

Building Students' Literate Agency Through Makerspace Activities in a Two-Year College

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Abstract

This article discusses how a makerspace-based assignment can cultivate the literate agency of students in English writing classrooms in a two-year college. The maker movement in education has been predominantly studied in business, science, and engineering fields and in four-year colleges. Networking translingual writing pedagogies and the maker movement, I devised a makerspace-based writing assignment as a scaffolding project to support students' analyses of their digital writing practices. I argue that this assignment, which emphasizes material processes of writing through "making" activities, can benefit two-year college students and offer links to social justice in multiple ways: it can promote students' access to the emerging trend of the maker movement and DIY fabrication culture; it encourages students from linguistically, culturally, and racially diverse backgrounds to better articulate their ideas by employing multilingual and multimodal resources; and it can help them build their literate agency and transfer the maker mindset to other rhetorical environments.

The Maker Movement in a Two-Year College Context

Scholars and teachers in higher education have advocated for "making" or "making practices" as an emerging pedagogy in literacy education, rhetoric and composition, and technical and professional communication classrooms (Koupf, 2017; Tham, 2021). Making, often broadly defined as "a process of creating something" (Hsu et al., 2017, p. 589), learning through technology (Dougherty, 2012), or a material activity of problem-solving (Tham, 2021), has not only been studied in STEM fields but also incorporated into writing and literacy classrooms. The 2005 start of that "maker movement" is often attributed to Dale Dougherty, founder of the *Make*: magazine in 2005 and "Maker Faire" in 2006; the movement includes any creating activities and embraces any makers who tinker with objects and materials that can lead to a solution to a problem. Thus, this approach has often been described as democratic, as it includes a wide range of people who approach technology to solve a problem, including underrepresented students and non-academic communities.

In this sense, the term "maker" is differentiated from the term "inventor" because it suggests that anyone who can tinker with things out of a "sense of necessity" as "cooks preparing food for our families, as gardeners, as knitters" (Dougherty, 2012, p. 11) provides "a positive cultural connotation" and promotes "many kinds of content production such as DIY (do-it-yourself) and crafting" (Breux, 2017, p. 28). Furthermore, it emphasizes collaborative processes often observed in maker culture and uses open-source-based processes such as sharing "open-source hardware" and "digital fabrication designs" (Gershenfeld, 2012, p. 55). Thus, "the real strength of a fab lab [makerspace] is not technical; it is social" (Gershenfeld, 2012, p. 57). Similarly, Erica Halverson and Kimberly Sheridan (2014) described those who have maker mindsets as "people who are engaged in the creative production of artifacts in their daily lives and who find physical and digital forums to share their processes and products with others" (p. 496). While

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emphasizing this collaborative aspect of the maker movement, scholars have also stated that the maker movement and making activities can cultivate creativity as reflected in the term “tinkering” that refers to material repurposing processes leading to both practical solutions and imaginative experiments (Koupf, 2017). As shown in these definitions, scholars have often pointed out that maker mindsets are multidisciplinary, collaboration-inducing, democratizing, and creativity-oriented.

At the pedagogical level, educators and researchers have examined how the maker movement has had transformative impacts on students, particularly students from minoritized groups, and how the maker movement has addressed the digital divide. Recently, educators have noted that makerspaces benefit students’ learning in K-12 classrooms and higher education institutions by empowering students who have been underrepresented in STEM fields and by bridging the gap in accessing new technologies (Barton et al., 2017; Halverson & Sheridan, 2014; Hsu et al., 2017). For example, Barton et al. (2017) demonstrated how makerspaces have offered access to STEM education and “more equitable opportunities” (p. 28) for young African Americans and Latinos from marginalized backgrounds in makerspaces in which white, male adult-centered discourses have been dominant (p. 5). By integrating social justice paradigms into students’ makerspace-based learning, their study foregrounds those who “remain[ed] silent in these making worlds” (p. 7). Marijela Melo (2020) also problematized the “persistent underrepresentation of diverse communities within makerspaces” (p. 59) and highlighted the material agency of students in first-year writing classrooms where makerspace activities can change power structures between teachers and students and promote “embodied, holistic learning” (Melo, 2016, para. 6). Echoing these social justice paradigms in the maker movement, I invited my students in first-year writing courses at Houston Community College to do on-campus making activities and analyze their makerspace experiences in the context of their diverse literacies across languages and modalities. In a one- or two-page paper, entitled the Makerspace Paper, students completed reflective writing on their making activities, and this brief writing was synthesized with their literacy analysis assignment.

