive/negative) impact on your ability to do your job well?

Go around the room and probe answers. Themes to discuss…

- o   Professionalization and training?
- o   Communicate and/or collaborate with one another? Use online teaching forums to give/seek advice about things like lesson plans, classroom discipline?
- o   Communicate with students? Does technology strengthen or weaken communication between teachers and students?
- o   Communicate with parents/families?
- o   Disparities across students?
- o   Support from school in providing *access* to new technologies to teachers and/or students? Training?
- o   Does your school provide any specific *training* or *support* to help teachers use new technologies effectively?
- o   Do things like cell phones, texting, IM, etc distract your students' attention from what's happening in class? Rules?
- o   Cheating and plagiarism [already covered]

VI.   CLOSING THOUGHTS (10 min)

Before we end, are there things we didn't talk about that you want to bring up?

One last question….Given the pace of development in digital technologies, where do you see the classroom/school environment 10 or 20 years from now? How will it be different/similar to today's classrooms? How will students have changed?

[INCENTIVES AND PIZZA]

Pew Internet/College Board/National Writing Project Focus Group
December 13-14, 2011

1. Which grade level(s) do you currently teach? **(circle all that apply)**

6	**7**	**8**	**9**	**10**	**11**	**12**

2. What subjects/classes do you currently teach? Please list them below.

_____
_____
_____
_____
_____
_____
_____
_____

3. Are you….**(circle one)**   **Male**   **Female**

4. What is your age? _____

5. How many years have you been teaching? _____

6. How many years have you been teaching *at this school*? _____

(TURN OVER)

7. What is the single biggest POSITIVE impact digital technologies (the internet, cell phones, etc.)

    have on students today?

_____

_____

_____

_____

8. What is the single biggest NEGATIVE impact digital technologies (the internet, cell phones, etc.)

    have on students today?

_____

_____

_____

In-Person Focus Group with College Board Students

STUDENTS FILL OUT QUESTIONNAIRE WHILE THEY ASSEMBLE AT TABLE (at end of guide)

I.   INTRODUCTIONS (5 min)

- Who we are/what study is about

- Confidentiality

- We are taping the discussion, only researchers will have access to the tape

- May quote in report but no names will be used

- Ground rules

  o   No wrong answers, interested in all experiences/opinions

  o   be considerate

  o   don't speak over others so we can hear everyone on tape

  o   okay to disagree

  o   speak loudly so we can hear everyone on tape

  o   don't need to raise your hand

  o   please turn all cell phones and electronic devices off

- Incentives will be handed out at the end, pizza will be available

II.   TECHNOLOGY AND RESEARCH (50 min total)

A.   What is research? (10 min)

Let's start by talking about doing research for school projects. First, when I use the phrase "do research," what's the first thing that comes to mind? This is question #1 in the survey you filled out. Let's go around the room. **[WRITE KEY WORDS ON BOARD]**

- Do you do a lot of research for school assignments?

- Do you ENJOY doing research? Is it fun, challenging, hard? [Probe why/why not]

- What research project you've done recently did you really like? Why?

B.   Online Research (20 min)

Let's look at the first three items in the large grid, **Q5**…

- **When was last time you did research on the internet?**

  o   What does that entail, describe that process for me. Mostly search engines? How do you start?

- o What **search engines** do you use most often?
    - o Where/How did you **learn** to use those?
    - o How do you **decide which search results to look at**?
    - o How much **time** does it take to go through search results?
  - o Are there **other specific sites** online you go to when you have to do research for school?
    - o What do you like about those sites?
    - o Where/How did you learn about them?
    - o Do you ever use library websites?
  - o When you're doing research online, is that usually at home, at school, or someplace else? Are you usually alone or working with someone?

- **When was the last time you did research on something NOT using the internet?**

- **When was the last time you did research physically IN A LIBRARY?**
  - o Was that using library computers?
  - o Working with a librarian?
  - o Searching stacks or printed material?

C.   **Deep dive into research process (20 min)**

- **When you have to start researching something, what is usually your FIRST STEP? What is the <u>very first thing</u> you do?**

- **Let's talk about <u>Q6</u> in the survey….**
  Take out the <u>red and green cards</u>, and when I read each item, hold up the answer you wrote down….[very easy/easy/difficult/very difficult]

  - o Find trustworthy information on the internet for your school assignments

  - o Figure out how trustworthy different online sources are

    PROBE: How do you figure it out?
    - ▪ How did you learn how to do this? Did someone teach you?

- Overall, if you had to say, is most info you find online accurate or not?
  - Use a search engine to find good information on the internet
  - Figure out the original source of online information
  - Sort through online search results to find the best material

    PROBE: How much time does this take?

  - Sort through online content in general to find good material
  - Pull together all of the different online information you find into a cohesive project or paper

- **Overall, what's the <u>BEST</u> part about being able to do research online?**

- **What's the <u>WORST</u> part?**

- **Do you think technology <u>makes your research skills better or worse</u>?**

- **What would it be like to do research without the internet?**

III. TECHNOLOGY AND WRITING (30 min total)

A. What is writing? (10 min)

Let's switch gears and talk a little bit about writing.

