



Submitted on: 25/06/2014

Transmedia Storytelling as an Education Tool

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Abstract:

Transmedia storytelling provides an opportunity for librarians to engage their students in creative activities which lure students into reading by building from the basic story into a world of cooperative group work and collaborative intelligence. The research into creativity confirms the contribution transmedia storytelling offers to students who do not fit a traditional mode, and who, if never allowed to be creative in the classroom either drop out of school or become passive learners, and their possible long-term contributions are lost to the future. A new experience, makerspaces, is introduced and proposed as a way to allow students to move toward achieving their full potential.

ile provides a template for writing papers for the 2013 IFLA conference. Full papers should be no longer than 4000 words. For your paper to be accepted it must be formatted as a Microsoft Word file (.doc or .rtf), 10 MB or less in size, including pictures & diagrams and should be written in compliance with these instructions.

Keywords: Transmedia storytelling, makerspaces

A common context in which transmedia storytelling is publicized is the appearance of many types of multimedia mashups related to commercial products such as The Matrix, Spiderman, and Coca-Cola. When this paper is presented, the 2nd Transmedia Storytelling Dreams of Commercial Entities Conference held in Portugal will be over. Their two conferences evolved on the expectations that participants hoped to go viral with their products, directing creativity toward ultimate consumerism. However, transmedia storytelling provides an opportunity for beneficial educational purposes. Such enhancements can lure students into reading by allowing them to build beyond the story.

Transmedia Storytelling

Transmedia storytelling has been an explosion on the world of entertaining and learning with its myriad of “across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experiences. Ideally each medium makes its own contribution to

the unfolding of the story.”¹ Wendig shortens this to “transmedia” as a single descriptive word and gives it a philosophical definition beyond its technical definition as “it offers audience investment and lets them act as collaborators; two the story was intended to be a transmedia experiment from the very beginning.”² Whatever its definition, it “has the power to make any topic more vivid and personal.”³ Gutierrez suggests that this is not in competition with commercial efforts to draw in sales

When done thoughtfully, transmedia isn’t about exploring trendy new platforms or growing additional revenue streams for greedy content producers. Rather it allows participation in a narrative in powerful and original ways. This kind of transmedia doesn’t show up as a flashy add-on to curriculum, but it becomes a streamlined way to embed media literacy and technology literacy.⁴

Jenkins gives us his seven principles of Transmedia Storytelling:

- Spreadability vs. Drillability
- Continuity vs. Multiplicity
- Immersion vs. Extractability
- Worldbuilding
- Seriality
- Subjectivity
- Performance⁵

His audience is in the business sector where he suggests that while independent projects using all the media are effective, he suggests strong collaboration as the “ideal aesthetic form for an era of collective intelligence.” The challenge is to move this into the basic education environment. A new effort at expanding student creativity is the opportunity offered by librarians to build spaces for experimentation called makerspaces which will be covered in depth later.

The strategy of using transmedia storytelling is not only to develop creativity but to use it in ways to do inquiry, promote deep understanding, and direct it toward the solution of problems in local, national and global challenges. The strategy proposed is to blend the excellent skills of transmedia storytellers over into the world of both formal and informal learning. We propose three stages of development as the storytellers emerge:

- Personal expertise
- Cooperative group work
- Collaborative intelligence

Personal Expertise

In an educational setting, engagement in a topic, like that of a fascination with Star Wars or a comic book character, invites the reader or consumer with the possibility of using technology as a creative expression. Interest drives deep understanding of content, texts, ideas, actions, consequences into developing first, the skills of various technologies but also dispositions that result in a demonstration of personal expertise. The background knowledge in individual learners allows them to conceive and implement a project. However, it is when the expertise of each individual is placed in a group that greater challenges are solved.

Cooperative Group Work

When cooperating with others to produce a product such as a video or mashup, the challenge is to put together in flawless sequences sounds, visuals, action, music, or other media into an extension of the original. Much of the research in group work is done in higher education rather than basic education. That is where the researchers are striving for tenure and promotion while, for teachers in basic education, tenure is not based on reports of research studies. One research study of successful group interaction tested usage of next generation e-books with annotative and sharing capabilities to promote student learning through reflection and sharing of ideas and found that this did promote student learning experiences.⁷

Another study⁸ tested the use of collaborative 3D learning games in a scripted game setting for vocational education. They found that the teacher had a special role in helping groups develop collaborative knowledge.