Although the maker movement in two-year colleges has the potential to promote social justice by providing diverse student populations with access to tools, technologies, ethos, and a maker mindset, little research has discussed makerspaces in the lives of two-year college students. In their *Makerspace Impact* report, the California Community College (CCC) Maker Initiative (2019) illustrated how 24 community college makerspaces have focused on serving students and meeting their “career needs” (p. 3). This report emphasized much needed discussions of the maker movement across two-year colleges. However, by emphasizing the movement’s potential to be connected to the job market and entrepreneurial opportunities, this experiment was limited to regarding students as “clients” for whom institutions need to “provide skills, experiences, and connections to prepare them for entrepreneurship and innovative careers” (p. 3). While this initiative democratizes makerspace discourses beyond four-year colleges and shows the direct impacts on the lives of two-year college students, the maker movement in the community college context has been understudied. As Patrick Sullivan (2015) aptly explained the two-year college teacher’s responsibilities, “a purely vocational focus impoverishes and diminishes our mission and our work” (p. 343).

Literate Agency and Makerspaces

Taking up Sullivan’s call for attention to the two-year college teacher’s responsibilities and practicing these responsibilities through the emerging trend of the maker movement, I propose that making should align with students’ sociocultural and material agency. I describe this sociocultural and material agency as “literate agency,” in which students can assemble their

linguistic, cultural, and material resources across different contexts. The agency of students and their diverse resources across languages, contexts, and modalities have been theorized by many scholars. For instance, Bronwyn T. Williams (2017) demonstrated that literate agency is not a metrical ability to engage in literate activities but is dispositions in which rhetors and language users perceive their agency in interpreting rhetorical situations and adapting their prior skills, knowledge, and experiences. According to Williams (2017), literate agency can be defined as “the perception of agency, not just whether a person is able to read and write in terms of measurable skills, but whether she or he *perceives* agency and *feels* able to read and write in a given context, is crucial in how people respond to such situations” (Williams, 2017, p. 3). As shown in this definition, it is important to cultivate students’ awareness of their literacies through sociocultural and material approaches to language and writing, in which “digital literacies, indeed all literacies, exist and develop within the context of complex and interrelated local and global ecologies” (Hawisher et al., 2006, p. 627).

To be conscious of this literate agency is even more important for students in first-year writing courses and developmental writing courses in a community college, who often cross linguistic and cultural borders as daily practices and need to deal with textual mobilities and language differences across diverse modalities (Blommaert, 2010; Canagarajah, 2013; Fraiberg, 2010; Guerra, 2015; Horner et al., 2011). To conceptualize these mobile literate activities, Canagarajah used the term “translingual literacy,” defined as “an understanding of the production, circulation, and reception of texts that are always mobile; that draw from diverse languages, symbol systems, and modalities of communication; and that involve inter-community negotiations” (Canagarajah, 2013, p. 41). Responding to calls for pedagogical implementations of translingual literacy, Canagarajah (2013) has enacted translingual practices in his class on teaching second-language writing for advanced students by using the genre of literacy autobiography (p. 47). Such pedagogical methods based on translingual approaches further urge teachers and researchers to create multidimensional engagements that enable students in more diverse contexts such as first-year writing courses and developmental writing courses to experience the materiality, creativity, and performativity of meaning-making processes. Networking translingual literacy scholarship and the emerging maker movement, I designed on-campus makerspace workshops and making activities in the digital literacy analysis assignment as an extended enactment that can help students experience meaning-making processes through their diverse semiotic resources.

