

## Practicing 21<sup>st</sup> Century Skills in the Classroom

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### ***Abstract***

*In the midst of the current technological revolution, there is a thriving conversation about how society should adapt to the future of work taking place in the national media, universities, policy organizations, think tanks, consulting firms and companies. One such model for work and education under consideration is that of the role of higher education in workforce development. How well does a bachelor's degree prepare an individual for a career in this shifting landscape of work? What is the responsibility of the university to the student – to prepare them for a career? Or to help them build the intellectual framework to build a meaningful life? Incorporating the practice and development of 21<sup>st</sup> century skills into the higher education classroom does not necessarily require a great rethinking of the education model or content delivery. Rather, it could be as simple as encouraging faculty to use proven educational principles such as active learning and group-based learning into the classroom. This would allow students to practice some of the necessary skills such as communication, respect, teamwork, and problem solving into their higher education curriculum.*

**Keywords:** *21<sup>st</sup> century skills, higher education, active learning.*

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## **1. Introduction**

In the midst of the current technological revolution, there is a thriving conversation about how society should adapt to the future of work taking place in the national media, universities, policy organizations, think tanks, consulting firms and companies. Models for work and education that were taken for granted in the 20<sup>th</sup> century are now under a microscope, as society attempts to determine what is suitable to keep and what needs to be changed and reframed for the 21<sup>st</sup> century. One such model under consideration is that of the role of higher education in workforce development. How well does a bachelor's degree prepare an individual for a career in this shifting landscape of work? What is the responsibility of the university to the student – to prepare them for a career? Or to help them build the intellectual framework to build a meaningful life?

This debate becomes more perplexing when factoring in the role of advanced artificial intelligence, robotics and other advanced information technologies, and how they will shape the future of work. What do humans bring to the table, and how can universities help sharpen those distinctly human capabilities like creativity, empathy, and critical thinking? Many groups, from the United Nations to Rand are proposing that universities focus on teaching these “21<sup>st</sup> century skills” in their classrooms, particularly in the Humanities, Arts, and Social Sciences. But others argue that the valuable class time is already spent learning important content matter, and that it is not the role of professors to teach these skills. Complicating matters is the dearth of research and consensus on how these skills could be best be taught, and how they could be assessed fairly (Herman, 2017). However, there is a growing consensus both in the business world and in higher education that 21<sup>st</sup> century skills are important and should be developed through the educational process. This paper will advocate for a middle ground, arguing that some 21<sup>st</sup> century skills are well suited to being practiced in traditional liberal arts departments, and that they can be more consciously and specifically incorporated into the curriculum in a way that enhances the learning of the subject matter, as well as helps the students develop the skills.

## **2. Framing 21st Century Skills**

The concern about skills-based education is not new, but a part of an ongoing debate over the nature and value of higher education. In 1862 The United States government passed the Morrill Act providing federal support for post-secondary education focused specifically on agriculture and the mechanical arts through the land grant university system, in order to provide a more practical “industrial education” for the broader populace (Croft, 2019). Though higher education has evolved since to encompass a wide range of study in both industrial faculties as well as traditional liberal arts, there remains a great deal of anxiety and discussion about the value and expectations of a liberal arts education. The US Secretary of

Education in 1981 established a National Commission on Excellence in Education to review the quality of education in the country, and advocated for the inclusion of new skills into the curriculum such as “enthusiasm for learning”, “critical thinking”, and “technology” among other things (Gardner, 1983). In 1990 the US Secretary of Labor established the Commission on Achieving Necessary Skills, which built a national coalition called the Partnership for 21<sup>st</sup> Century Skills (P21) bringing together leading educational research and policy groups and public and private institutions. P21 has established a key rubric for 21<sup>st</sup> century skills under 3 themes “life and career skill”, “learning and innovation skills”, and “information, media, and technology skills”. Many other groups from consulting firms such as McKinsey to the World Economic Forum have compiled their own lists of “21<sup>st</sup> century” or “future of work” skills, all of which include a wide blend of personal, professional, and technical skills. Below are two skills rubrics, one from the Partnership for 21<sup>st</sup> Century Skills, and the other a rubric deigned by the National Network of Business & Industry Associates (Figure 1).

