Guiding Students as they Explore, Build, and Connect Online

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We have opened the draft to the public for commenting.

Comments will be used to revise the draft before publication.

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Abstract

The World Wide Web has become this generation's defining technology for literacy. This technology facilitates access to an unlimited amount of online information in a participatory learning space. Multiple theories and years of research have investigated the literacy practices in these online and hybrid spaces. Yet, as early adopters, history's first generation of "always connected" individuals do not have the knowledge and skills to critically explore, build, and connect online. Simply stated, students are often not provided with opportunities in school to practice the web literacies necessary to read, write, and participate on the web. The Mozilla Foundation and community of volunteers have worked to address this paradox by creating a Web Literacy Map. These efforts seek not to simply understand the web but to empower adolescents to help build a better open web.

Guiding Students as they Explore, Build, and Connect

Garth Corbett is an adolescent male who some would say leads dual lives. By day, he's a regular student who earns decent grades, but often feels disenfranchised in school. Yet outside of school, Garth created and maintains his thriving YouTube channel (https://www.youtube.com/user/garmar2000/) where his interests, opinions, and creations come to life. His teachers did not see the value Garth found in exploring, building, and connecting online. For Garth, these connections formulate how he prefers to teach, learn, and socialize. He also indicated that he did not find value in the reading and writing activities teachers assigned. Online Garth is a leader, where friends sought him out to help them create and share their own content. In school he was often dismissed for his creative mind.

Garth began bringing his expertise to unconferences and EdCamps. While presenting Garth stated, "I make things on the Internet. It is what I do." He explained he learned how to do this on the web. Lurking on discussion boards; reviewing hours of video and print tutorials; Garth also watches others gamers play on Twitch, a service that streams live play. "I just figure out what I need to learn and then I go learn it," he commented.

When asked why he spends so much time learning, and then sharing for free, Garth indicated he "wanted to help others". He was also asked how teachers could bring this into classrooms; how do teachers deal with students who learn openly on the web? Garth thought quizzically about this and responded, "Let us play, but guide us."

Introducing the Web Literacy Map

Over the past two years, the Mozilla Foundation - the global non-profit best known for the Firefox web browser - has led an initiative to define the skills and competencies required to

read, write and participate on the web. Working as a group of stakeholders from formal and informal education, and industry, the community at large has developed a 'Web Literacy Map' (Belshaw et al., 2013).

Many frameworks, such as digital literacy, media literacy and information literacy have considered the skills required for the web. However, these frameworks have attempted to make sense of the web using previous metaphors, rather than understanding the explicit affordances of the web as a networked medium. This is where we diverge, or, to use software development terminology, 'fork.' The Web Literacy Map attempts not to merely understand, but to *build* a better web.

In addition, prior work in other areas did not always allow for the multiple perspectives (Labbo & Reinking, 1999) inherent in the Web Literacy Map. In fact, the Web Literacy Map is currently localized into 22 languages, meaning the community has had to debate issues relating to the art of translation. For example, feedback from an Argentinian educator around cultural implications of the literal translation of 'competence' led the community to question the inclusion of this term in English.

The purpose of the Web Literacy Map is to provide *descriptive*, as opposed to *prescriptive* guidance for educators (Belshaw et al., 2013). The goal is to encourage mentors to align their materials regardless of theory, perspectives, goals, or geography. It focuses on Frank (2001) and Bigum's (2002) notion of 'the internet *as* literacy'. This is to be contrasted with other approaches such as the internet *for* literacy, literacy *for* the internet, or literacy *on* the internet. This makes the work both practical and theoretical while creating a series of crowd sourced learning pathways.

The Web Literacy Map currently stands at version 1.1. The community of volunteers, teachers, and industry leaders continue to define and sustain the Map construction and development in the open. In fact, work of the next version has begun and the community will continue to openly iterate on the map. These revisions will be conducted transparently - every decision documented, and all meetings open regardless of geography. In fact everyone is invited to join Mozilla's #teachtheweb community to help shape, teach, and make current and future versions of the Web Literacy Map. For more information, search for #teachtheweb on Twitter, or visit the following webpage (https://wiki.mozilla.org/Webmaker/WebLiteracyMap).