This scaffolding assignment, entitled “Makerspace Paper,” is a part of the major writing project module centered on analyzing digital literacy in a first-year writing course. This digital literacy analysis module guided students to document their digital writing practices, engage in on-campus makerspace workshops, and reflect on their making activities to contextualize the social and cultural meanings of those activities in their daily academic and professional environments. Incorporating the Makerspace Paper assignment demonstrates how making activities can help writing instructors and students in first-year writing courses meet the core curriculum objectives (CCOs), particularly the goals of critical thinking and communication. Our CCOs articulate critical thinking and communication as abilities through which students synthesize information, develop inquiry-driven writing projects, and develop effective strategies of understanding and expressing ideas across modalities including written, oral, and visual communication. Drawing from sociocultural approaches to literacy practices (Gee, 1996; Prior, 2006; Street, 2003) and material approaches to writing pedagogies through making practices (Breux, 2017; Melo, 2016; Melo, 2020), I revised my previous writing assignment (a digital literacy analysis project) to emphasize makerspace-based activities. Through this revision, I aimed to engage students in composing with multiple modalities by 1) exploring their digital

writing activities; 2) participating in doing makerspace workshops and making their makerspace objects; 3) conducting an interview with a peer student to compare their makerspace experiences with others' experiences; and 4) situating makerspace activities in their own literate landscapes. Students worked on multiple writing components, such as observation-based writings about their digital activities, a reflection paper on their makerspace activities, and an interview excerpt based on listening to others' making experiences and digital literacies, which culminated in an analysis paper that highlighted both digital writing and digital fabrication (or making).

Throughout this module, students observed their literate activities through translingual and multidimensional approaches and reflected on the social and material environments that constituted their literate landscapes. In their writing, students were also encouraged to use languages other than English for rhetorical purposes. This revised writing assignment benefits two-year college students and offers links to social justice by promoting students' access to the emerging trends of the maker movement and DIY fabrication culture. It encourages students from linguistically, culturally, and racially diverse backgrounds to better express their ideas by employing their multilingual and multimodal resources. The connection between students' diverse resources and making activities can help them build their literate agency and transfer the maker mindset to other rhetorical environments such as discipline-specific writing contexts.

Assignment Description and Institutional Context

Houston Community College is an open-admission institution that serves diverse student populations in terms of race, ethnicity, class, language, ability, and age. The Hispanic population makes up about 37% of the entire student body, while African American students make up 31%, white students 14%, and Asian students about 14% (Houston Community College, n.d.-a, p. 19). Also, this institution is known to serve the highest number of international student population (Houston Community College, n.d.-a, p. 13) among two-year institutions. Although data on race, ethnicity, language, or other demographic information of the students enrolled in Composition I courses I taught was not collected, students in the four Composition I course sections self-reported through their writing that they came from diverse backgrounds in terms of race, ethnicity, class, ability, language, and age. Out of about 95 students in Composition I that I taught during the fall semester of 2019 at Houston Community College, 22 students were enrolled in the co-linked English for speakers of other languages (ESOL) course and the Composition I course in the same semester.¹

For the second major writing project in this course, students engaged in a digital literacy analysis module aligned with the scaffolding Makerspace Paper assignment. For the Makerspace Paper, students were encouraged to extend their literate landscapes into ones that were tangible and material across languages and modalities. Students started this Analysis on the Digital Literacy module by reading and discussing Danielle DeVoss et al.'s (2011) article "The Future of Literacy." In these discussions, students compared their own digital literacy to the four case studies in DeVoss et al.'s article. As part of the components of this module, students participated in doing makerspace activities and writing a Makerspace Paper in which they were guided to combine their responses to scholarly conversations on digital literacies and experiential making activities through new technologies. While doing makerspace activities, students learned software skills and navigated tool manuals (including 3D printers, vinyl cutters, and laser cutters) under the guidance of the directors and technicians of the on-campus makerspace.² Students signed up for one of three workshops to use 3D printers, vinyl cutters, or laser cutters, respectively. At the end of these 80-minute workshops, students were encouraged to fabricate a 3D logo, a wooden or plastic name badge, or a self-designed T-shirt. By reviewing this on-campus makerspace's mission statement that focuses on the ideation and creation processes of things