In a study where participants were video-taped, Webb et al,⁹ explored the relationships between student conversations and teacher practices in elementary school mathematics classrooms. They found that the level of engagement of students with each other's ideas and their detailed explanations of problem-solving strategies impacted their achievement. Teachers in the study implemented many different instructional practices, but their follow-up practices determined whether their students became a part of others' ideas at a high level.

The teachers' ability to manage group work in the classroom, according to a research study by Forslund-Frykedal and Chiriac,¹⁰ was tested along with their presumptions to see the effect on their willingness to use group work. They found that teachers presumed that students would learn only how to collaborate and not subject knowledge.

Moving into research in higher education, to compare the impact of cooperative learning with tertiary English learners, Ning and Hornby¹¹ studied two randomly assigned classes at a university in North China, one with cooperative groups and one with whole-class instruction. They found that, of their six aspects of learning motivation, only intrinsic motivation showed significant differences; and, in the process, a product might emerge that is larger than the sum of the pieces of cooperative endeavors into collaborative intelligence.

Zeitan and Abdulgader¹² remind us that culture has an impact on the ability of students to work easily in a group. They tested group projects in two universities, one in the United States and the other in Qatar and found that the significant positive correlation between team satisfaction and group performance was only for the U.S. students.

Collaborative Intelligence

Educational topics may begin as tinkering with the original inquiry of the textual world but soon go beyond just an experiment with technology to new forms of creative expression, innovative ways of presenting ideas far beyond what the creator of the original might have envisioned. All this is anchored in the world of creativity. In cooperative work, each group member might be in charge of one piece of the final project such as sound, script, filming, or editing. In an experience of collaborative intelligence, the various skilled members combine talents to build something that could not have been done by one person individually. In this case, they approach true creativity, innovation, and approach entrepreneurship.

The World of Creativity

Much has been written about creativity in the general research studies and those directly applied to education. But what, actually, is creativity?

Definitions of creativity abound in the literature. For some, creativity is limited to the arts where it is demonstrated with the paintings or sculptures of artists or the symphonies or operas of great musicians. One that is useful to an educator is

making or doing something useful that is original or better. It improves every facet of life by bringing change and development in the arts, scientific innovation, economic development, and every other endeavour. Creativity requires creative climate, creative attitude, and creative thinking.¹³

The Research. This section explores the world of creativity by presenting not only the results of research studies on the topic of creativity, but by examining and presenting examples of topical storytelling in a transmedia environment. In doing so, we hope to encourage librarians and they, in turn, will help teachers first to recognize in young people a creative bent, and to provide both an environment, tools, and the encouragement to explore more than just commercial products, but challenge them in new and exciting pathways that will appeal to them as they want to make a contribution to global societies. It is a whole new and exciting world.

Three recent books on creativity provide three different views, one of unleashing creative potential in each person, one of building on failures, and the last on building within a template. Kelly and Kelly¹⁴ define creative confidence as “a way of experiencing the world that generates new approaches and solutions.”¹⁵

After four decades of experience, an elementary school teacher restructured her curriculum into design challenges. Instead of teaching discrete subjects, she created projects that covered the same topics but got students to step away from their desks and think more critically. Their test scores improved, but more important, parents noticed their children were more engaged and inquisitive.¹⁶

These researchers advocate building a creative support network with one reason, that this takes some of the pressure off the individual to make any project successful all alone.

Lewis¹⁷ provides a long discussion of those who built on their failures to move forward and how failing allowed them to rise again. Her examples are from those in the world of the arts as well as scientists and social scientists. The lawyer, Charles Black, Jr., who was on the 1954 legal team for the *Brown v. Board of Education* case which caused the U.S. Supreme Court to declare segregation “unlawful”, credits his attending a dance in Austin, Texas and hearing a trumpet player, a jazz musician. At that moment he recognized the genius of Louis Armstrong, and this experience helped him overcome his previous failure to recognize a more expanded vision of humanity. This offers a totally different picture of growing from failure.

