

From the Field: Practical Applications of Research

Teacher and Administrator Qualities that Facilitate Innovation in 21st Century Schools

By Kerri K. Titone, Ed.D.

Abstract

Each year, P21, a network of Battelle for Kids (formerly known as the Partnership for 21st Century Learning) recognizes exemplary programs throughout the country. These schools seek opportunities for students to explore local and global mindedness, deep learning, and authentic partnerships with private businesses and/or universities.

The results of this study enabled the researcher to identify common teaching methods in Exemplar Schools and strategies that administrators implemented in partnership with faculty to cultivate innovative schooling. The working definition of innovation for this study was Innovation: preparing students to work and live successfully in a global world with a mindset in which intelligence and talents are developed over time (Couros, 2015; Zhao, 2012).

This study informs current educational leaders, leadership preparation programs, and teacher preparation programs as to techniques they can adopt to foster innovation in the classroom. A framework and process for implementation of 21st Century skills and innovation were constructed as a result of this study.

Framework for this Study

Schools that implement 21st Century skills have gained recognition as exemplary models, as they prepare students for a globalized world. The network of Battelle for Kids recognizes exemplary programs and schools throughout the United States that implement 21st Century learning skills for every child. In these schools, there is a strong emphasis on science, technology, engineering and mathematical skills as well as innovation, global understanding and collaboration. These schools seek opportunities for local and global mindedness and deep learning, while establishing authentic partnerships with private businesses and/or universities. Quantitative and qualitative research methods were employed to identify the role teachers, school leaders, and administrators played in these innovative frameworks in their schools.

The purpose of this study was to investigate to what extent educational leadership, administration, and school

culture played a role in innovative teaching and frameworks by conducting a mixed methods analysis of Exemplar Schools that have been identified for their implementation of the Partnership for 21st Century Learning- P21 Framework. Through the process of analyzing teacher and administrator practices, the researcher determined how teachers and administrators contributed to the school's innovation.

While there are a variety of 21st Century skills identified by researchers such as George Couros, Linda Darling-Hammond, Tony Wagner, Yong Zhao, and the Partnership for 21st Century Learning- P21, innovation was the skill of focus and evaluation in this study. The working definition for innovation is the effort to prepare students to work and live successfully in a global world with a mindset in which intelligence and talents are developed over time (Couros, 2015; Zhao, 2012). It is imperative that institutions identify their definition of innovation at the onset of any strategic plans, goals, or initiatives, so as to avoid counter-productivity and confusion.

This mixed methods analysis examined the conditions that enabled innovative instruction, such as teacher perceptions, administrative leadership, and the surrounding educational community. The researcher evaluated teachers and leaders as facilitators of a 21st Century education through cross-case analysis. This study sought to identify the roles of teaching and leadership in innovative schools and determine qualities of teachers and administrators that were conducive to innovation in the classroom. The research questions were designed to identify the role teachers, educational leaders, administrators, and school culture played in innovative frameworks in order to provide the educational field with specific tools to incorporate 21st Century skills in the classroom, through leadership. The research questions for this study were:

1. By what process is **innovation facilitated in the classroom** in schools identified by the Partnership for 21st Century Learning- P21 as Exemplar Schools?
2. How does the instruction in the school and activities of students who attend reflect **globalization and depth**

of knowledge, in schools identified by the Partnership for 21st Century Learning- P21 as Exemplar Schools?

3. What are **administrator perceptions and preparedness** of evaluating 21st Century skills in the classroom, namely innovation, in schools identified by the Partnership for 21st Century Learning- P21 as Exemplar Schools?
4. To what extent does **school culture** influence innovation in the classroom in schools identified by the Partnership for 21st Century Learning- P21 as Exemplar Schools?

Data from multiple sources were collected, analyzed, and interpreted through the process of triangulation. In each case, descriptive statistics, content analysis, and coding for themes, patterns, and discrepancies were used to interpret and describe the survey and interview data. The researcher used quantitative and qualitative research methods to conduct a multiple-case study through surveys, interviews, and artifacts. A mixed method research design called upon the researcher to make a personal assessment and multi-dimensional analysis that fit the themes that were the focus of the study.