and then completing safety rule quizzes, students obtained a physical badge to become members of this facility. This procedure helped students start to shape the maker mindset and understand that this makerspace is for collaborations and DIY processes. The makerspace mission statement states that this space is for “providing a place to explore, imagine, and create combining a design thinking process with emerging technologies such as 3D printers, laser cutters, and CNC machines alongside traditional technologies to take ideas from concept to launch” (Houston Community College, n.d.-b). At the end of the workshop, students completed the Makerspace Paper assignment and connected their hands-on experience of the makerspace workshop with their reading of “The Future of Literacy.” Students then conducted a peer interview with a partner who explored other tools in a different workshop. For example, a student who worked in a 3D printer workshop was matched with a student who tinkered with other tools in the vinyl cutter or laser cutter workshop. Comparing their own experience to those of their peers, students reflected on rapidly growing digital fabrication trends. The Makerspace Paper and peer interview assignments culminated in a 5-6 page major writing assignment titled Digital Literacy Analysis.

The process of the three workshops consisted of the makerspace director’s overview lectures of tools, students’ using tools to fabricate designs, and the lead technician’s rubric-based assessments. After a 20-minute lecture, student groups navigated the fabrication process with the technician who oversaw the workshop. I shared an observation template and guidelines with students for them to document the procedures of their workshop activities and simultaneously describe their feelings and thoughts. While assisting with the three small groups, I often noticed that students helped each other.

To situate these making activities in the writing classroom, I was particularly helped by Gershenfeld’s (2012) understanding of digital fabrication. He described digital fabrication, composed of “computer-controlled fabrication processes” (p. 44) including 3D printing, as a “new digital revolution” (p. 43) in that *anyone* can make anything beyond traditional manufacturing (p. 44). Although making includes other mundane and nonelectronic activities beyond digital fabrication, my aim for this assignment focused on connecting makerspace activities to students’ diverse literate resources, which are often fluid across digital environments yet have been underrepresented in classrooms. I intended to integrate the sociocultural and material aspects of digital fabrication grounded in the maker movement to introductory writing classrooms with diverse student populations in institutions beyond STEM fields or four-year colleges.

Ima: A Case Study

Some of the workshop attendees, particularly local students who finished their high school in the Greater Houston area, indicated that they were already familiar with the 3D printer. However, groups of students, particularly international students co-enrolled in the paired ESOL class, reported that they had few experiences in handling these types of tools and were less familiar with the notion of a makerspace. Overall, most students responded to this assignment in creative ways. Although students used already prepared materials provided by makerspace technicians to facilitate the fabrication process, some student makers showed a wide range of different products by using their multilingual and multimodal resources. In these activities, students seemed to prototype visual components, such as typefaces, colors, and size, and different linguistic resources to express their identities.

To further investigate students’ perceptions, I designed teacher-research interviews and had an extended interview with Ima (pseudonym)³ after the semester ended. Ima shared extensive ideas and stories about how she designed her makerspace artifact.⁴ At the time of the interview, Ima had finished her high school in Tanzania one year ago and pursued studying

