Make Makerspaces Work for Your School
May 2016

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STEAM Lab, Design Studio, FabLab, Tinker Tub, iLab, Workshop, Sandbox, Tech Center...

What do these titles all have in common? They are all names for makerspaces in K-12 schools, and they are becoming one of the most prominent transformative trends in education innovation.

We recently joined a room of school leaders to discuss the maker movement and explore what was working in their schools. Participants shared their experiences – including fumbles or missteps - in developing and enhancing makerspaces at their institutions. All participants agreed on the importance of strategically aligning such innovative initiatives to the school’s goals and mission. As with any booming technology trend or innovation—like 1:1 and BYOD—the pressure to keep up with peer institutions and community expectations can cause quick decision-making and an implementation free-for-all among school leaders, teachers, and parents. Overarching, theoretical discussions can fall off of the priority list in the name of execution.

This paper gathers insights gleaned from those on the ground in K-12 schools, as well as the broader discussion of the makerspace movement, in order to set the foundation for maker success in your schools, or reinforce the practices that are already making your makerspace a success.

Defining the Makerspace

A makerspace can be defined as any place where a student can design, explore, and create using a diverse set of tools and materials. K-12 schools integrate the “maker movement” into their institutions in a variety of ways, motivated by the understanding that makerspaces allow and enhance great learning opportunities. They offer unique, innovative experiences for engaging learning goals. Among the various types of equipment procured for these spaces, are the latest 3D printers, laser cutter tools, and electronics gear.

IT leaders and school administrators are tasked with helping the school community to develop their own understanding of the makerspace, how it fits in their school, and in what ways they can participate. For example, one school chose to create a coffee shop to increase student engagement in maker activities. Another school, in order to increase visibility of (and external interest in) their maker program, removed part of the lab wall and inserted a large window that let students, teachers, and parents see maker activity at work.
Developing the Makerspace

With so much activity and so many new developments in the wider world of makerspaces, it can be tempting to take the example of another institution and replicate it at your school as-is. This seemingly harmless decision may have great implications for whether or not efforts will produce the desired results by way of student outcomes. Research participants stressed the importance of understanding institutional goals first, before designing/developing the maker themes that would be implemented. We also discovered that some knew their makerspace was modeled on the examples of one or several other schools across the nation; however, little more than that was known. A best practice here would be to have a good understanding of how your space alters the model, rather than follows a cookie-cutter formula.

Furthermore, once institutional goals are defined, it is crucial to consider existing learning experiences that could be incorporated into those themes. Remember, your school’s makerspace should first and foremost support the learning experience from the students’ perspective. Understanding how they learn better supports efficient adoption. It is also important to keep in mind that makerspace goals differ among K-12 cohorts—middle vs high school, and less evidently, lower vs upper elementary schools.

Implementing the Makerspace

The perspectives of all stakeholders must be considered with respect to makerspace in your institution during the development phase. However, the real test of whether or not your makerspace will be successful hinges upon individual preparedness to engage the stakeholders and continued support as the space becomes more widely adopted. Our research indicates that classroom teachers often need help to better integrate makerspaces into learning and that some teachers express feeling “clueless” about how to use/integrate the space, especially when it came to curriculum alignment.

Through a survey we conducted on school leadership, we found that about 50 percent of schools did not have at least one dedicated faculty member responsible for leading the initiative. Our group of participants shared on several occasions that teachers did not seem to “own” the process. Understandable in part, given that teachers already spend significant time in planning, preparation, and assessment outside of the classroom. Therefore, there seems to be a need for adequate and paid professional development for teachers to better ensure that makerspaces become well integrated into teaching.
Promoting the Makerspace

Teacher buy-in isn’t the only crucial element involved in successful implementation of a makerspace program. School administrators play a critical role. Some new school initiatives can be easily relegated to the “plate” of one leader or isolated to one department. Makerspaces call for (and should require) creating a team to lead and progress the makerspace effort, as an important innovation initiative that would include school administration as key collaborators. If team members maintain a stance of openness around the applications for and reach of makerspaces with regard to student outcomes, the process will run more smoothly toward success.

If administrators are not an integral part of the development process, they may rightfully question the return on investment in makerspaces. The reality, however, is that funding and outside stakeholder support is rarely an issue. Makerspaces provide tangible value and quickly gain tangible support. The critical task is to develop a story or narrative around integrating the maker movement that is aligned with your school’s goals and mission, so that it can easily resonate with your stakeholders. The challenge is turning successful integration and learning enhancement into pieces that will fit the publicity cycle.

Ideas? Establish a maker day at school; incorporate designs into the built space of the school; increase visual representation of the “made” works; or as one participant did it: just open up a hole in the wall for others to peer in.

The goal to garner widespread support of makerspaces in your school is to tell the story well and consistently. And who tells the story? Everyone: teachers, administrators, tech folks, and especially students. Whoever is on the team in charge of making the space happen—whether it is getting the first pieces of new tech in the building, or gaining approval to repurpose an existing space—their job is to know the story, tell the story, and sell it well to the stakeholders who need to jump on board.

Measuring the Makerspace

Wherever you are in the maker movement cycle—just hearing about the various applications in other schools or deeply engaged in helping teachers with integration—there’s likely a question that has come up once or twice: “What’s the impact?” We discussed this issue with numerous school leaders. Anecdotally, students seem to be enjoying the experience of free-creation. Some schools have explored the idea of including entrepreneurship as part of the makerspace, and others partnered with local or regional entrepreneurial centers to provide kids real-world feedback and “authentic learning experiences.” We’ve learned that students who participated in such programs were very enthusiastic and in some ways more passionate about school work.
afterward. It may be too early to measure, but the key might not be the instrument of measurement itself. The key is to show how makerspace affects creativity, intellectual curiosity, and overall effectiveness.

From the top-down, institutional perspective, when schools efficiently share stories about ways makerspaces positively affect learning and engagement, they will help to draw more students and parents into the movement. Perhaps that is the actual assessment.

Conclusion

According to the Maker Educational Initiative, the ultimate value of makerspaces is in the space outside of the classroom, and even outside of students’ future roles in the working world:

“...the most important benefits of maker-centered learning are neither STEM skills nor technical preparation for the next industrial revolution. Though these benefits may accrue along the way, the most salient benefits of maker-centered learning for young people have to do with developing a sense of self and of community that empower them to engage with and shape the designed dimension of their worlds.”

This is an exciting time to lead the charge and lead the change in introducing or strengthening the maker movement in K-12 schools. We will continue with our research on identifying best practices for defining, developing, implementing, promoting, and measuring makerspaces. Please share your thoughts and comments with us as we continue to explore this transformative and innovative trend.

About Us

MindBridge Partners is an advisory firm focused on learning and innovation. We are a strategic partner providing the rapid development and deployment of solutions for organizations navigating industry transformation. As a dedicated team of professionals with extensive knowledge and experience, we support the needs of organizations around the world through data-driven analysis and strategy execution.

Acknowledgements

MindBridge Partners gratefully acknowledges ATLIS 2016 participants for their insights and Carney, Sandoe & Associates for their research assistance.