New Rules for a New Game

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For a lover of literature, the twenty-first century represents a dream-come-true. Today, through websites such as Gutenberg.org, Bartleby.com, poets.org, Google Books, and countless others, millions of books, stories, and poems are accessible and absolutely free to anyone—24 hours a day, 7 days per week. With devices such as the Kindle and Nook, the latest literary works can be delivered silently and effortlessly in digital format, usually at a cost comparable to the price of a movie ticket. Of course, publications made from paper and cloth are still plentiful, with approximately 290,000 new titles and editions debuting in 2009 in the United States.[1]

Despite the unprecedented accessibility and low cost of books, students are reading literature less and turning to electronic media more.[2] On average, students consume over ten hours of electronic media per day while they read books for only a few minutes.[3] A student experiences multi-tasking as a daily fact-of-life, as attention flits from doing homework to texting friends, watching television, listening to music, and checking updates on social networking sites.[4] Most students do not hate reading, but reading barely registers on the list of priorities.[5] Unsurprisingly, a recent survey of reading found one in three adolescents claimed they would read more if they could read a book on a digital device.[6]

While most teachers would agree that "Ten minutes a day devoted affectionately to good books…will in thirty years make all the difference between a cultivated and an uncultivated man [sic], between a man mentally rich and a man mentally poor," students overwhelmingly prefer to pursue other endeavors.[7] Most adolescents are not eager to engage in activities that are solitary, intellectually-taxing, and silent, though *solo, taxing*, and *silent* have characterized literary study at the secondary level for decades.[8]

Because many adolescents today avoid reading, their experiences with books and the bundle of skills associated with learning through books—construing the definitions of unfamiliar words in context, creating pictures in the mind, making inferences, and predicting outcomes—may not be fully developed.

Over one hundred years ago, William James noted the importance of attention in shaping experience.

> *Millions of items of the outward order are present to my senses which never properly enter into my experience. Why? Because they have no interest for me. My experience is what I agree to attend to. Only those items which I notice shape my mind—without selective interest, experience is an utter chaos.*[9]

Estimates are that adolescents receive more than 3,000 externally-generated messages (texts, emails, ads, commercials, etc…) per day.[10] During her first month using an iPhone, a high school student in Sacramento, California (U.S.A.) sent or received over 300,000 texts in thirty days, an average of 10,000 texts a day, or more than seven messages per minute.[11] Checking Facebook, chatting with friends, downloading videos from the Internet, shopping online, and simply trying to "keep up" with the flood of communiqués requires a significant commitment of time and effort.

Researchers who chart trends in media use (including books) have documented that student interactions with electronic media have increased every year since 1999.[12] The most dramatic increases in student use of media are with computers (230% increase) and video games (180% increase), two areas that are expected to continue to lead the growth over the next decade, especially as handheld devices become smaller, smarter, and ever more powerful.[13] Print is the only medium that has registered a decrease.

Time-Use studies provide additional insight into how adolescents are choosing to spend their leisure time outside of school.[14] Of a student's 6 hours and forty minutes of leisure time per day on a weekend, only a little over 5 minutes is spent reading. Students spend thirty times (30x) more time watching TV; twelve times (12x) more time playing around on the computer—than reading.

Adolescent use of leisure time on weekends and holidays, 2009

Activity	Time spent in minutes	Percentage of time	10 chips
Total leisure time= 400 minutes (6 hours, 40 minutes)			
Watching TV	157.2	39%	4
Socializing, communicating	75.6	19%	2
Sports, exercise, recreation	38.4	10%	1
Computer use for leisure (not school or work related)	61.2	15%	1.5
Relaxing, thinking	6.6	2%	0
Reading	5.4	1%	0
Other	54.6	14%	1.5

The term *psychic energy* has been suggested as a way of measuring directed attention.[15] Say that a typical adolescent has the equivalent of 10 psychic energy chips, which represent the day's possible expenditures of attention (which does not include sleep, eating, and maintenance functions). The average adolescent spends most of his/her chips (4+2+1.5) watching TV, socializing, and using the computer for fun. The remaining few chips are spent on recreation or "other activities." That leaves zero chips for activities that are at least

somewhat related to the development of the intellect—reading and relaxing/thinking. It is also useful to keep in mind that these are averages. Obviously, some students read more than 5 minutes per day; conversely, some students fail to log even 5 minutes.

One of the biggest challenges for teachers in the 21st century is convincing students to spend their psychic energy on activities that are worthy of their time.[16]

Learning and the brain

Neuroscientists confirm that the activities a person chooses to pursue have an effect not only on the development of identity and the self, but also on the physical structure of the brain.[17] The brain is involved in an ongoing process of evolution, a kind of "survival of the fittest" battle at the cellular level.[18] Although the plasticity of the brain is well established, contemporary researchers have begun to pinpoint changes in the brain through sophisticated imaging techniques.[19] Activities that stimulate the intellect build related connections in the brain and make success possible for increasingly challenging tasks. If the intellect is not stimulated, then the parts of the brain associated with rational thought weaken.