<p><b>National Network of Business &amp; Industry Associates:</b></p> <p><b>PERSONAL SKILLS:</b></p> <ul style="list-style-type: none"> <li>• Integrity</li> <li>• Initiative</li> <li>• Dependability &amp; Reliability</li> <li>• Adaptability</li> <li>• Professionalism</li> </ul> <p><b>APPLIED KNOWLEDGE:</b></p> <ul style="list-style-type: none"> <li>• Reading</li> <li>• Writing</li> <li>• Mathematics</li> <li>• Science</li> <li>• Technology</li> <li>• Critical Thinking</li> </ul> <p><b>WORKPLACE SKILLS:</b></p> <ul style="list-style-type: none"> <li>• Planning &amp; Organizing</li> <li>• Problem Solving</li> <li>• Decision Making</li> <li>• Business Fundamentals</li> <li>• Customer Focus</li> <li>• Working with Tools &amp; Technology</li> </ul> <p><b>PEOPLE SKILLS:</b></p> <ul style="list-style-type: none"> <li>• Teamwork</li> <li>• Communication</li> <li>• Respect</li> </ul>	<p><b>Partnership for 21<sup>st</sup> Century Skills:</b></p> <p><b>KEY COMPETENCIES:</b></p> <ul style="list-style-type: none"> <li>• Global Awareness</li> <li>• Financial, Economic, Business, and Entrepreneurial Literacy</li> <li>• Civic Literacy</li> <li>• Health Literacy</li> <li>• Environmental Literacy</li> </ul> <p><b>LEARNING AND INNOVATION SKILLS:</b></p> <ul style="list-style-type: none"> <li>• Creativity and Innovation</li> <li>• Critical Thinking and Problem Solving</li> <li>• Communication</li> <li>• Collaboration</li> </ul> <p><b>INFORMATION, MEDIA &amp; TECHNOLOGY SKILLS</b></p> <ul style="list-style-type: none"> <li>• Information Literacy</li> <li>• Media Literacy</li> <li>• ICT (Information, Communications, Technology) Literacy</li> </ul> <p><b>LIFE &amp; CAREER SKILLS</b></p> <ul style="list-style-type: none"> <li>• Flexibility and Adaptability</li> <li>• Initiative and Self-Direction</li> <li>• Social and Cross-Cultural Skills</li> <li>• Productivity and Accountability</li> <li>• Leadership and Responsibility</li> </ul>
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Figure 1. Rubrics of 21st Century Skills (Partnership for 21st Century Learning, 2019)(NNBIA, 2015)

Unsurprisingly, the rubric designed by the federal commission focuses more holistically on whole life of the individual as a citizen, prioritizing skills such as “health, civic and environmental literacy”, whereas the rubric designed by the Business & Industry associates is more keyed in on specific workplace competencies. Both sets of rubrics emphasize the “human-based” skills that categorize the 21<sup>st</sup> century skills priorities such as social skills like teamwork and communication and respect, as well as intellectual skills like creativity and critical thinking. Meanwhile the domains traditionally thought of as the core competencies of educational institutions such as reading, writing, mathematics, and science take a smaller share of the priorities on the Business and Industry Associates rubric, and is only assumed on the Partnership for 21<sup>st</sup> Century Skills rubric.

