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Over winter break I was invited to attend a group discussion at Carnegie Hall that was being held by the Director of Arts Education for the National Endowment for the Arts. The discussion covered how to thoughtfully design the next generation of experiences for learning music, making music and thinking about musical ideas with kids. After a number of formidable participants weighed in, Garry Golden, a futurist and strategist based in Brooklyn, spoke up and gave one of the more memorable comments, which was, “Forget Youtube. Forget Facebook. By the time you get it in the classroom, the technology will have already drastically changed.”

I felt that Golden wasn't suggesting that educators give up on technology or to not include technology in their approaches to teaching and learning, but what he was saying was that educators and learners should be more focused on the fundamentals of what the new technology was bringing to experiences outside of the classroom. As opposed to trying to use Facebook as a national platform for learning math, science, and history, educators should be more focused on understanding why Facebook is important and incorporate those discoveries and core mechanics into their classroom activities.

With this mind, I put together a non-exclusive list of skills I feel need to be addressed by all areas of education (from children to adults) at the local, national, and international levels if we are all to succeed in the 21<sup>st</sup> Century, ensuring a prosperous and humane world for generations to come. These skills are collaboration, participation, synthesis, and reinvention.

Over the next few pages I will present why these skills should be valued, how to encourage them, and how I would teach them in the 21<sup>st</sup> Century classroom. Each of these skills go hand-in-hand, so I will do my best not to segregate them into unique, cult-silos of personality but instead will illustrate how they are all intertwined.

Not enough can be said about working in groups. I can distinctly remember in High School volunteering to be paired with two of the top students in my Latin class. At our first group meeting I was asked, “So you want to work with us because you think we’ll do all of the work for you?” Well, it wasn’t what I was thinking originally but are you offering? Honestly, I thought I might learn something because I had already tried doing it on my own and that barely got me past “Veni, Vedi, Vici”.

In *What Video Games Teach Us*, James Paul Gee wrote, “Like reading and thinking, learning is not general, but specific; like reading and thinking, it is not just an individual act but a social one.”<sup>1</sup> As Gee suggests, group activities provide opportunities for collaborative and participatory learning in a social context, not unlike what a good number of new social media tools offer in informal settings.

Rima Shore, in *The Power of Pow! Wham!: Children, Digital Media & Our Nation’s Future*, writes, “Children need to know *how* and they need to know *what*. Today, they also need to be able to know *with*. Participatory knowledge development is at the heart of the online world known as Web 2.0, where user-generated websites and content dominate.”<sup>2</sup> Learning is a social, participatory activity, and the web experiences of today include these types of mechanics.

In *Living and Learning with New Media: Summary of Findings from the Digital Youth Project*, it is stated, “We see peer-based learning in networked publics in the mainstream friendship-driven sites.”<sup>3</sup> So often are young people and adults presented with opportunities to learn, contribute, and participate in vastly differentiated groups online, so are there enough opportunities in the classroom of the same sort?

As Tracey Hall, Nicole Strangman, and Anne Meyer describe as one of the foundations of differentiated instruction, they suggest that “grouping and regrouping must be a dynamic process, changing with the content, project, and on-going evaluations.”<sup>4</sup> I feel this approach to problem solving and decision-making within a group context is a great method for

providing learners an in-class activity that will provide valuable experience for outside-of-the-class room, consequence-baring actions.

With this in mind and staying with my High School example, I think a unique way to apply grouping and regrouping methods would be to provide students opportunities to create and present group work within an “exchange program” between classrooms within a school. Student groups would maintain and collaborate using an online wiki, posting appropriate research, concepts, and conclusions. Teachers can use the wiki and group interactions as indicators for feedback and guidance. Students from their class and other classes could read and comment about what they had discovered, and the wiki would provide a backdrop for the presentation student groups would give during the “exchange program”. Social norms and practices can vary greatly from classroom to classroom, so, even within a small community, providing groups of students a chance to share what they have learned in alternative settings in front of new audiences would resemble the varying norms they will experience in their life outside of the classroom.

In *How People Learn*, the goal of education is described as, “better conceived as helping students develop the intellectual tools and learning strategies needed to acquire the knowledge that allows people to think productively about history, science and technology, social phenomena, mathematics, and the arts.”<sup>5</sup> Synthesis, which is the ability to recognize useful information, use that information to make sense of a certain subject, and be able to explain those newly understood concepts to others, is an important intellectual tool that can be reinforced by providing context for the information that is being learned.

Brown, Collins, and Duguid, in *Situated Cognition and the Culture of Learning*, write, “The activity in which knowledge is developed and deployed...is not separable from or ancillary to learning and cognition. Nor is it neutral. Rather, it is an integral part of what is learned.”<sup>6</sup> They continue with, “we argue that approaches such as *cognitive apprenticeship*...that embed learning in activity and make deliberate use of the social and physical context are more in line with the understanding or learning and cognition that is emerging from

research.”<sup>7</sup> By providing students with facts that are embedded in situation, they more fully understand these concepts in their entirety.