In fact, reading helps build the "information highways" over which the brain processes inputs. Using MRI scans to assess the brains of struggling readers, neuroscientists have found that many struggling readers possess "lower structural quality" in certain areas of the brain. In one study, researchers administered a program of 100 hours of intensive "reading therapy" to struggling readers.[20] Subsequent MRI scans revealed that the physical structure of the brain changed in every reader who received the reading therapy. The part of the brain associated with reading had grown thicker. To reiterate, as struggling readers began to read more often and to read more effectively, their brains changed shape to mirror the change in stimulus. The brains of struggling readers became more like the brains of expert readers.

However, just because an activity has beneficial effects does not mean that students will love it.[21] Attitude towards a subject is a critical factor in determining the level of student participation, and talent blooms only after concerted effort.[22] Some recent research indicates that true mastery in a field is only attainable after 10,000 hours or more of practice.[23]

A student who dislikes reading is unlikely to pursue reading as a leisure time activity and, as a result, is more likely to do poorly on assignments that are predicated upon the comprehension of texts (which includes all academic subjects, even math). Without a sufficient investment of time and energy, the act of reading becomes increasingly arduous for the struggling reader. Neuroscientist Michael Posner writes, "While acquiring expertise is easier for some than others the importance of effort in its acquisition is a basic principle. Networks are strengthened through exercise, but maintaining interest that produces sustained attention is key to making exercises successful."[24]

In the twentieth century, a teacher of English might have been able to assign 50 pages from Twain's *Huck*

Finn for homework, but assigning 50 pages of text without providing additional support to students today seems like a recipe for disaster.[25] Twain's extensive use of dialect and slang make comprehension challenging, even for expert readers. Students who obsess about grades might search on the Internet for information on *Huck* or try to find a few film clips on YouTube, but many would not bother with opening the book.[26]

Decoding and understanding a text requires work and the payoff, be it entertainment or knowledge, is far from guaranteed. When a student receives a message on a cell phone, the machine plays a song and the screen flickers. When a student signs into a video game, the machine responds with images, sound, and instantaneous feedback. When a student opens a traditional, cloth-bound book, he/she encounters pages of lines and squiggles (letters and words) that demand immediate attention and the exertion of cognitive processes. Thus, making reading an enjoyable experience is essential to developing competent readers.

StudySync's advanced technology presents the intellectual richness of literature and the aesthetic, *lived-through* experience of books in a multimedia package that invites students to enjoy reading, writing, thinking, and creating.[27] Distinguishing features of StudySync include the following:

- Attractive entry points
- Lessons created with the adolescent brain in mind
- Visual and auditory supports
- Engaging simulations that model critical thinking and textual analysis
- Readily accessible, diverse texts, including classic and contemporary works; fiction and non-fiction
- Curriculum that clearly aligns with Common Core and NCTE standards, but also reaches well beyond them

Attractive entry points

Students who are not successful readers are well aware of the extent to which academic success is built upon reading.[28] Many struggling readers find it difficult to understand words in ways that generate pictures in the mind, so they may refuse to read at all, especially if the purpose of reading is to satisfy a teacher request.[29] For these students, the entry point to reading seems elusive, and they may become quickly disenchanted and "check-out" mentally, even before reading begins.[30]

In contrast, when students log on to Facebook, they are greeted by messages left by friends and acquaintances—"Do you remember me? Did you see what I wrote? What are you doing right now?" When a student reads and responds on Facebook, words are instantly published and become part of an ongoing, online dialogue, open to an audience of the world or a small circle of friends.

The entry point into Facebook is effortless and the content may be less than intellectual, but students cannot get enough of it.[31] A Facebook-addicted teen, interviewed about his use of the site, said, "Facebook

is amazing because it feels like you're doing something and you're not doing anything. It's the absence of doing something, but you feel gratified, anyway."[32]

StudySync uses an attractive entry point, like Facebook, but eases students into activities that involve reading, writing, and thinking rather than conversations about "favorites." To introduce each text, StudySync offers a brief preview of the selection, much like a "coming attraction" for a new movie, and provides images and sounds with the text. Entry to reading is painless and enjoyable. The idea is to immerse students in a text before they even realize that they have started reading.

Lessons created with the adolescent brain in mind

Parts of the brain associated with motor skills and sensory integration develop relatively early in adolescence, while areas of the brain associated with planning and decision making continue to develop well into the twenties.[33] For adolescents who might not have fully realized organizational skills (some 50-year-olds also may fit this category), StudySync's built-in tracking software helps chart student progress while automatically keeping up with assignments and due dates.