### **3. Framing of ideas to teach 21st century skills in humanities & social sciences**

Many proponents of the 21<sup>st</sup> century skill education model argue that traditional education systems are out of touch with the modern era, and do not adequately prepare learners for the challenges that they will face in their lives either personally or professionally. The Brookings Institute has commissioned several studies looking at the practice of 21<sup>st</sup> century skills education in schools around the globe, and found the uptake concerningly low, noting that “to participate effectively in the increasingly complex societies and globalized economy that characterizes today’s world, students need to think critically, communicate effectively, collaborate with diverse peers, solve complex problems, adopt a global mindset, and engage with information and communications technology” (Vivekanandan, 2019). These advocates insist that teaching these skills is of primary importance, and that universities should adjust their curriculum to adapt to these new standards. A recent study conducted by the Association of American Colleges and Universities surveyed business executives and hiring managers across the United States, and found both groups reported a wide gap in the preparedness of recent college graduates on key outcomes needed to succeed in the business world, such as “critical thinking / analytical reasoning”, communication and ability to work independently and on teams (Hart Research Associates, 2018).

Despite the widespread interest in a newly focused skills-based education, many in higher education remain skeptical of the incorporation of these skills into the classroom. They argue that traditional humanities, arts, and social sciences offer vitally important societal perspectives, and that students intrinsically gain intellectual rewards by participating in the study and research. In a panel at the Aspen Institute in 2016, cultural critic Leon Wieseltier and then president of Harvard University Drew Faust argued that the study and appreciation of the humanities is a value unto itself, that “the purpose of the humanities is primarily utilitarian, it is not primarily to get a job” but to “cultivate the individual”(Gilbert, 2016). These scholars are concerned that the focus on skills based education inherently undermines the value of the humanities and their scholarship as being irrelevant.

### **4. Advocate for a middle ground – A Specific Proposal**

While it seems unlikely that universities will trade in time honored humanities and social science subjects in exchange for the new 21<sup>st</sup> century skills outright, there is a potential to bring in the practice of 21<sup>st</sup> century skills in a way that enhances the education of humanities and social science subjects. This could be done through using active learning principles to make classroom learning more interaction and group based, as well as through tweaking the assessment model of traditional humanities courses. Active learning is an approach to seeks to engage students as active participants in their knowledge acquisition, as opposed to passively receiving knowledge from the instructor (Meyers, 1993). Active learning activities

are often based around generating more discussion, group activities, and problem solving in order to get the students to engage more dynamically with the course material (Bonwell, 1991). A meta-analysis of 225 studies of active learning in the classroom showed the effectiveness of active learning techniques in increasing student performance and reducing failing grades across a wide variety of class types (Freeman et al, 2014).

Traditionally, most humanities and social sciences courses are either lecture based, where the professor presents a lecture during class time and students take notes, interspersed with some light discussion, or seminar based, in which the class is predominantly focused on discussing the course reading assignments. The final assessment of most courses is a research paper or other form of paper, in which the student presents an original idea for study and then pursues it with some guidance from the instructor. Most of the work the student will do for the class, reading, researching, writing, and note-taking, is a solo activity done with very little peer interaction and feedback. Students learn to work well independently, but much of the work in the professional world is done in a group or team setting, calling for a high degree of communication, empathy, patience, and teamwork skills. Indeed, even in the professional practice of the humanities and social sciences research is largely done in a collaborative or team-based manner, with many researchers working together on the same project. Arranging the class to prioritize siloed individual work is not done so because it is a superior and more authentic way to learn the content, it is done so because it is easier to assess, and because that is traditional way it has been taught. Team-based learning has been shown to be a powerful and effective teaching strategy according to a wide body of educational research, particularly in higher education (Michaelson, 2004)(Michaelson, 2011)(Koles, 2010). While incorporating team-based learning into higher education is certainly not new, and education experts have been advocating for its incorporation since the early 1980s, (Michaelson, 1982) few have framed it as a means to begin to bridge the gap in both incorporating and describing the workplace skills being developed in the classroom (Weise, 2018).