STEM fields after completing core curriculums in this institution. Although her maker product was a T-shirt based on pre-structured workshop plans, her Makerspace Paper shows a rhetorical understanding of connections between this assignment and the linguistic, cultural, and material resources she could leverage in her other courses and future workplaces. In her Makerspace Paper, Ima wrote, “In their report case study, DeVoss [et al.] stated that for someone to make media literacy interesting, it depends on how a person interacts with the designs and his or her knowledge and ideas. There is no limitation on how to show ideas.” Her understanding of material affordances (e.g., “it depends on how a person interacts with the designs”; “There is no limitation on how to show ideas”) mirrors her emphasis on the importance of literate agency in expressing one’s ideas. More specifically, she took into account the potential to use materials and objects, including vinyl, cloth, or a wooden or acrylic plate, to articulate her ideas and use them as effective rhetorical devices. In her Makerspace Paper, she also stated, “through vinyl cutting knowledge [my peer interviewee] can make T-shirts of her own and she can use her designing skills to create something lovely which can attract people’s attention. . . . I’m proud that I know that I can physically generate whatever idea that comes in my mind using plastic.” In her interview, she further shared her plan to acquire more experience in handling other tools beyond 3D printing and vinyl cutting in the on-campus makerspace and apply this knowledge to her other courses including biology to explain her discipline-specific notions.

The Makerspace Paper assignment seemed to strengthen Ima’s inclination toward the maker mindset. While other students followed a demonstration provided by the lead technician and placed their names or other texts on T-shirts, she overlaid a giraffe image with a written word “TANZANIA.” Ima explained that this creativity provoked the idea of a giraffe in her makerspace activity because in Tanzania giraffes became an important symbol (see Figure 1). She thought that it would be meaningful to include an image of Tanzania instead of her name. Her interview illustrated that this idea was also based on her embodied experiences: “Back at home, I passed through a national park whenever I went to school. On the way to school, we saw different animals. I remember I used to see giraffes, and the giraffe is on our money.” After having an interview with Ima, I realized that she employed a giraffe image not simply as a typical icon of her original place. Rather, her T-shirt showed her ongoing “sedimentation” process, that is, the repetitions and recontextualizations of everyday language practices over time (Lu & Horner, 2013, p. 589). Her interview excerpts and reflections on makerspace activities suggest that her makerspace artifact can be seen as recontextualizing her sense of belonging. The T-shirt and the paper represent texts and images in a new academic environment.

Such maker mindsets and recontextualizing practices shown in Ima’s artifact and interview suggest that material affordances extended by making activities seemed to enrich Ima’s literacy repertoires. In her interview, her new literate world in the United States was often contrasted with her previous school life in Tanzania. She described how much her prior literate landscape was constrained by sociocultural forces and power dynamics. Ima explained that she was not allowed to express her ideas in Swahili and was required to use only English in Tanzania. In her interview, she stated that if students used Swahili at school they were penalized according to school policies. After finishing the Makerspace Paper assignment and other translingual pedagogy-based activities, Ima said that she came to value all her languages, including English, Swahili, and Pogoro (her tribal language), and developed the ability to shift between different languages and modes. Particularly, her material agency was observed when she invented an image of Tanzania and represented her identity with tools and objects: “We speak Swahili, We are here. . . . After ENGL 1301, I came to understand that it is a pride to think as a person who says, ‘I belong to this place [Tanzania],’ and share Tanzanian culture.” Understanding her makerspace activity as part of her literate activity and situating this makerspace artifact in her



Figure 1. A screenshot from Ima’s Makerspace Paper, which showcases Ima’s vinyl cutting product. Photo by Ima.

literate landscape challenges a static view of academic writing, which sees students’ ethos built in one specific academic place. This making activity allowed Ima to bring her homeplace to her coursework and represent her linguistic and cultural identity in non-written modes. Her case suggests that the design of this assignment through making activities can help students empower themselves by allowing them to incorporate their cultures and homeplaces. Furthermore it suggests that this assignment design can promote students’ communicative skills and meta-level understanding of modalities by adding communication through tangible objects beyond written, verbal, and visual modes of communication.

Although she did not elaborate on a more nuanced understanding of rhetorical conventions and constraints in her other discipline-specific courses (e.g., the biology course she was taking alongside her English course in the same semester), Ima seemed to emphasize that the making activities could be generalized in other courses across disciplines and contexts. In her interview, Ima said:

I think makerspace is about creating ideas. Creativity can be applied in other courses. For instance, I came to understand what I did for my Art Appreciation course, creativity can be used there. Creativity can also be used in biology. I took it last semester. I think I could use creativity there with tools in creative ways.