The conceptual framework identified interdependent teacher and leader attributes that provide the framework of a 21st Century school; these qualities included standards and variety of assessment, globalization and depth of knowledge, inventive thinking and curiosity, relevant and applied curriculum and instruction, professional conversation and communication, and a community of practice. The conceptual framework also identified a changing social, political, and economic climate surrounding teaching frameworks and education as a whole.

Innovation Facilitated in the Classroom

Data analysis of the classroom practice variable in innovative schools revealed patterns of support systems for students and cooperative learning. Innovating teaching practices in Exemplar Schools utilize problem-based learning, which is centered on authentic problems and work-based learning centered on internships in their instructional methods. Time for teachers to collaborate during the school day enhances the innovation in Exemplar Schools, as educators are able to design their instruction to students in a transdisciplinary and collaborative, yet individual approach.

The results of the study showed that regular discussion surrounding innovation and 21st Century skills, among teachers of a variety of disciplines, contributed to a process and presence of innovation in the classroom. Teachers reported that collaborative time was a factor that led to the facilitation and successful implementation of innovation in the classroom. However, administrators believed that teachers had more time for transdisciplinary collaboration and communication throughout the school day than teachers believed they had. It is possible, however, that teachers and administrators have different interpretations of collaboration throughout the school day.

Professional development that was consistent and ongoing was a contributing factor to innovation in the classroom. Opportunities for learning and continuing education were provided by schools and/or districts of P21 Exemplar Schools. Teachers may or may not participate in professional development on innovation and 21st Century skills, however prior initiatives in the Exemplar Schools studied required teacher participation during the school day.

Schools can facilitate and maximize professional development by offering meaningful opportunities for both teachers and students. While students in Exemplar Schools have a voice in the school community, teachers do not always feel the same way. Systems thinking, or the study of system structure and behavior, takes into account the complexity, interdependencies, change, and leverage within the organization and the ability to get maximum results with minimal expense and effort (Senge, P. M., Cambron-McCabe, N., Lucas, T., Smith, B., & Dutton, J. 2012).

Innovative schooling incorporates entrepreneurial learning, that is, an educational approach that aims to prepare children to live successfully, emphasizing the development of each child (Zhao, 2012). Entrepreneurial approaches assume that if a child's potential is developed, she will become valuable in her own way; this values what children would learn, rather than what they should learn. Innovative and entrepreneurial schooling prepare children to take on the responsibility to create jobs in the future (Zhao, 2012).

Globalization and Depth of Knowledge

The variable of globalization and depth of knowledge revealed patterns in student inquiry, teaching methods, and problem-based learning. Surrounding depth of knowledge, teachers in Exemplar Schools reported problem-, product-, or project-based learning in order to advance the depth of knowledge of students. Internships were a means of expanding depth of knowledge and experience for students in one of the Exemplar Schools. Students were required to demonstrate depth of knowledge, cultural sensitivity, and collaboration throughout the learning process through work-based internships, product-based learning, problem-based learning, and/or project-based learning. Teachers needed more training in the teaching and pacing of skills such as self-direction, collaboration, creativity, and innovation (Rotherham & Willingham, 2009).

When there was time for transdisciplinary dialogue and planning, collaborative instruction appeared to thrive. A growth mindset among teachers, including a natural curiosity and interest in best teaching practices, provided for incorporation of globalization and increased student depth of knowledge in P21 Exemplar Schools.

Exemplar Schools in New York State recognized that there was room for their programs to grow in the globalized realm, however their programs demonstrated implementation of regional, domestic, and international partnerships. In one school, students chose to study local

or global issues through problem based learning; students also watched CNN Student News daily at the beginning of the school day. In another Exemplar School, students were exposed to globalization through opportunities and partnerships sought by teachers.