Understanding the Web Literacy Map

The Web Literacy Map, while presented in grid form with three strands (e.g., Exploring, Building, and Connecting), recognizes literacy as a culturally defined social act. You cannot learn web literacy by separating the competencies contained in these strands from the act of doing (Ito et al., 2013). The three strands of the web literacy map are intertwined.

The core belief uniting the community is that exploring, building, and connecting online can never be taught in isolation. Each strand, such as exploring, contains five competencies. A set of skills is nested under each competency. Although presented separately to aid understanding, each competency overlaps with another. This thinking is embedded into the general idea of the map metaphor. Individuals plot their own learning pathway, but use the map as a guide. To view teaching and learning resources, please visit the following website (https://webmaker.org/en-US/resources).

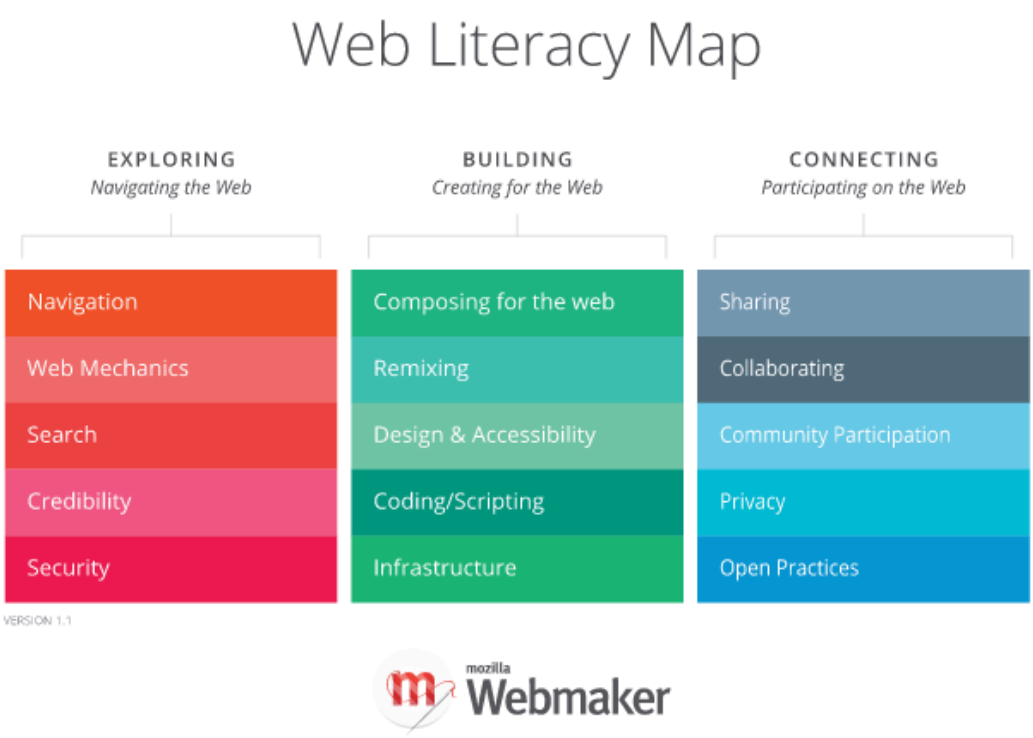

Figure 1. Version 1.1 of the Mozilla Web Literacy Map.

Exploring. The Web Literacy Map, v 1.1, operationalized reading as "Exploring," and this was defined as "navigating the web." Recasting the reader as a navigator has important implications. It involves so much more than the traditional comprehension (Duke & Pearson, 2002; Leu, O'Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009). To differentiate between "reading" and "reading the web" we focused on specific competencies for making meaning online that are above and beyond (McVerry, 2014) the reading recognized in classroom's like Garth's.

Competencies under exploring include reading the web and the use of web tools for navigation. This requires an understanding of web mechanics. Good online readers can also search for and locate people, resources and information. They then know how to judge the

credibility of these sources. Finally, exploring the web requires an understanding of security in order to keep content, identity, and systems safe.

Building. The Web Literacy Map operationalized writing as "building" because on the web you create content to make meaning. New genres that blend texts and tools have emerged on the open web (Livingstone, 2004; O'Byrne, 2013). New modalities have risen in prominence (Kalantzis & Cope, 2000; Rowsell & Walsh, 2011) and the code that powers the web has emerged as a new genre for writing and communication (Alexander & Levine, 2008).