- First, look at Q4 in the survey you filled out. When you hear the term "writing" what's the first word that comes to mind? **[WRITE KEY WORDS ON BOARD]**
- Altogether, how much writing do you do, in and out of school? What kinds of writing?
- Do you ENJOY writing? Is it fun, challenging, hard? [Probe why/why not]

B. Deep dive into writing process (10 min)

Let's talk about the actual process of writing, when you are working on school writing assignments…

- Tell me about your writing process, when you have an assignment to do. How do you approach that?
- When writing for school assignments, do you usually write by hand or using a computer or other digital device? What device do you like to write on? Why?
- Now, pull out the yellow and blue index cards. I'm going to list some different things you might use to write and I want you to tell me if they make you a **better (more skillful)** writer -- [BLUE YES] or [YELLOW NO]

- o Spell check
- o Grammar check
- o Digital thesaurus (built into your word processing program)
- o Cut and paste
  - **PROBE PLAGIARISM HERE**
- o Texting with your friends
  - **PROBE POS/NEG IMPACT OF INFORMAL WRITING HERE**
- o Using social network sites
- o What if I listed those same things, and asked you if they made the writing process **FASTER**, yes or no? Do they make writing easier?

C. **Perceptions of formal writing** (10 min -- may skip for time)

I've given each of you a set of 5 skills on the purple index cards. Without talking to each other, I want you to quickly sort those by how important you think each will be to your success 20 years from now. Most important on top, least important on the bottom.

- Formal writing
- Synthesizing large amounts of information
- Creative thinking and expression
- Finding information quickly
- Multi-media skills

What did you have on top? Bottom? Where is formal writing and why?

IV. **Technology and broader impacts** (20 min total)

Let's talk about the broad impacts using technology might have on students like yourselves.

- In your opinion, what is the **most positive thing** about being a student in today's technological world, the best impact thing digital technology does for students today?
- What is the **most negative thing**, the worst thing digital technology does for students?
- I want you to use the blue and yellow cards again to tell me if you agree or disagree with each of the following assertions people make....

  Overall, digital technologies like the internet and cell phones lead students to…
  - o Have short attention spans

- o Explore their worlds more fully

- o Expect to find information easily and quickly

- o Be more creative

- o Work together and collaborate with others more

- o Spend too much time in front of screens

- o Cheat more often and take more shortcuts

VI.   CLOSING (5 min total)

Thanks so much for participating and sharing your opinions today. Does anyone have any final thoughts
they want to share?

We may do more focus groups like this with students your age….

- Are there things we didn't ask you about or cover today when it comes to technology
  and research and writing that you think we should?

[PIZZA AND INCENTIVES]

Pew Internet/College Board/National Writing Project Focus Group
December 13-14, 2011

1. What is your grade level? (circle one)   **9   10   11   12**

2. When you hear the term "research," what is the FIRST WORD that comes to mind?_____

3. If you had to define "doing research" in a SINGLE sentence, what would you say?

_____

_____

_____

4. When you hear the term "writing," what is the FIRST WORD that comes to mind? _____

5. When was the LAST time (most recent time) you…

(PUT A CHECK IN THE COLUMN THAT BEST REPRESENTS YOUR ANSWER)

	Today	Within the past week	Within the past month	More than a month ago	Never
Used the internet to do research for school?					
Did research for school some other way, NOT using the internet?					
Read material for school on a desktop or laptop computer?					
Read material for school on a handheld device like an iPad, e-reader, or cell phone?					
Read material for school in print (hard copy)?					
Used digital technology (email, the internet, cell phones, text messages, etc.) to collaborate with other students on a school assignment?					
Used digital technology to communicate with friends SOCIALLY while in school?					
Used digital technology to kill time or entertain yourself while in school?					

Q6.   On a scale of 1 to 10, how easy or difficult is it to....

Find trustworthy information on the internet for your school assignments
      1   2   3   4   5   6   7   8   9   10
   (very easy)   **(very difficult)**

Figure out how trustworthy different online sources are
      1   2   3   4   5   6   7   8   9   10
   (very easy)   **(very difficult)**

Use a search engine to find good information on the internet
      1   2   3   4   5   6   7   8   9   10
   (very easy)   **(very difficult)**

Figure out the original source of online information
      1   2   3   4   5   6   7   8   9   10
   (very easy)   **(very difficult)**

Sort through online search results to find the best material
      1   2   3   4   5   6   7   8   9   10
   (very easy)   **(very difficult)**

Sort through online content in general to find good material
      1   2   3   4   5   6   7   8   9   10
   (very easy)   **(very difficult)**

Pull together all of the different online information you find into a cohesive project or paper
      1   2   3   4   5   6   7   8   9   10
   (very easy)   **(very difficult)**