The role of education has changed from industrial to modern training for students. Students in Exemplar Schools exhibit dispositions of globalization and depth of knowledge throughout the school year, in the classroom, and to authentic audiences. There were partnerships between Exemplar Schools and outside organizations that were established and maintained by the educational leaders. Administrator survey replies were indicative of a shift in educational needs. They reported that they supported the initiatives of their schools partly by preserving relationships outside of the schoolhouse. Globalization and depth of knowledge among administrators in Exemplar Schools seemed to be skills that the school community continued to work towards as facets of a larger vision. Administrators seemed to maintain a clear vision with focused steps for its purposeful implementation, yet they reserved time for school based issues and management.

Administrator Perceptions and Preparedness

Administrators in Exemplar Schools maintained their ability to evaluate innovation and 21st Century skills in the classroom through professional development provided by their school district or through partnerships with educational services and outside educational organizations. Educational leaders stated that they were prepared to evaluate innovation in the classroom through professional development and consistent research. Administrators read literature from research journals and sources such as the Partnership for 21st Century Schools, or P21, to seek validation for the teaching practices and professional development that they facilitated in their schools. Educational leaders reported that they worked to achieve what they collectively determined to be the best for children using sound educational policy, research, global understandings, and community support.

By way of strategic planning and reflective practices, educational leaders in P21 Exemplar Schools were able to implement a vision that was innovative and supportive of teachers and students. Administrators in Exemplar Schools expressed their ability to evaluate innovation and 21st Century skills in the classroom as a result of meaningful conversations and partnerships amongst all stakeholders tied to their institutions. Continuity and ongoing dialogues in the field, with working practitioners and professionals, higher education institutions, fellow administrators, teachers, students, and community members enabled administrators to maintain a holistic perception of educational needs and appropriate outcomes for their school. Networking and partnerships with higher education institutions, local/regional agencies and businesses ensured that administrators maintained an ongoing dialogue with field practitioners and authentic audiences that

helped to ensure that the curricula in their schools reflected current college and career demands.

School Culture

Patterns of partnerships and authentic audiences, a vision for student needs that was ever-changing and reflective of college and career based needs, and collaboration emerged as methods by which Exemplar Schools maintained innovation in the schooling that they provided. Teaching methods that incorporated problem-based learning reflected future-based competencies that our students are required to exhibit such as communication, collaboration, inquiry, analysis, and application of skills.