The competencies of the building strand reflect this emphasis on making. Learning, especially building the web, involves constructing new content. We refer to this writing as "making" and the products as "makes". This philosophy is reflected in the competencies because we are all makers. We pick up tools while composing text through creating and curating content. Furthermore remixing and modifying content drives the open web. Seasoned webmakers learn to design accessible online spaces, code websites, script programs, and support the open web infrastructure.

Connecting. In Version 1.1 of the Web Literacy Map, participating on the open web was operationalized as "connecting." Communities build and sustain the web (Hildreth & Kimble, 2004; Gray, 2004). Jon Udell (2002) defined the "web as a loose federation of documents --- many small pieces loosely joined." Yet in this age of silos, where corporations control the content we make, and the post-Snowden era of the web, when we are weary of government snooping, (Belshaw, 2014) we must work together to protect the open web.

Thus, the competencies under the connecting strand encompass the values of not only participating in, but also protecting the open web. Sharing is essential to creating the many small

pieces of the web (Alexander, 2006). This requires collaborating as both a mentor and an apprentice while sharing and creating resources in different spaces (Jenkins, 2009). Participating in these spaces, by becoming more involved in their specific practices, is essential to connecting (Wenger, McDermott, & Snyder, 2002). Put simply, we have to work together to protect the web by focusing on practices of privacy and openness.

Benefits of the Web Literacy Map

Busy educators require relevant, trusted resources to adapt to particular contexts. The Web Literacy Map provides a sense-check as well as a global platform upon which to build learning pathways. This allows educators to move beyond everyday experience of siloed practice and provides a common language across time and space. It is an open-source project, meaning that it can be sustained and forked without the permission of the owner. In practice, this provides reassurance to educators: so long as enough people are contributing to the project, it does not require any *one* organization or person to be sustainable.

Using the Web Literacy Map

To use the web literacy map means to remix the map into your local contexts. The ORMS model, for example, blends the competencies of the Web Literacy Map with the research and media skills required in the Common Core Standards (McVerry, 2013; O'Byrne & McVerry, in press). As indicated earlier, the web literacy map is intended to be *descriptive* as opposed to *prescriptive*. The ORMS model is built to provide *prescriptive* guidance for educators trying to bring the web literacy map into their classroom. It is built on three cornerstones that align with Version 1.1 of the Web Literacy Map.

- Online Collaborative Inquiry - A group of local or global learners who arrive at a common outcome via multiple pathways of knowledge. This cornerstone closely aligns with the Connecting strand of the Web Literacy Map.
- Online Content Construction - A process by which students construct and redesign knowledge by actively encoding and decoding meaning through the use of ever shifting multimodal tools. This cornerstone closely aligns with the Building strand of the Web Literacy Map.
- Online Reading Comprehension - The skills, strategies, practices, and dispositions students need to locate, evaluate, and synthesize information during problem based inquiry tasks. This cornerstone closely aligns with the Exploring strand of the Web Literacy Map.

Conclusion

The work that is being conducted in developing the Web Literacy Map are of paramount importance. Students need to be *web literate* in the future. Not simply as a literacy, but also a fundamental human right. Students like Garth already know they need these skills, they just need our guidance and support. We need to provide opportunities for individuals like Garth to develop these literacies in the classroom. Educators and students need the latitude to play, experiment, fail, and have fun as they learn these web literacies. As students like Garth enter and graduate from our classrooms, we do not fully understand the technologies and literacies the future warrants. Yet we believe a thoughtful, highly-trained educator might hold the key to making these web literacies become a reality.

What if you want to get involved? The Web Literacy Map builds on the principles that all learning, especially literacy is social (Au, 1998). Anyone can become a webmaker, and over the next year exciting features will emerge to support new users. We encourage you to become a mentor in the community. Use the competencies to plan learning activities that integrate web literacies. Reflect on this work in your own online spaces by blogging about it. Include the #teachtheweb hashtag in your posts across social media. Check out the community as we update version one of the Map. Join the community calls. We ultimately get the web we build and with your help this web will be open and free.

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