Pedagogical Reflections on Making and Literacy Development: How to Transform Makerspaces to Cultivate Literacy

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Preface and Framework

At its core, literacy is the ability to communicate an understanding. A multimodal approach to literacy goes beyond the narrow definition of the ability to read and write a text. It encompases the ability to comprehend and communicate vast sets of knowledge using a multitude of forms of expression. Literacy is both tangible and intangible. Literacy in something *tangible* is the ability to understand and perform a certain skill. For example, singing a song you wrote represents tangible literacies in singing and writing music. We may also have literacy in something *intangible* – in other words, to have a grasp of an idea or a concept. For example, singing a song you wrote about the importance of recycling demonstrates both tangible and intangible concepts: knowledge of sustainability and environmental issues (an intangible literacy) through the tangible literacies of singing and songwriting. Furthermore, in order to demonstrate these literacies, someone has to be listening to the song. Therefore, literacy must also be understood as something that is meant to be shared.

By expanding our understanding of literacy, we can consider every person literate in something, and therefore in possession of something valuable to share with others. In a teaching and learning environment, this understanding breaks down the traditional roles of teacher and student: the teacher as possessor of knowledge and the student as receiver. It allows for a more free flowing exchange of ideas and skills by allowing the individuals to switch between these roles. With this in mind, educators should be as flexible in their methods of teaching literacies as they are with their definition of literacy itself.

We are not simply teaching literacy. We are arming students with the skills to seek out knowledge through experimentation and to exchange ideas with other knowledgeable individuals. In doing this, they build skills in literacy development that they will use across their lifetime. In order to accomplish this goal, educators should focus on creating a learning environment which encourages the development of literacies. One method of doing so, which I have experienced first hand, is creating learning environments using "maker" and "makerspace" pedagogies. Through my role as an employee of UIC's Make Good Lab (MGL), a makerspace housed in the College of Education, I have observed and experienced purposefully cultivated learning environments, and have begun to identify traits of these environments which resulted in the successful development of literacies in a multitude of facets for both students and educators.

"Making Pedagogy" Does not Require Technology: A Quarantine Complication

UIC's MGL is what I endearingly call "my happy place" on campus. As I entered the lab for the first time as a first year elementary education major, I was overwhelmed and intrigued by the vast amounts of technology and resources the space had to offer. I was shown woodworking projects, 3D printed models, music, jewelry, embroidered textiles, and tools for creating just about anything imaginable both in physical and digital forms. While all of these resources were incredibly exciting and useful, as I spent more time in the MGL, I learned it is not the physical tools in the lab which make it an ideal space for developing literacies, it is the environment which is

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strategically curated to encourage creative expression without limitations. I have experienced this concept in practice through my time developing, researching, and evaluating the Youth Writing Their Lives (YWTL) program (a summer program for highschoolers in the Chicago area). The conceptual goal of the YWTL project was to assist youth in developing a diverse array of literacies by creating a narrative, using any modality of interest to represent their lives.

The YWTL program was initially imagined within the MGL, affording students access to all the resources and technologies the lab had to offer. However, due to the COVID-19 pandemic, the program had to be moved online. As a consequence, the educators and program facilitators were tasked with building a curriculum without knowing what specific resources students would have access to (certainly not as many as originally planned). In the absence of the lab's physical space and resources, creating a program which utilized making pedagogies was still a vital goal of the teachers when developing their curriculum. The program facilitators asked themselves "What are the driving principles of the MGL?" The result of this conversion was an equitable and sustainable "making" pedagogy which could be utilized regardless of access to resources.

Maker's spaces are typically understood as facilities abundant with technology and resources for creating. While this is true, even if there is not a physical space or resources like this accessible to an educator and their students, maker and makerspace pedagogies can still be utilized. In a universal sense, a "maker" is someone who creates something to be shared, and a "maker-space" is the environment which allows for creativity and the exchange of ideas. By using this framework to understand making pedagogies, we need not rigidly associate making and makerspaces with access to advanced technologies or expansive resources. This is a far more equitable, sustainable, and realistic approach to incorporating these pedagogies into our teaching practices.

Youth Writing Their Lives (YWTL): Experimental Curriculum Succeeds Under Unprecedented Conditions

Using this pedagogy, the instructors

constructed a curriculum which was student driven, individualized, flexible, collaborative, and encouraging of the creative process and the exploration of new ideas. After watching the program unfold, I identified these principles as the most influential in creating an environment which is curated for developing literacies.