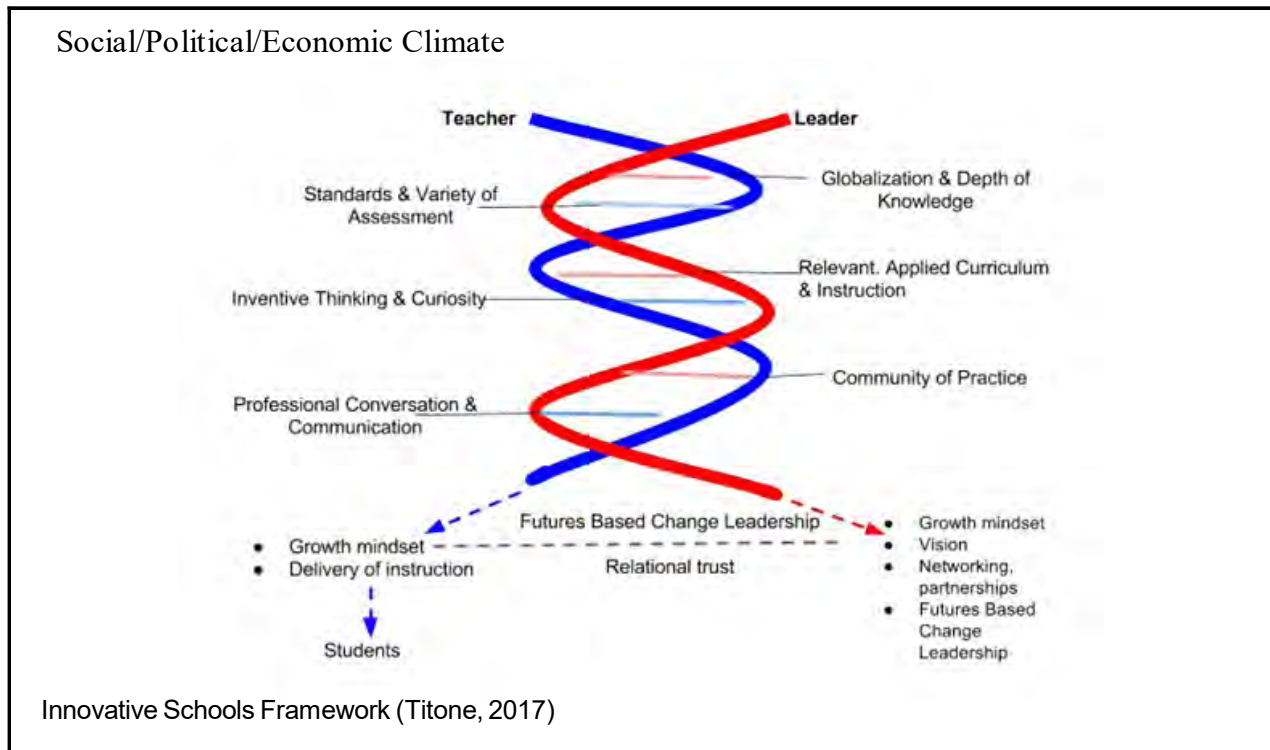
School culture that provided for an innovative climate was nurtured through communication, authentic audiences, and a vision that was driven by student needs. Educational leaders worked to maintain the professional development, innovation discussions, and an overall collaborative climate in their schools.

When administrators provided time for teachers to facilitate their professional growth and collaboration, the relationship among educators of all levels was strengthened. Relational trust assisted the process and increased risk taking in the classroom. Nurturing a culture of achievement occurred through meaningful dialogues, attention to teachers and students, support of initiatives and celebration of performance. Continuity in leadership, relational trust, networking and communication, common planning time, and challenging teaching approaches provided for an innovative school culture in Exemplar Schools.

This **Innovative Schools Framework** can be used as an action plan for the implementation of innovative schooling. In the beginning stages, it is essential for teachers and educational leaders to recognize the interconnected components that serve as the structure to support innovations.

In schools for the 21st Century, a growth mindset is the primary quality of teachers and administrators that facilitates innovation. Educators of all levels and experience must be open minded to the implementation of an action plan centered around a growth mindset. Teachers and administrators are asked to work together in the continuous exploration of modern and best teaching practices, to reflect on the progress and educational outcomes for students, and to be willing to take risks in the classroom.

The results of this study enabled the researcher to identify common teaching methods in Exemplar Schools. High standards and a variety of assessments were present in the schools studied. Through the usage of rubrics and checkpoints, teachers ensured that expectations and progress were clearly identified for students in Exemplar Schools. Through focused, strategic planning and instruction, children were able to collaborate and analyze, to problem solve, and to overcome challenges at the local and



global level. Even further, when administrators granted teachers the time to collaborate throughout the school day, their instruction became transdisciplinary. By facilitating time for common planning, teachers were able to co-develop meaningful instruction on a deeper level for students.

As one of the interviewed teachers stated, innovative schooling takes place "every day, in every way." When educators of all levels, disciplines, and experience are able and willing to collaborate towards a vision of globally relevant and challenging educational innovations, a culture of innovation can flourish. As a growth mindset for success among individual students takes hold, students will be encouraged and empowered to think differently through their approaches and find their passions sooner, thereby furthering an entrepreneurial-oriented future for themselves and their country. Although growth and success for individual students will vary, our prosperity will be measured as a whole, on a global level. Schools that maintain a culture in which innovation thrives will prepare their students for success.

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Kerri K. Titone, Ed.D., is the Teacher Leader for the International Diploma Programme and Advanced Placement courses at North Shore High School in Long Island, New York.