The Makerspace Paper assignment seemed to strengthen her dispositions toward maker mindsets (Halverson & Sheridan, 2014) and awareness of the transferability of creativity-oriented making activities from writing-intensive courses to other courses.

Other students’ artifacts also allowed me to observe their emerging literate agency in which they leveraged their diverse resources across contexts. For example, a student in a vinyl cutter group pressed “Honolulu” to present part of her home culture. This student further detailed the differences and similarities of the learning paths of the case study participants found in “The Future of Literacy” and her own experience in creating a T-shirt by connecting a computer with the vinyl machine. Other students in the vinyl cutting group put greetings in Japanese or used words that are related to their workplaces or out-of-school cultures. As Johnathon Mauk (2003) points out, for students in two-year colleges, “each day, the campus, for them, was something to get *through*” (pp. 371-372). Mauk (2003) argues for spatial and embodied approaches to teaching writing and emphasizes that teachers should acknowledge students’ lives across places and

help them build what Edward Soja referred to as a “third space” (as cited in Mauk, 2003, p. 378), which “offers a lens for understanding the intersection of materiality, action, language, and consciousness” (p. 379) and is often located at the “junction between academic spaces ... and students’ daily lives” (p. 380). Ima’s case aptly shows how a sociocultural understanding of the maker movement at the pedagogical level can serve as this type of an intersection at which students can assemble different languages and cultures and thereby build their literate agency. This makerspace as a third space can help students, particularly students whose languages and cultures were underrepresented, employ their multilingual and multimodal resources and construct their agency and sense of belonging.

Limitations and Suggestions for Further Development

Further research is necessary to examine the intersection between literate agency and the maker movement and its implications for social justice. It should be noted that it is hard to generalize these findings based on a case study that relies on one individual student, however significant this case may be. Ima’s case indicates that studies based on more substantive data are needed to investigate the connection between empowering underrepresented diverse students and integrating makerspace-based activities in writing courses. For example, in a future iteration, I will conduct a comparative research study by recruiting student groups from courses without makerspace-based assignments and from courses with makerspace-based assignments purposefully to examine the perceptions of writings and makerspaces activities of the students and the impacts of varied social factors. Also, it should be acknowledged that it may be challenging to create the maker mindset and connect it with students’ linguistically and culturally diverse resources to build their literate agency within one semester or through a scaffolding assignment. Admittedly, the maker mindset and literate agency will be a more embodied learning process only when students iteratively experience trials and errors within multiple projects. To better situate making activities in first-year writing courses, further studies of scaffolding assignments, reading materials, and makerspaces in the context of literacy analysis are needed. Such studies could make organic connections between this emerging mode of communication and the core curriculum objectives required in general education courses. Lastly, making processes are entangled not only with students’ awareness of their material affordances at conscious levels but also with their affective and variant processes that might be more involved in “noncognitive” and pre-conscious processes (Smith, 2017, p. 125). Thus, it will be important to consider students’ dispositions, perceptions, emotional, and affective dimensions (Beck, 2019, p. 178) when this revised Composition I digital analysis assignment is offered again.

What I suggest for instructors who teach courses other than composition or rhetoric is that this introductory makerspace assignment be developed into a more discipline-specific or theme-based project. These pedagogical takeaways can be applied to other upper-division writing in which monolingual students tend to be more dominant in terms of student populations, because monolingual students also have diverse cultural resources and are encouraged to develop their creative negotiations across registers, genres, and modalities under disciplinary constraints. Furthermore, teachers in institutions that are not yet equipped with on-campus makerspace facilities can still consider integrating this assignment by thinking of other places such as libraries or laboratories for alternative maker programs. Those programs could include any initiatives such as special interest groups on making, faculty committees for the maker movement, and student-led maker fairs in which student participants can communicate their ideas and access tools in whatever limited ways (see Beavers et al., 2019). Lastly, as remote learning becomes more prevalent in higher education in the aftermath of the COVID-19 pandemic, makerspace-based assignments can be further developed through mobile virtual workshops in which students can

experiment with digital designs such as 3D modeling and 2D vector designs.⁵ Although digital designs are not accompanied by physical fabrication stages and the ensuing consideration of material factors in virtual modes, mobile makerspace workshops could encourage students to start building the maker mindset and prototype their designs with tools to expand their literacies.