It must be observed that some of the 21<sup>st</sup> century skills like business and finance literacy or technology are not good fits for humanities and social science education, and would be better suited to other avenues of life and study to learn. However, there are many skills that could easily be integrated into the classroom in a way that produced a more authentic and engaging learning environment. Bringing 21<sup>st</sup> century skills into humanities and social science education could be as simple as altering the traditional assessments used in the classroom to bring in the principles of active learning, such as spending more course time on group-based projects and assignments, which could help improve educational outcomes and let the students practice building skills. While few higher educational faculty would or should be willing or capable of teaching 21<sup>st</sup> century skills in the classroom, reformulating the classroom to be more active could be a major step towards both educating students and preparing them for workplace environments.

Rather than a classroom of 20 students writing 20 research papers, an instructor could divide the students into writing teams and have them jointly produce larger research projects, or else figure out a way to weave their individual ideas together into a cohesive whole. Rather than assigning students to complete their readings each week on their own, students could be paired or put on reading teams and complete their readings on a shared annotatable platform where they could engage in discussion about the readings, ask questions, or clarify confusion. The simple transition from solo reading assignments or research papers to include as well group-based reading or research incorporates many new 21<sup>st</sup> century skills into the classroom, helping students practice working in teams, being a leader, adapting to each other’s ideas and workflows, and solving problems and being accountable to produce their work on time and to specifications. Even if a research project is focusing on history or anthropology, the experience of working together to produce the final product is more closely aligned with the professional workplace setting than individual work or assignments, and does not require any sacrifice of focus on the subject matter being taught. The student would have the opportunity to do individual work in a group context, to see how their own work fits into the broader context of the whole, as well as being held accountable to a high quality by their peers. This is emphasized in the table below, which lists the skills being practiced in solo assignments and group assignments, and the skills being practiced in each experience.

Solo Reading Assignment	Group Reading Assignments
<ul style="list-style-type: none"> <li>- Reading</li> <li>- Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>- Reading</li> <li>- Critical Thinking</li> <li>- Communication (Hazel, 2013)</li> <li>- Teamwork (Hazel, 2013)</li> <li>- Productivity &amp; Accountability (Powell, 2015)</li> <li>- Respect (Vasan, 2011)</li> </ul>
Solo Research Paper	Group Research Paper
<ul style="list-style-type: none"> <li>- Reading</li> <li>- Writing</li> <li>- Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>- Reading</li> <li>- Writing</li> <li>- Critical Thinking</li> <li>- Communication (Hazel, 2013)</li> <li>- Teamwork (Hazel, 2013)</li> <li>- Productivity &amp; Accountability (Powell, 2015)</li> <li>- Collaboration (Michaelson, 2004)</li> <li>- Leadership &amp; Responsibility (Walters, 2011)</li> <li>- Respect (Vasan, 2011)</li> <li>- Professionalism (Sibley, 2008)</li> </ul>

Figure 2. Comparison of skills practiced

While the professor would not explicitly be teaching these skills, the students would have the opportunity to be exposed to them and practice them in situations that replicate the ways they will be using them in their future work lives (Care, 2018). Professors could utilize peer grading techniques where students reported on each other's contributions across a rubric measuring communication, productivity, accountability, and so on which could be used as helpful feedback for the student as well as for formulating the students final grade. This new integration of skills practice into the classroom could also require spending more class time engaged in discussion or small group work, though lecture time could be supplemented with blended learning practices to move some of the lectures onto short videos or assignments which could be completed ahead of time. This could result in more active and engaging classes, which would tap into educational research showing that students learn material best and remember it longer when they actively participate with the material (Omelicheya, 2008)(Prince, 2004).

## **5. Conclusion**

Incorporating the practice and development of 21<sup>st</sup> century skills into the higher education humanities classroom does not necessarily require a great rethinking of the education model or content delivery. Rather, it could be as simple as encouraging faculty to use proven educational principles such as active learning and group-based learning into the classroom. This would allow students to practice some of the necessary skills such as communication, respect, teamwork, and problem solving into their learning of topics like history, anthropology, and political science. Embracing this model for integrating the practice of these skills into the classroom could be a win-win for both humanities educators and the students.

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