The Grosse Pointe Public School System

Pilot Program Proposal:

Innovative Studies Capstone

The Final Course in the Innovative Studies (I^3) Program.

Proposed by Sean McCarroll & Micki Buksar-Cecil
Grosse Pointe North High School
Grosse Pointe South High School
October 2016

Faculty in Agreement:
Kate Murray
Moussa Hamka
Michelle Davis

Executive Summary: Rationale and Program Overview

Innovative Studies, a high school program approved by the Board of Education in 2015 for both North and South High Schools, currently consists of a series of three courses that are designed to be taken in sequential order: Innovative Technology (iTech), Innovative Design (iDesign), and Innovative Creation (iCreate). Throughout the progression of these courses, which are designed to create a spiraling curriculum, students develop and refine the skills outlined by the Partnership for 21st Century Skills and engage in both the theoretical and practical applications of IDEO's Design Thinking for Innovation. Collectively, the goal of these courses is to teach students how to think critically and problem solve in our information-rich world, identify opportunities for improving local, regional, or global processes, and translate their knowledge of the core academic content areas into practical and tangible solutions to 21st Century challenges.

Innovative Technology, the entry level course for the program, teaches students about how technology can serve as a problem solving tool while providing them the opportunity to acquire the 21st Century Skills through project based learning. Innovative Design, the second course in the program, teaches students about the process of innovation using Design Thinking strategies and engages them in identifying challenges that people face in the 21st Century. Innovative Creation, the third course in the sequence, runs as an independent study in which students work with a content-specific mentor to identify, design, and produce a solution to a challenge of their choosing. Students enrolled in Innovative Creation are required to draw on one of their other academic classes, which serves as the conduit through which they base their work in iCreate. At the conclusion of Innovative Creation, students choosing to pursue the Innovative Studies certificate will be required to take a "Capstone" course, being proposed, in which they will push their innovation into the real world. To verify how they implemented their innovation, certificate candidates must update their I^3 portfolio with a reflective piece and evidence that details their innovation implementation. Students that successfully complete the program sequence with a B- average or better will be granted a certificate in Innovative Studies upon graduation, which will make them more marketable to colleges and employers.

The Innovative Studies program is modeled off of several collegiate programs in Innovation and Design Management, including Stanford's Institute of Design (d.school), MIT's D-Lab and Media Lab, Olin College (Wagner, 2012, p. 46-52, 72-78, 157-190), "the Pratt Institute, Art Center College of Design, the Center for Creative Studies, the Cleveland Institute of Art, the Rhode Island School of Design, Carnegie Tech (now Carnegie Mellon), and the University of Cincinnati" (Lockwood, 2010, p. 7). All of these programs were designed to provide students with training in the principles of Design Thinking and innovative thinking, and have been called "home" by many world-renowned innovators such as Kirk Phelps, product manager for the first iPhone, and Dean Kamen, founder of FIRST Robotics. All of these institutions and programs have given inspiration to many innovative high school programs such as High Tech High and the New Tech Network of charters. Innovative Studies seeks to bring elements of these courses into the Grosse Pointe Public School System.

This program is currently available to any student at Grosse Pointe North and South High Schools as enrollment allows. Both high schools are running iTech and iDesign in the 2016-2017 school year, and are seeking to add the fourth level course (the "Capstone") so students can begin enrolling in the 2017-2018 school year. This course would be open for students in the spring term, as the third level must be completed before enrolling. Enrollment in the 4th level Capstone is expected to be small in its first year due to scheduling constraints, but is expected to increase in subsequent semester as more students complete the third level (iCreate).

Program Overview, Condensed

Credits: 2 Cumulative (.5 per course)

Duration: 4 Semesters

Expected Launch: Levels 1-3 (iTech, iDesign, iCreate) - 2016-2017 (Currently Running)
                      Program Level 4 (iCap) & Completion - 2017-2018

Executive Summary: Overview of Courses

This proposal is for the fourth level of the iStudies program. The Innovative Studies certificate will be conferred upon students that successfully complete the following courses (including the Capstone) with a minimum of a B- average in *each* course.