Social justice, no matter its kind comes from more than critique and counterstatement, but from wrestling with seeming failure—what haunts us and what we would rather not inhabit, the gulf between what is and what should be.¹⁸

True creators or inventors have pursued their pathways first as users, then as tinkerers into the world of experimentation, and finally into the world of creation, invention and even entrepreneurship. Small expects school librarians to take responsibility for clearing the path for these students. In her research study,¹⁹ she describes 84 successful “child inventors” in grades 4-8. She encourages school librarians to provide “the right space” for the “thousands of students in our schools who burn with a passion for creating innovation and just need someone to guide and nurture them.”²⁰

Teachers and many school librarians seem to prefer structure and become uncomfortable in allowing students freedom to collaborate, work in groups, and create. Perhaps they would be less challenged with a former president of the American Psychological Association, J.P. Guilford, who, in 1950, proposed the concept of “divergent thinking” with creativity a trait that could be tested and was defined by fluency, flexibility, originality, and elaboration. This was not based on empirical research, but the topic continued to intrigue him, and in the early 1970s, he conducted a study of creativity with a nine-dot puzzle to connect the dots with just four straight lines and not raising the pencil from the page. This “test” led to the phrase “thinking outside the box.”²¹

Boyd and Goldenberg²² negate the outside the box thinking with “the challenge this biggest myth about creativity: that it requires outside the box thinking.”²³ Their premise is that “more innovation--quicker and better innovation—happens when you work *inside* your familiar world” inside your world using a template. (p. 2) They offer five templates²⁴ or techniques as subtraction, division, multiplication, task unification, and attribute dependency. The definitions of each include explanations for each such as the subtraction of ear covers from headphones to create the ear bud now hanging out of everyone’s ears. Benjamin Franklin’s invention of bifocal glasses came by multiplying the lens in a traditional pair for nearsighted persons with lens for the farsighted (multiplication). Task unification is demonstrated through placing of ads on buses, and attribute dependence describes when one thing changes, something else changes with the example of windshield wipers that change speed as the amount of rain diminishes or increases. They continue to pose their theory noting the amount of output by composers Paul McCartney and John Lennon “discovered successful patterns in music and created a sophisticated set of reusable music-making templates that allowed them to generate one hit after another.”²⁵ Using these tools one moves from a creative idea through the generation of that idea until it becomes valuable.

One model of creativity is Beghetto and Kaufman’s “The Creative Trajectory” which has “Big C” creators (monumental, legendary geniuses). “Little c” are first efforts with repeated trials, and interpretation of experiences and actions is “mini-c.” “Pro-C is a high level but not Big C.”²⁶ These researchers conducted a later study²⁷ to determine if laypersons recognize the four Cs and to see what non-researchers think and looking at cross cultural beliefs, the ability to differentiate between the levels of creative development and noncreative endeavors. Had this study been conducted with parents rather than college students, the results could offer more than the measures for ability to assess the levels of creative development.