Each of these guiding principles were evident within the introductory activity to the program. Teachers began by asking students to create a virtual vision board which showcased who they were: from interests and hobbies, to causes they were passionate about, to identities which were fundamental to them as individuals. The teachers created and shared their own version of these vision boards first, which set the standard for collaboration between teachers and students. This activity also established a willing openness between the program participants (students and teachers), who were received with acceptance, encouragement, and mutual understanding as they shared their personal vision boards. Furthermore, the task of creating a vision board was *flexible* in that there were no specific requirements as to what aspects of their lives the students had to share. The students had agency in deciding what sort of vision board they would create, which they personalized by the various aspects of themselves they chose to share. Therefore, the task was *creative, student driven, and individualized.* The activity also encouraged the *exploration* of new ideas. As the students shared their vision boards with one another, they engaged in meaningful conversations surrounding each other's literacies (in the form of hobbies and passions). This activity set the standard for developing literacies through a collaborative learning process, which encouraged mutual growth.

The teachers aimed to help students build the necessary skills to tell a narrative of their choice in any modality. Therefore, their planned curriculum focused on building research skills while allowing a lot of flexibility for brainstorming, collaborative discussion, and time for providing individualized support. In practice, this meant educators led workshops such as finding and analyzing mentor texts. Students practiced seeking out mentor texts, analyzing what aspects of these works could be valuable to them, and what aspects they might learn from critiquing them. This

allowed the students to build literacy skills by guiding them to seek out, critique, and utilize information on any given topic. To account for the student-driven and individualized aspects of instruction, educators in the program also surveyed the students' interests in both their desired content area and modality for their projects. Students were allowed to choose any topic which was meaningful and relevant to their lives and utilize any modality which interested them; this kept students highly engaged throughout the learning process. Students were also grouped based on their chosen modality, and paired with a teacher most equipped to teach literacies in that area. For example, a student who chose poetry as their modality was paired with a teacher who was highly experienced with instructing creative writing. While the teachers in the program were well equipped with knowledge to share, the program's collaborative nature also allowed students to seek support from their peers and to step into the teacher or expert role and share the literacies they already possessed. For example, a student well versed in video editing techniques might share strategies to provide new facets of literacy for both their peers and instructors who do not have prior knowledge of these skills. Overall, throughout the program, students and educators were constantly developing both tangible and intangible literacies through this collaborative learning process.

At the conclusion of the program, students were asked to share what they had created at whatever stage of completion their composition was in. This flexibility allowed students to focus on exploring new facets of knowledge and developing literacy in these areas. They demonstrated their growth by utilizing both tangible and intangible literacies,which they gained or strengthened throughout the program. For example, one student created a "day in my life video" from a Black male perspective after recognizing a lack of Black male representation in this genre. He created a social commentary that recognized this lack of representation, and communicated the value this perspective can add to the genre, and simultaneously created content to rectify this issue. This demonstrated an understanding in *intangible* literacies such as the lack of representation in certain sectors of media and social

norms, in particular for Black men, as well as, *tangible* literacies such as, filming, acting/ performing, and video editing which he used as a modality for communicating his literacy in the aforementioned intangible aspects. Overall, student's success in the program was measured not by any particular metric of companancy or the completion of a particular end result but by demonstrating they were able to gain some sort of knowledge in an area which is relevant and interesting to them, and communicate that knowledge. Therefore, the students left the program with a sense of pride in what they had created, and a deepened connection to the learning process encouraging them to further expand upon their literacies.

Conclusions and Implications

The YWTL program utilized a curriculum built from the ground up, strategically designed to allow for literacy development without constraints of specified content or assessment standards. As a program which existed outside of a traditional school setting these were not factors which had to be considered. Freedom in curriculum can be hindered by the need to adhere to standards set by administration or not having access to the ideal resources to incorporate "making" in your classroom. However, starting with the notion that every student has literacy in some form, and therefore has something of value to share with the classroom is a basis for incorporating "making" pedagogies into curriculum. With this idea in mind, allow for open ended student interest driven projects. Create spaces for your students to explore and share their interests, and be creative with the resources you have available. When possible, be flexible with your expectations for students' work and allow them to their best product. Teaching in this manner does not mean abandoning content standards, but allowing for students to guide their own learning. Through these activities, students gain literacy in intangible and tangible forms, and most importantly they are strengthening their connections to the learning process.