The program is designed to involve students in anxiety-free, achievable, step-by-step tasks that build toward complexity over time. Images lead to reading, reading merges into writing, and writing promulgates more thinking and deeper reading. Adolescents' natural predilection for "novel objects or social stimuli" is assumed.[34] The stimulus and format change often, and assignments are channeled through social media. StudySync's "Blast," in essence, a continually-updated social network, highlights breaking news and hot-button issues that are suitable for discussion, writing, and extended projects. Students receive text updates on new articles as well as the latest, greatest peer comments as they are posted.

The StudySync platform is an immersive experience. As students are eased into a text, they are surrounded on all sides by multisensory supports. The videos used in StudySync (such as SyncTV) are created in increments of five to eight minutes, which fit with the optimal attention spans of most students, according to neuroscientists.[35]

Visual and auditory supports

With a power and complexity that would surpass the newest, fastest supercomputer, "visual intelligence" takes up almost half of the brain's cortex.[36] The region of the brain associated with vision intertwines with areas of the brain associated with the limbic system, so an emotional response often accompanies the viewing of an image. Most students prefer visual to auditory or tactile stimuli and learn more when visual stimuli are used in instruction.[37] A good rule of thumb for a teacher is "the more visuals...the better."[38]

An exhaustive report on teaching reading in the United Kingdom found that multisensory stimuli were keys

to student success. "The best teaching…was at a brisk pace, fired children's interest, often by engaging them in multi-sensory activities, drew upon a mix of stimulating resources, and made sure that they received praise for effort and achievement."[39] Research on students with a variety of learning disabilities supports the use of images and other sensory aids in helping students to understand letters and words.[40] Perhaps it is unsurprising that visual and auditory instructional strategies have proven effective in teaching English Language Learners (ELLs) as well.[41] As Teele has noted, "Good literacy instruction for English Language Learners looks very much like good literacy instruction for students in general."[42]

About the importance of sensory inputs in learning, film producer/director George Lucas commented, "Today we work with the written or spoken word as the primary form of communication. But we also need to understand the importance of graphics, music, and cinema, which are just as powerful and in some ways more deeply intertwined with young people's culture."[43] Additional support for the use of visual stimuli to enhance reading comprehension may be found in any of the 119 chapters of the *Handbook On Teaching Literacy Through The Communicative And Visual Arts Volumes I And II* published by the International Reading Association.[44]

Engaging simulations that model critical thinking and textual analysis

Recent analyses of classroom discussions have found that students are engaging in few in-depth conversations about reading during the school day.[45] Indeed, the liveliest discussions in the best classrooms were found to be superficial and fleeting—lasting, on average, less than a minute.[46] Students today may not know how to participate in a good discussion because they have seldom participated in one.

Simulations have become popular in many fields, though they have yet to gain much of a following in the K-12 classroom. Soldiers preparing for the exigencies of battle in a foreign land participate in "war games" in locations in their own country that possess land features and weather similar to where they will be sent.[47] Doctors trying out new surgical procedures practice on cadavers, experimental dummies, and virtual patients.[48] Physicists experimenting with particle acceleration try out several possible scenarios through computer simulation before actualizing the experiment in the real world.[49] Simulations may be particularly effective for struggling readers because they encourage learning through observation and reflection in low-risk environments. Students can observe and try out strategies without worrying about peer approval or "being wrong."

One of the delights of StudySync is that reading selections are accompanied by videos of smart, sometimes rakish college students discussing the nuances of theme, technique, and meaning. These simulations, called SyncTV, show in fine detail the give-and-take, stop-and-start, evidence-based deep reading that are the hallmarks of a good discussion.

Readily accessible, diverse selection of texts, including classic and contemporary works; fiction and non-fiction

One of the difficulties of teaching English is keeping up with the reading. While 290,000 new books and editions are published every year, thousands of other electronic publications are coming online every day—websites, blogs, wikis, archives. Of course, there are also the latest newspapers, magazines, and professional journals to consider, as well.

The number of books on the list of "essential reading" seems endless.[50] Literary critic Harold Bloom's recommendations, presented in the appendices of *The Western Canon*, numbers over 800 volumes.[51] At the rate of reading one book per week, it would take 16 years of intense reading for an English teacher to get to the bottom of Dr. Bloom's list. Unfortunately, it is impossible for an English teacher to read everything.

Some teachers might not have read many nineteenth century British novels; some might not enjoy modern poetry. Yet, both the Common Core and NCTE standards advocate that students read print and non-print literature of diverse genre and variable complexity, including classic and contemporary works. The goal is to "broaden perspectives" (Common Core) with a "wide range of texts and self-reflection" (NCTE).