Encouraging the Creative Bent in Students

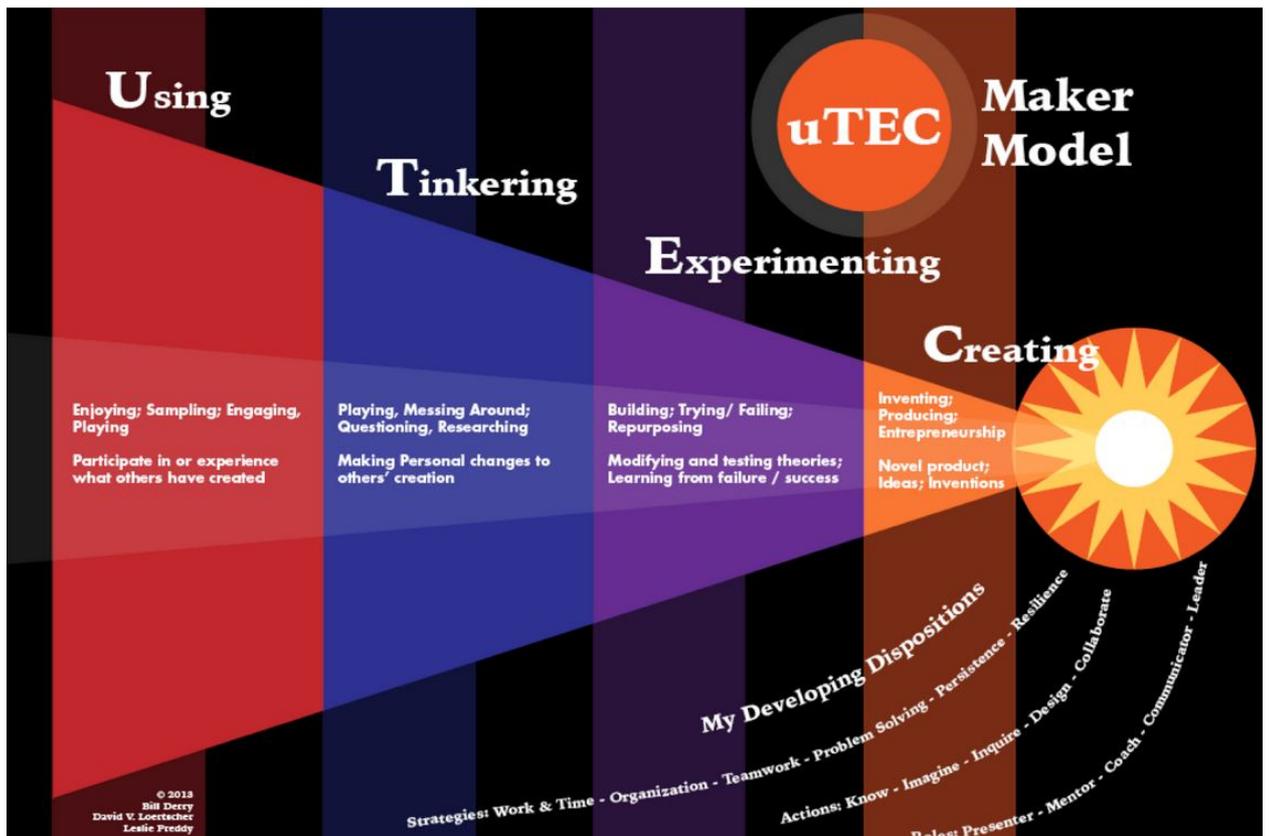
If one accepts the premise that curiosity can lead to creativity, the attitudes and actions of parents and teachers often squelch the child beginning with the two-year-old who asks “why?” incessantly. Teachers with larger classrooms prefer the quiet student rather than the excited one with the need for an answer that is “off target.” Arone and Small offer

suggestions for how educators can foster curiosity for learning and share Keller's ARCS Model of Motivational Design²⁸ with its four broad motivational goals including attention, relevance, confidence, and satisfaction, all to promote intrinsic motivation and cognitive engagement.

Starko²⁹ believes that teachers and librarians can work together to offer creativity in the classroom. His three keys involve a creativity-friendly classroom with support for intrinsic motivation and teaching the skills and attitudes of creativity with the edict that librarians should locate books that will support creative thinking. His last key is teaching the creative methodologies of the disciplines helping them understand the big ideas as well as the techniques and habits of mind of creative individuals in the field, the problems being explored as well as facts and rules governing the field.

A growing trend in some countries known as makerspaces are places where creative minds of all ages gather to create, build, think, and produce fresh ideas, products, and solutions to problems. Creating makerspaces can be costly, particularly if one considers a 3D printer an essential element, although those are getting less and less expensive. However, schools do not necessarily need that level to begin. In fact, just as reference materials once moved from library to classroom, if a library is too full of furniture, the "ingredients" for a maker space may be placed on a movable truck to go to a classroom. Creative librarians can do much with little; the concept, once implemented can grow with members of the community who may already be volunteering to mentor in a school library getting help from others in the community.

A great many resources are available in the periodical literature and in book form for those who are interested in this concept. The uTEC Maker Model below describes the pathway of creativity individuals and applies to transmedia creators.



Designed by Bill Derry, David V. Loertscher and Leslie Preddy.³⁰

As individuals, students become “makers,” in the uTEC Maker Model illustration.ⁱ They start out as users of a particular technology or product where they “use” the product the way the creator intended. This would apply in many fields such as playing a piano piece the way the composer intended or playing a computer game as constructed. However, makers either become bored or dissatisfied with the original and begin a tinkering phase where they mess around with the original. In music, this is known as arranging. In gaming, tinkering is a good descriptor.

When makers move to the next phase, they get serious about experimentation and change as they test out newer ideas connected with music or a game constructed by someone else. They try to modify the original, and, in their modification, encountering trials, and failures, begin to abandon the original in favor of something unique and original. Continuing on their path, true makers enter the world of creation where they are designing, inventing, and even becoming entrepreneurs. All along the journey, they have been developing useful skills and dispositions needed to achieve an end; a new think, technique, idea, or invention. As adult mentor, if we librarians recognize these stages of creation, we can encourage, support, and mentor our young people along their path rather than discounting what might be considered inappropriate or strange behaviors.