Level 1

Innovative Technology (iTech)
.5 Credits, Semester Course
Will address many computer competencies and skills

Level 2

Innovative Design (iDesign)
.5 Credits, Semester Course
Satisfies Applied Art Requirement
Prerequisite: B- or higher in iTech

Level 3

Innovative Creation (iCreate)
.5 Credits, Semester Course (Independent Study)
Prerequisite: B- or higher in iDesign

Level 4 (to earn Certificate)

Innovative Studies Capstone
.5 Credits, Semester Course (Independent Study)

Students must successfully complete a personalized independent study in which they will learn about how to implement their innovation, and update their I[3] portfolio with a reflective piece and evidence that details how they implemented their iCreate innovation.

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Course Proposal: Innovative Studies Capstone (iCap)

Course Overview

Credits: 0.5

Duration: Semester

This course is being proposed for **pilot** at GP North & South High Schools

Expected Launch: Fall Term, 2017-2018 School Year

Program of Studies Description

The Innovative Studies Capstone (iCap) is the fourth and final level of the iStudies program. In this course, students will work with both a teacher mentor and a community partner to launch their innovative design from iCreate to the public. Upon completion of this course, students will have launched their own startup or public service organization and will be certified by the district in Innovative Design & Practice.

Course Description (In-Depth)

The Innovative Studies Capstone (iCap) is a semester elective that pushes students to make their creations from the program public by following the plan they devised in iCreate. Students that enroll in this course will be placed in a personalized independent study that reflects the purpose of their innovation and the goals they set in iCreate. In this course, students will be expected to work with a community partner that aligns with and can support the advancement of their innovative idea(s), and will be held to specific benchmarks throughout the semester that ensure they stay on track for launching their idea. By the end of the semester, students will have either launched or be ready to launch (pending patent approvals, if applicable) their innovation into the marketplace and/or community.

To be considered "program completers", students in this course will be required to not only launch their innovation, but also reflect on their overall iStudies experience. As part of their reflection, students will continue to update their I^3 portfolio with information about the progress of their launch and the innovation process in general. Students that successfully finish both this course and the program as a whole will have utilized modern technologies to create a prototype solution for a challenging real-world problem of their choosing, and take actions to implement their idea in the greater community.

Rationale and Philosophy

Educational researcher and visionary Tony Wagner (2010) describes in his book *The Global Achievement Gap* that since the 1800s "schools haven't changed; the world has" (p. xxi). With the constantly evolving nature of technology, immediate access to an over-abundance of information, and constant change in the nature of work, students in the 21st Century face an

unprecedented and unique set of challenges. As society progresses further into a knowledge, rather than an industrial, economy, it becomes ever more critical for high schools to break their industrial approach to education and equip their students with the skills needed for success in increasingly demanding collegiate and work environments. Wagner (2010), as well as many other educational researchers and leaders, argues that in order to survive in "today's highly competitive global 'knowledge economy,' *all students need new skills* for college, careers, and citizenship" (p. xxi). Trilling and Fadel (2009) further explain that in order to be productive contributors to society and the workplace in the 21st century, students must "be able to quickly learn the core content of a field of knowledge while also mastering a broad portfolio of essential learning, innovation, technology, and career skills needed for work and life" (p. 16).

Innovative Studies help prepare students within the GPPSS to become productive members of society by equipping them with the modern skills necessary for success in the 21st Century. Each course in this program builds off the previous and pushes students to extend their skills to become better collaborators, critical thinkers, and creative problem-solvers. By the end of the third level (iCreate), students apply what they learned about the 21st Century Schools and the Design Thinking process to a real-world challenge of their choosing, and create a polished prototype of a unique idea that improves the way their end user lives. It is the intention of this program to require students to then bring that idea to the community and society at large, so that the intended end users can benefit from the students' innovative designs. Providing students with the structure needed to successfully launch their prototypes is critical, however it also takes a significant amount of time to coordinate the development of a business plan, work with key community partners, acquire necessary funding, and create promotional campaigns around the launch of the idea. Therefore, it is necessary to offer a fourth level course, run as an independent study, to provide students with this opportunity.

Enrollment
Because students must work through levels 1-3 of the Innovative Studies program before enrolling in the Capstone course, and due to the restrictions placed on students' elective choices, expected enrollment for this course is relatively low. It is reasonable to assume that 5-10 students will enroll in the initial semester offering of this course, with room for growth and expansion in future school years. This course, therefore, would most likely run parallel to another course in the iStudies program.