Many of the authors cited in the Common Core standards are included in the StudySync library. For example, a lesson in StudySync involving the first chapter of *The Adventure of Huckleberry Finn* prompts students to analyze specific details in the text to demonstrate the ways that Mark Twain conveys Huck's character. The works of Robert Frost, Maya Angelou, George Orwell, Arthur Miller, Charlotte Brontë, Anton Chekhov, Abraham Lincoln, and others are featured in the StudySync digital library.

Curriculum that clearly aligns with Common Core and NCTE standards, but also reaches well beyond them

Although the Common Core Standards have yet to become the official national curriculum, efforts are already underway to build national high school board examinations based upon Common Core expected outcomes. [52] Undeniably, Common Core standards in English have remarkable similarities to NCTE/IRA standards.[53]

NCTE Standards 1 and 2 and *Common Core Reading Standards 7 and 10*, for example, promote an expansive reading base—digital texts, eBooks, magazines, online news, videos, blogs, web shows, online advertising, podcasts, and videocasts. Both standards emphasize using informational texts in a range of subjects to address complex problems in logical, systematic ways. The NCTE standard notes, "It is not enough to read a variety of works [but] students also need to discover the connections among them" (Standard 1). Similarly, *Common Core Reading Standard 9* requires that students compare the themes of two or more texts.

The "Blast" section of StudySync, which highlights controversial, breaking developments from around the

world, helps address Common Core and NCTE standards related to contemporary texts and research. The "Blast" is composed of several interactive components designed to help students gather more information and construct informed opinions. A precis provides relevant background information and a hyperlink called "Research Links" offers instant access to Wikipedia, Business Insider Online, and other websites. Sometimes, the "Blast" asks students to take a poll, fill-out a questionnaire, or share an opinion. Responses get updated immediately and segue into online conversations, more dialogue, and deeper research. "Blasts" relate to "student's interests...role in society and the workplace" (*NCTE Standard 1*) and require the synthesis of myriad sources of information (*NCTE Standard 8*).

The *Common Core Reading Standards 4, 5, and 6* require students to consider word choice in literary works as well as in their own writing, revising, and discussion. Both sets of standards advocate for a staircase approach to reading, with students building towards more difficult texts and more complex writing assignments over time. Vocabulary naturally grows in complexity in concert with the increasing difficulty level of readings. *NCTE Standard 9,* for example, suggests that students study dialects, patterns, and word choice in such a way that prepares them for progressively more challenging texts. Both sets of standards emphasize language growth through listening and discussion as well as reading.

Common Core Writing Standards 1, 2, and 3 emphasize argumentation, logical arguments, evidence-gathering, and documentation. *Narrative and Expository Writing* assignments are expected but *Research and Argumentation* modes of writing (*Common Core Standards 7, 8, and 9*; *NCTE Standard 7*) are emphasized. Students must conduct research through evaluation, interpretation, and synthesis and to present results in essays, posters, speeches, and multimedia presentations.

Common Core Writing Standards 4, 5, and 6 address the *Production and Distribution of Writing*, which holds similarities to *NCTE Standards 4 and 5*, which focus on students' ability to adjust the use of spoke, written, and visual language to communicate effectively to different audiences for a variety of purposes. Implicit throughout both Common Core and NCTE standards is the archetype of teacher as intellectual leader, eager to discover new ways of utilizing emerging technologies to help students address difficulties and maximize learning.

Conclusion

In 1900, relatively few adolescents graduated from high school, the school year was brief, and a teacher was any kind soul willing to take a high-stress job for a low wage.[54] Despite recent vituperative criticism, the progress of public education over the past hundred years has been remarkable. Increasingly, the expectation is for high school students to enroll in and graduate from college.[55]

Such a goal assumes that the "bottom 75%" of students, those who traditionally have chosen not to go to college, must make unprecedented progress over the next few years. After all, many of these students are struggling readers who may lack the academic skills necessary for post-secondary study.

Similarly, the brightest students, whom experts characterize as perennially underperforming, have ample room for growth, especially in the areas of application, creativity, and innovation.[56] The National Assessment of Educational Progress, which has administered criterion-referenced tests in literacy since 1971, reports that only one to two-percent (1-2%) of American adolescents are able to read and write at the highest, "advanced" level every year.[57] Instruction-as-usual seems unlikely to engender the kind of radical transformation that is needed.

The truth is that talent abounds among adolescents, but the school curriculum, as it currently exists, does not have much leeway for the development of talent. Indeed, "Many talented people end up in low-paying, dead-end jobs because their areas of strength were never developed."[58] Thus, while most adolescents are capable of reading and writing at an advanced level, very few actually do.

New instructional approaches that focus on higher levels of student engagement, personalized instruction, and real-life, real-time experiences are essential if higher academic goals are to be realized. StudySync is just the kind of "robust and relevant to the real world" tool that will help students make the transition to "success in college and careers." [59]

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