Adopting Transmedia Storytelling in Formal Education

Many teachers and adults squash creativity because it does not often fulfill the expectations adults set out for children and teens. Formal educational assessment practices and national testing often cause teachers to create rigid rubrics or expectations of the products that

students submit for assignments that are given. For example, a research paper may be evaluated based upon a strict set of guidelines including construction, citing, writing style, format, and acceptable media. Should a creative student stray from the formal guidelines, their efforts are often “marked down” rather than recognized. Students who are punished for their creativity stop trying because they cannot succeed at the game of schooling with their behaviors which are considered disruptive, their “out of the box” thinking, and their different products. If the adult is trying to prepare the student for higher education where strict rules of acceptable scholarship is the norm, then they are in a quandary of whether to recognize the creativity and cleverness at the expense of wondering if the student could actually construct a product acceptable in academia.

The result in formal education is often an either/or judgment rather than a both/and approach. The student either does it one way or fails. And, we don’t know how to reward creations on both levels. Examples of failures at formal education yet development of successful entrepreneurship and invention abound across the world. The most disruptive, yet creative students drop out of a system they consider disruptive. Examples from the U.S. include Thomas Edison and from Germany, Albert Einstein.

One of the oft quoted ideas has been from the early days of the Apple Computer Company:

Here's to the crazy ones. The misfits. The rebels. The troublemakers. The round pegs in the square holes. The ones who see things differently. They're not fond of rules. And they have no respect for the status quo. You can quote them, disagree with them, glorify or vilify them. About the only thing you can't do is ignore them. Because they change things. They push the human race forward. And while some may see them as the crazy ones, we see genius. Because the people who are crazy enough to think they can change the world, are the ones who do.

Both teachers and librarians encounter these types of students in the normal process of education, and if adults engage in a conversation about creativity, cleverness, inventiveness, and out of the box thinking, they can sharpen their skills of recognition. Then, together, they can create simple ways to recognize and reward this type of behavior. Using the uTEC Maker Model, they can help their students recognize creative behavior and how it cannot just disrupt formal learning but contribute to it. If librarians cannot seem to interest teachers in such a recognition, then they can foster this behavior alone in the library environment. We think that we, school librarians, have been doing this independent work for a number of decades.

The difference across time has been the various disruptive technologies that have emerged in the past decade. This includes 3D printers, numerous collaborative software programs such as 3D modeling and musical composition, open source algorithms, sensing devices, hacking technologies, programs that handle large data sets, digital photography, and a vast array of new devices. The question for librarians is how to keep up and provide opportunities to embrace the new technologies to unleash the possibilities of creativity and invention.

Perhaps a few indicators might help librarians push the envelope with individuals and groups of learners. In the normal flow of work, try to recognize the following:

- Students talking about their use of social media and technologies they like.
- Notice clever creations by students that are not associated with their school work and talk to them about what they are doing.

- Recognize the need to have the above described “disruptive” technologies in the library whether these are being used in the classroom or not.
- Create an excuse to have a makerspace in the library. Collaborate with other libraries and organizations in the community interested in making opportunities for creative youth and who are willing to help create a makerspaces.
- Seek out teachers who are like minded in recognizing inventiveness, creative approaches, and advanced social media or technology prowess.

More and more voices across the world are taking notice of the need for self-directed learners and the use of project based learning to encourage engagement, ownership, passion, and purpose in their lives during school. Some librarians ask to teach a class where projects and experimentation are central and they are mentors. These opportunities not only provide a rich new environment in the library but librarians realize that they can connect many students to resources, technologies, community experts, online learning, and encouragement to pursue and explore new ideas.

In Conclusion

As stated earlier, students be encouraged to go beyond tinkering or just an experiment with technology into new forms of creative expression such as transmedia storytelling and makerspaces. Working together, students may create a product that is larger than they might create as individuals and move into collective intelligence.

It is a journey for both librarian and client worth pursuing.