Conclusion

In short, the Makerspace Paper assignment and this reorientation of the maker movement into writing courses beyond STEM fields can promote students' access to the emerging digital fabrication trends across disciplines and foster students' literate agency by having students reflect on their linguistic landscapes and explore others' making activities. The makerspace-based assignment presents the possibility of addressing social inequalities in which students who have differences in ability, class, race, culture, and language are often marginalized, by recognizing the diverse linguistic and cultural resources that students already have in their everyday lives and thereby cultivating their literate agency across modalities.

ASSIGNMENT

Scaffolding Assignment: Makerspace Paper

I. Make a Digital Literacy Product

In the Digital Literacies and Makerspace module, you will visit the Makerspace Studio at Houston Community College and participate in a workshop module under the guidance of the instructor and the program director. In this module, you will explore how people do languaging by using a wide range of multimodal communication tools including 3D printing machines, laser cutting, and vinyl cutting machines.

You will sign up for one activity among three options (3D printing or laser cutting or vinyl cutting) depending on your own interest so that you can have firsthand experiences in fabricating a tangible item (i.e., a digital literacy product), by using tools and technologies in the Makerspace Studio. Before you come to this workshop, you will complete a Canvas module (Introduction to the Studio) and quizzes. For your reflection, you will jot down what you observe and take photos of specific moments and significant items during the workshop.

II. Write Your Reflection

After finishing the workshop, you will create a workshop report (Makerspace Paper) on the Innovation Module session, which will be submitted on Canvas. You will include your observations, findings, and reflections on your experiences in this workshop and connect your experiences to one or two of the case studies in “The Future of Literacy” in your Major Paper 2. In this brief writing, you will include two components: one descriptive paragraph and one or two reflective paragraphs (minimum 500 words) and one photo/figure you took in the workshop as a piece of visual evidence. To generate ideas for your Makerspace Paper, you might ask the following questions:

Descriptions

- What activities (3D printing or laser cutting or vinyl cutting) did you participate in?
- What happened in this workshop and your activity session? You will describe the events in an organized structure (chronologically or thematically, etc.).

Reflections

- What are the similarities and differences between your chosen case study from “The Future of Literacy” and your own experiences in Makerspace?
- What new findings did you get from these experiences?
- What remaining questions do you have?
- What implications do your experiences have for “The Future of Literacy”?

III. Connect Your Makerspace Paper to Major Paper 2 “Digital Literacy Analysis”

In the following class meeting, you will conduct an interview with your partner as an interviewer and contribute to your partner’s interview as an interviewee to share your experiences in the Makerspace session. In Major Paper 2, you will incorporate your own reflections in your Makerspace Paper and others’ experiences (interview transcripts) as supporting details for your responses to “The Future of Literacy.”

IV. Potential Questions for Your Peer Interview after Makerspace Activities

Literacy Environments

- What kind of literacy materials/environments did you have in your formative years or do you currently have (maps, books, magazines, subscriptions, computers, laptops, tablets, apps, and so forth)?
- What kind of digital devices or social media do you use to talk with your friends or family about something?
- Do you use digital media to write emails or a journal on your own time?
- How many hours do you spend for your self-sponsored (or non-academic) reading and writing?
- To what extent do you agree or disagree with the statement that digital environments have changed our way of thinking, reading, speaking, and writing?

Reflections on Digital Activity Workshops (Makerspace sessions)

- What kind of ideas did you have in mind after completing Makerspace workshops?
- Can you share any ideas about it in this interview?
- How would you connect this workshop experience to your own digital environment or products you have created, if any (e.g., your workplace, smartphone pages/applications, self-made web pages and multimodal/digital projects, etc.)?