Quality Standards, Benchmarks, and Assessments
Students who enroll in this course will placed on a personalized curriculum anchored in the course benchmarks. Students will continue to refine and implement their 21st Century Skill set as outlined by the Partnership for 21st Century Schools (2015).

Students in iCap will be required to demonstrate progress in the following benchmarks as they near the public launch of their innovation:

1. Identify and partner with a community member that aligns with the purpose/goals of their innovation,
2. Develop clear goals and objectives on the application of their innovation,
3. Create an actionable plan for carrying their idea into the community,
4. If applicable, develop a business or organizational model to support the promotion of their innovation,
5. Determine and execute a plan for obtaining necessary start up funding,
6. If applicable, begin the process of obtaining a copyright, trademark, and/or patent,
7. Organize and publish a promotional plan to promote their innovation,
8. Plan, coordinate, and execute a "launch event" that raises awareness of the student's innovation and its public availability

Program completion will be assessed by the faculty members within the Innovative Studies program. Students who successfully complete the program must:

1. Successfully complete all three Innovative Studies courses with a B- average or higher,
2. Present written reflections of their experiences in iTech, iDesign, and iCreate in an I^3 digital portfolio,
3. Demonstrate mastery of the 21st Century Skills (all 9 domains) through their I^3 digital portfolio,
4. Successfully complete (with a B- average or higher) the Innovative Studies Capstone in which they will begin to implement their innovative idea from iCreate, and
5. Produce a reflective piece that details their experiences in Innovative Studies and the success they achieved through the end of the program.

Resources & Technology Integration

Course management for iCap will be done primarily through learning management systems (LMS) such as Google Classroom, through which students will organize documentation of their progress toward a product/idea launch. Additionally, students will continue to update their I^3 portfolio to reflect on the progress of their innovation launch and the innovation process in general. Beyond these core requirements, students in the Capstone will also utilize the technologies that are relevant to the launch of their innovation, potentially including (but not limited to) web software, financial tracking/accounting software, social media, graphic design/publication software, etc. Communication tools will be critical in this course as students will need to maintain constant communication with their project mentor, end-users, and appropriate community members.

Differentiation

The nature of this course offers differentiated and personalized learning opportunities based on the specific needs, interests, and goals of each individual student. Differentiation will be determined based on goal-setting meetings with faculty advisors and individual consultations with students. Scaffolding and support services will vary based on student interests and what they choose to pursue as a result of their iCreate experience. Throughout this course, students will have flexible due dates as long as they reach benchmarks within an appropriate amount of time. Program requirements can also be scaffolded through action plans that are agreed upon by the individual student and faculty advisor.

Costs

Costs associated with this course are low, as students will be expected to cover the costs of their own launch. As the capstone for the entire Innovative Studies program, however, a modest budget of **$250** is requested to help cover the cost of certificates, general program/school supplies, and launch-event expenses that might arise over the course of the semester.

Impact

Overall, it is expected that this course will provide students with a valuable opportunity to engage in real-world application of the skills and content they acquire throughout their education in the Grosse Pointe Public Schools. By making their innovation public, students are held to higher levels of accountability for their work than they would otherwise in a traditional classroom. They also have the unique opportunity to begin marketing their innovation and either launch a functioning nonprofit or for-profit business that they can grow beyond their time in the Grosse Pointe Public Schools. Regardless of the direction they pursue, this course will provide students with a public record of their work that can be permanently attached to their resume, portfolio, and footprint as they move into college and/or the workforce. It will serve as a showpiece of the 21st Century Skills they acquired and refined throughout their time in the program, which can additionally help them with college acceptance and/or corporate recruitment.

References

Framework for 21st Century Learning - P21. Retrieved April 23, 2015, from

http://www.p21.org/our-work/p21-framework

Lockwood, T. (2010). *Design thinking integrating innovation, customer experience and brand value*. New York, NY: Allworth Press.

Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. San Francisco: Jossey-Bass.

Wagner, T. (2010). *The global achievement gap: Why even our best schools don't teach the new survival skills our children need - and what we can do about it*. New York, NY: Basic Books.

Wagner, T., & Compton, R. A. (2012). *Creating innovators: The making of young people who will change the world*. New York, NY: Scribner.