References

- ¹Jenkins, Henry. "Transmedia Storytelling 101," Confessions of an Aca Fan, March 22, 2007, http://henryjenkins.org/2007/03/transmedia_storytelling_101/html
- ²Wendig, Chuck. <http://terribleminds/ramble/2012/04/17/25-things-i-think-about-transmedia>.
- ⁴Gutierrez, Peter. "Every Platform Tells a Story." *School Library Journal* (June 2012) Vol. 58:6 p. 32
- ⁵Ibid., p. 34.
- ⁶Jenkins, Henry. "Revenge of the Origami Unicorn Part 2" The Remaining Four Principles of Transmedia Storytelling http://henryjenkins.org/2009/12/revenge_of_the_origami_unicorn.html.
- ⁷Lim, Ee-Lon and Hew, Khe Foon, "Students' Perceptions of the Usefulness of an E-book with Annotative and Sharing Capabilities as a Tool for Learning: A Case Study. *Innovations in Education & Teaching International* (February, 2014) Vol. 51: 1, pp. 34-45.
- ⁸Hamalainen, Raija and Oksanen, Kimmo. "Collaborative 3D Learning Games for Future Learning: Teachers' Instructional Practices to Enhance Shared Knowledge Construction Among Students." *Technology, Pedagogy & Education* (March 2014) Vol. 23:1, pp. 81-101.
- ⁹Webb, Norene M. et al. "Engaging with Others' Mathematical Ideals: Interrelationships among Student Participation, Teachers' Instructional Practices, and Learning." *International Journal of Educational Research* (January 2014): Vol. 63 pp. 79-93.
- ¹⁰Forslund-Frykedal, Karin and Chiriac, Eva Hammar. "Group Work Management in the Classroom." *Scandinavian Journal of Educational Research* (April 2014): Vol. 58: 2 pp. 222-234.
- ¹¹Ning, Huiping and Hornby, Garry, "The Impact of Cooperative Learning on Tertiary EFL Learners' Motivation." *Education Review* (February 2014) Vol. 66: 1 pp. 108-124.
- ¹²Zeitun, Rami, Abdulgader, Khalid Shams, and Alshare, Khaled A. "Team Satisfaction and Student Group Performance: A Cross Cultural Study." *Journal of Education for Business* (September/October 2013) Vol 88:5 pp. 286-293
- ¹³Kim, Kyung Hee and Coxon, Stephen V., "The Creativity Crisis, Possible Causes, and What Schools Can Do." In Jones, Jami Biles and Flint, Lori J. eds. *The Creative Imperative: School Librarians and Teachers Cultivating Curiosity Together*. Santa Barbara, Calif.: Libraries Unlimited, 2013. p. 53.
- ¹⁴Kelley, Tom and Kelley, David. *Creative Confidence: Unleashing the Creative potential within Us All*. New York: Crown Business, 2013.
- ¹⁵Ibid. p. 7.
- ¹⁶Ibid., p. 8.
- ¹⁷Lewis, Sarah. *The Rise: Creativity, the Gift of Failure and the Search for Mastery*. New York: Simon & Shuster, 2014.
- ¹⁸Ibid., p. 98
- ¹⁹Small, Ruth V. "Transforming the School Library into an 'Innovations Space' for Students." *School Library Monthly* (March 2014) Vol. 30: 6 pp. 5-7.
- ²⁰Ibid., p. 7.
- ²¹Boyd, Drew and Goldenberg, Jacob. *Inside the Box: A Proven System of Creativity for Breakthrough Results*. New York: Simon & Schuster, 2013. p. 21.
- ²²Ibid.
- ²³Ibid. p. 222.
- ²⁴Ibid., pp 4-6.
- ²⁵Ibid., p. 8.
- ²⁶Kaufman, James C. and Beghetto, Ronald A. "Beyond Big and Little: The 4C Model of Creativity. *Review of General Psychology* (March 2009) 13: 1, p. 1-12
- ²⁷Kaufman, James C. and Beghetto, Ronald A. "Do People Recognize the Four Cs? Examining Lay Persons Concepts of Creativity. *Psychology of Aesthetics, Creativity and the Arts* (August 2013) 7:3 pp. 229-236.
- ²⁸Arone, Marilyn P. and Small, Ruth V. "Acting on Curiosity: What's Changed, What Hasn't, and What Educators Can Do," in Jones, Jami Biles and Flint, Lori J. eds. *The Creative Imperative: School Librarians and Teachers Cultivating Curiosity Together*. Santa Barbara, Calif.: Libraries Unlimited, 2013. pp. 132-134.
- ²⁹Starko, Alane Jordan, "Creativity in the Classroom: Teachers and Librarians Together," Jones, Jami Biles and Flint, Lori J. eds. *The Creative Imperative: School Librarians and Teachers Cultivating Curiosity Together*. Santa Barbara, Calif.: Libraries Unlimited, 2013. pp. 139-149.
- ³⁰Derry, Bill, David V. Loertscher and Leslie Preddy. "The uTEC maker model," 2014. At <https://sites.google.com/site/utecmakermodel/>