*Be mindful that you will not force questions to prove your preliminary hypothesis. Let your interviewee lead his or her stories and make your data shape your thesis. You will collect a few moments from you and your peer’s experiences to examine the current literacies in digital fabrication environments and reflect on the social meanings.

Major Assignment: Analysis on Digital Literacy

Use standard MLA formatting (one-inch margins all around, double-spaced, Times New Roman, 12 pt.). Each page should be numbered and include your last name and the paper needs to include a heading.

For your second major assignment, you will analyze digital literacies of youth by integrating reading materials and reflecting on your experiences in doing digital platform-based activities. Drawing from the concepts and case studies of “The Future of Literacy,” you will conduct your own mini case study on digital literacies, i.e., collecting evidence from observations of your own

activity and your peer’s experiences, via personal interview. By using the collection of evidence, you will explore how digital environments have changed your and others’ everyday lives and what implications this change might have for our classrooms in secondary or post-secondary institutions.

This assignment will be composed of three parts: introduction (and thesis), summary and response (“The Future of Literacy”), case studies on your experiences and your peer’s experiences (with a focus on their makerspace activities), and discussion/reflection. You will transcribe a one-minute interview audio recording from the interview with your peer and describe your findings.

You might start this project with some constructive questions: How do people read, write, and make something new in digital environments? What kind of digital communities do you or they belong to? What digital activities are you/they doing and what changes do they show, compared to previous literacy activities? After actively listening to and recording your peer’s experiences surrounding experiences of digital activities and experiences in makerspace sessions in particular, you will be able to see a certain pattern from their stories and your stories such as daily digital literate practices and experiences in makerspace workshops (for 3D digital printing or laser cutting or vinyl cutting) in different contexts.

For this assignment, you will majorly use “The Future of Literacy” and the *They Say I Say* handbook. You can choose languages other than English for your rhetorical purposes.

Unit Timeline

- Week 1 Day 1: Entering into Major Paper II, Reading due: DeVoss et al. “The Future of Literacy”; Discussing digital literacy practices. Finding your interview partner and setting up a guiding hypothesis
- Week 1 Day 2: Prewriting, Writing summary-response paragraphs
- Week 2 Day 1: Reading Due: *They Say I Say*, Chapter 4 “Yes/No/Okay, But”; Makerspace IDEASudio Quiz due; Makerspace Workshop day (*we will meet at Makerspace IDEASudio)
- Week 2 Day 2: Conducting a peer interview with your partner
- Week 3 Day 1: Makerspace Paper Due; Transcribing interviews, Analyzing your interview data, observations, and experiences
- Week 3 Day 2: Turning Makerspace Paper into your Major Paper II
- Week 4 Day 1: Major Paper II Due, Doing peer review
- Week 4 Day 2: Reflecting on Makerspace Paper and Major Paper II

Notes

¹After a co-requisite model was implemented in public higher education institutions in Texas in 2017, students who did not meet the standard score of the Texas Success Initiative Assessment (TSIA) of English have been encouraged to take a developmental writing course as a co-linked pair course along with their first-year writing course during the same semester. Under traditional models, those students were required to pass remedial courses to enroll in college-level courses.

²For more details about on-campus makerspace tools, see Lee (2020).

³This study was approved by the HCC Institutional Review Board (Study #13112723-0001).

⁴Three students responded to my recruitment email. An attempt was made to schedule interviews with the other two students but was not successful. In many cases, students in two-year colleges work part-time or full-time and are likely to have complexities in their lives and academic paths. It should be noted that they might not have been able to participate in this research study as much as they intended due to external factors.

⁵For more examples of virtual makerspace workshops, see Lee et al. (2020).

Supplementary Material

For supplementary material accompanying this paper, including a PDF facsimile of the assignment description formatted as the author(s) presented it to students, please visit <https://doi.org/10.31719/pjaw.v6i1.90>.

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