David Merrill, when discussing *First Principles of Instruction*, writes, “Learning is facilitated when these components are directly taught in the context of a progression of whole problems or tasks.”<sup>8</sup> Merrill goes on, and writes, “individual components are most effectively taught in the context of a progression of real-world problems where the student is shown a problem, taught the components, and then shown how the components are used to solve the problem or do the whole task.”<sup>9</sup>

Although he was referring specifically to adult learning, Stephen Brookfield supports context-based learning in writing, “The emphasis on experience as a defining feature of adult learning was expressed in Lindeman’s frequently quoted aphorism that “experience is the adult learner’s living textbook” and that adult education was, therefore, “a continuing process of evaluating experience.”<sup>10</sup>

As opposed to only learning about how many soldiers fought in Gettysburg during the Civil War, witnessing a Civil War reenactment would more appropriately provide the scope of what happened. Instead of only reading about fluid mechanics, students should be experiencing displacement through a series of in-class exercises. Participating in Model U.N. not only provides information about choices and decisions that a nation must make but places those choices and decisions within context. The students don’t just read about it but instead are required to act; understanding the information can be more fully understood and synthesized with context, or as Brown, Collins, and Duguid explain, “part of their meaning is always inherited from the context of use.”<sup>11</sup>

John Seely Brown and Richard P. Adler wrote, “[w]e are entering a world in which we all will have to acquire new knowledge and skills on an almost continuous basis.” We are past the point of first being an apprentice, moving up through a series of steps, then becoming a master of a single profession. We will all be asked to be Renaissance men and women. We

need to be an apprentice of one subject at one point of the day, and then a master of another subject the next.

When discussing “The Creating Mind” Gardner states, “The creator stands out in terms of temperament, personality, and stance...She strikes out in unfamiliar directions and enjoys—or at least accepts—being different from the pack”.<sup>12</sup> What is most difficult about changing trajectories is not the new trajectory, but the people that you can, or rather cannot, take with you. Because so much of learning in the 21<sup>st</sup> Century will be done in social contexts, students will need to be able to continuously find and surround themselves with a group, become an integral component of that group, and then leave for another set of groups.

I feel that games provide instances where students can explore these different roles, identify themselves with different groups, and begin understanding how others might think or act within certain contexts. Eric Zimmerman writes, “Play arises out of the rules as they are inhabited and enacted by players, creating emergent patterns of behavior, sensation, social exchange, and meaning.”<sup>13</sup> Within game play, a set of rules provide a possible persona to be played out by the student.

Zimmerman continues, “*Rules* and *play* are just game design terms for *structure* and *experience*.”<sup>14</sup> Games provide a system or framework for students to operate within and experiment with identity, actions, and roles. This experimentation and practice of changing roles in different settings will better prepare the student for experiences in the future.

Getting children and young adults to play a game is not the challenge. The challenge is creating games that are relevant to the particular subject matter (math, science, etc) that still provide the incentive and payoff that young students/gamers look for in games. I think the key is by keeping short and long term payoffs for certain activities clear throughout the learning and game playing process, the student’s focus and motivation will be maintained.

For me, an outstanding question about the idea of reinvention and games is the difference between consequence and consequence-free environments? What does the element of real

consequence do to alter the ability of a young adult to think in another person's shoes, take on many different roles, and manage both the master/apprentice personas outside of the game?

Throughout this paper, my goal has been to illustrate the skills I feel will be most valued in the 21<sup>st</sup> Century and ways I would encourage and teach those skills in the classroom. The overarching theme here is that these skills are all intertwined. These skills are not to be seen as qualifications or milestones but instead should be viewed as ways to evaluate student activities (ex. is this exercise collaborative, and does it provide opportunities for context-based synthesis?) as well as a qualifier for students to evaluate the effectiveness of certain courses they are taking or activities they are doing.

Something that I would like to explore more in the future in regards to the future of education is the role that language plays in the ability of learners to absorb certain subject matter and transition from a beginner to an expert in a particular area. I know a challenge that I face while at school here at Parsons is my ability to absorb and use new terminology, most of which is fully integrated in designers or fellow classmate's lexicons, and my proficiency in using new language is directly proportional to my ability to be understood by my peers.

During an interview in *No Direction Home*, a documentary about Bob Dylan and his progression from a political folk singer icon to folk-rock pop icon, Bob Dylan stated, "As long as you're in a constant state of becoming, you'll be alright." I hope so.

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<sup>1</sup> Gee, 7.

<sup>2</sup> Shore, 9.

<sup>3</sup> Bittanti, boyd, Herr-Stephenson, Horst, Ito, Lange, Pascoe, Robinson, 38.

<sup>4</sup> Hall, Strangman, and Meyer, 4.

<sup>5</sup> Educational Practice, 5.

<sup>6</sup> Brown, Collins, and Duguid, 32.

<sup>7</sup> Ibid.

<sup>8</sup> Merrill, 64.

<sup>9</sup> Ibid.

<sup>10</sup> Brookfield, 2.

<sup>11</sup> Brown, Collins, and Duguid, 33.

<sup>12</sup> Gardner, 83.

<sup>13</sup> Zimmerman, 12.

<sup>14</sup> Ibid, 13.

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