Appendix A

Makerspaces Bibliography

- American Association of School Librarians. *Standards for the 21st-Century Learner*. American Library Association, 2007. (Downloadable for free at: <http://www.ala.org/aasl/standards>).
- Dillon, Stacy. "School Library Makerspaces: Grades 6-12." *School Library Journal* (April 2014) p. 195.
- Dougherty, Dale. "Learning by Making: American Kids Should Be Building Rockets and Robots, Not Taking Standardized Tests." *Slate*. http://www.slate.com/articles/technology/future_tense/2012/06/maker_faire_and_science_education_american_kids_should_be_building_rockets_and_robots_not_taking_standardized_tests_.html
- Every Child a Maker: Maker Education Initiative*. *Make Magazine*. <http://makered.org> (accessed February 22, 2013).
- Fontichiaro, Kristin. "Makerspaces: Inquiry and CCSS." *School Library Monthly* (March 2014) pp. 48-49
- Graves, Colleen. "Teen Experts Guide Makerspace Makeover." *Knowledge Quest* (March/April 2014) pp. 8-13.
- Gustafson, Ellen, "Meeting Needs: Makerspaces and School Libraries" *School Library Monthly*, (May/June 2013) pp. 35-36
- Hamilton, Buffy. "Makerspaces, Participatory Learning, and Libraries." *The Unquiet Librarian*. <http://theunquietlibrarian.wordpress.com/2012/06/28/makerspaces-participatory-learning-and-libraries/>.
- Harland, Pam. "Think, Create, Share, and Grow in Your Library Space This Spring." *Knowledge Quest* (March/April 2014) pp. 6-7.
- Laughlin, Amy M. "3d Printing/Maker Faire/Makerspaces." *School Library Journal* (March 2014) p. 182.
- Loertscher, David V.; Preddy, Leslie; and Derry, Bill. "Maker Spaces in the School Library Learning Commons and the uTec Maker Model." *Teacher Librarian* (December 2013) pp. 48-51.
- Make it @ Your Library*. <http://makeitatyourlibrary.org/>.
- MakerBridge*. <http://makerbridge.si.umich.edu/>.

Maker Education Initiative: Every Child a Maker. <http://www.makered.org/>.

Makerspaces: A New Wave of Library Service. ALA TechSource Webinars.
<http://bit.ly/VGcmf8>.

MENTOR Makerspace. <http://mentor.makerspace.com>.

Michigan Makers. <http://michiganmakers.weebly.com>.

Preddy, Lesley. Creating a School Library “Makerspace.” *School Library Monthly* (February 2013): pp. 41-42.

Preddy, Lesley. *School Library Makerspaces.* Libraries Unlimited, 2014.

Range, Ellen and Schmidt, Jessica, “Explore, Plan, Create: Developing a Makerspace for your School Community” *School Library Monthly* April 2014 pp. 8-10

Sun, Carolyn. “Library Makerspaces Go Statewide.” *School Library Journal* (April 2014) p. 1.

Sylvia’s Super-Awesome Maker Show: Sylvia’s DIY Webshow on Everything Cool and Worth Making. <http://sylviashow.com/>

Wong, Tracy. “Makerspaces Take Libraries by Storm.” *Library Media Connection* (May/June 2013) pp. 34-35.

Appendix B

1. Review the bibliography in Appendix A and choose a way to create a makerspace in your library.
 2. Talk with your teachers and gather their suggestions for allowing child inventors the freedom to invent so they can be “making or doing something useful that is original or better.”
 3. Work with teachers on projects that allow for collaboration between teacher and librarian, as well as collaboration among students.
 4. Identify those students, crazy ones, the misfits, the rebels, the troublemakers, the round pegs in the square holes, the ones who see things differently whose creativity has been squelched and help them move back into an experimental environment in your creatively friendly library.
 5. Honor and help teachers learn to honor innovation.
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