Using *Genius Hour* to Add Passion to Teacher Candidates’ Technologically Enhanced Teaching

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**Abstract**

*Genius Hour* is a classroom-based adaptation of Google’s ‘20 Percent Time,’ in which the company (Google) allowed its employees to work on individual projects of passion for a short period of time each day, resulting in increased productivity, creativity, and motivation to innovate. This paper describes how the instructors of a technology methods course in one teacher education program used *Genius Hour* as the structure to support the building of Technological Pedagogical and Content Knowledge (TPACK) in teacher candidates, while personalizing the teacher candidates’ experiences as they worked through course material. After participating in the *Genius Hour* experience, teacher candidates were surveyed regarding their perceptions of the experience. Findings from the data revealed three themes: (1) positive perceptions of learning through the *Genius Hour* experience, (2) promotion of creativity and mental well-being through participation in *Genius Hour*, and (3) an increased understanding of teaching with technology.

**Introduction**

Learning in the digital society involves not only understanding how to use the technology tools we access daily for informal and formal learning processes (Pontefract, 2011), but developing digital learning competencies – those skills, competencies, and knowledge for successfully navigating the “ever-changing, technology-driven, and globally connected world” (Howell & O’Donnell, 2017, p. 7). In Ontario schools, those skills, competencies, and knowledge are described as the following six elements: critical thinking and problem solving, innovation, creativity and entrepreneurship, a growth mindset that promotes learning to learn (self-aware & self-directed learning), collaboration, communication, and global citizenship (Ontario Ministry of Education [OME], 2016). If, as Howell and O’Donnell (2017) suggest, the goal of education is to prepare K-12 students to be fluent in these competencies, then the need for teachers to be proficient at integrating technology into the learning environments they design
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for their students has never been greater, and ensuring that teacher candidates leave teacher education programs prepared to create meaningful digital learning experiences, becomes an urgent challenge for teacher educators.

Most teacher education programs include stand-alone technology methods courses that often provide teacher candidates with their first exposure to the pedagogical aspects of teaching with technology. Additionally, teacher educators may experience digital teaching within subject area methods courses, connecting content with the digital experiences appropriate for that subject area (Voogt, Fisser, Pareja Roblin, Tondeur, & van Braak, 2013). The purpose of this paper is to describe the investigation of how the instructors for the technology methods course of one Ontario university teacher education program adapted the technology course to revolve around the use of inquiry and problem-based learning, specifically the use of *Genius Hour*, to provide experiences with the six 21st Century competencies outlined in the Ontario Ministry of Education position paper on digital learning, *Towards Defining 21st Century Competencies for Ontario: 21st Century Competencies* (OME, 2016).

**Genius Hour in Teacher Education**

*Genius Hour* is a classroom-based adaptation of Google’s ‘20 Percent Time,’ in which the company (Google) allowed its employees to work on individual projects of passion for a short period of time each day, in hopes that the employees will be more motivated, creative, and productive within their regular work expectations (Walker, 2011). As well, engaging individuals in creative projects that facilitate interest and passion encourages a sense of self-esteem, improvement in mood, increased interactions with others and networking – all promoting a sense of mental well-being (Leckey, 2011; Reuer, 2017).

In the classroom, the provision of exploration time on projects of passion – similar to Google’s use of ‘20 Percent Time’ – is paired with inquiry and problem-based learning. This allows K-12 students to focus on pursuing learning related to their interests and passions, so that “students are no longer passive recipients of knowledge; they are decision makers about the nature and structure of their own learning” (Barell, 2010, pp. 177, 178–79). The ability to use inquiry and problem-based learning is one of the six 21st Century competencies recommended for K-12 students in Ontario schools, and the Ontario Ministry of Education (2016) suggests that the collaborative nature of inquiry projects is supportive of a learner’s ability to become
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“independent, self-directed learners” (p. 25). Katrein (2016) further suggests that these types of learning environments are conducive to enhancing creativity while fostering an intrinsic motivation that might develop and spread to other subject areas. *Genius Hour* has been used successfully in elementary classrooms in Ontario as a method for developing the 21st Century competencies (see the story of one example at: https://www.teachontario.ca/community/explore/teachontario-talks/projects/genius-hour).

**The Project: Genius Hour and the Teaching in the Digital Age technology methods course**

*Genius Hour* was embedded into the foundational course design of *Teaching in the Digital Age* (the technology methods course) which is designed to promote the building of Technological Pedagogical and Content Knowledge, or TPACK – the knowledge a teacher needs to teach with technology (Mishra & Koehler, 2006). Mishra and Koehler (2006) based their TPACK model on Shulman’s (1986, 1987) theory of teacher knowledge, which describes how teacher knowledge consists of multiple types of knowledge specifically related to the act of teaching (e.g., pedagogical content knowledge, knowledge of learners and their characteristics, and knowledge of educational contexts). However, they extended the model by explaining that successful teaching with technology is situated within pedagogical content knowledge (PCK), related to “that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding” (Shulman, 1987, p. 8). In the technology methods course, teacher candidates develop their TPACK knowledge by completing in-class activities in which they create different artifacts and out-of-class activities that build background knowledge.
Therefore, two hours of each three-hour weekly class session was designed to include four experiences that have been shown to effectively build TPACK knowledge in teacher candidates: (1) instructors model project-building activities and show how to teach K-12 students to create artifacts that share *Genius Hour* progress; (2) instructors engage teacher candidates in pedagogic dialogue to fully develop their understanding of the different teaching strategies that are incorporated during the planning, implementation and assessment of those projects; (3) instructors provide time for teacher candidates to learn how to use the technology to build the artifact for sharing progress of their *Genius Hour* research; and (4) instructors provide time for teacher candidates to share that artifact in a portfolio blog (Figg & Jaipal, 2013; Jaipal-Jamani & Figg, 2015). These artifacts include small technical projects that highlight the *Genius Hour* research in different ways. For example, the artifacts include:

- a Google slideshow ‘pitch’ of the proposed research project,
- an iMovie trailer that introduces the research project to classmates,
- a TED Talk movie that highlights what was learned during the research,
- a timeline for completion of their project, and

*Figure 1. Technological Pedagogical and Content Knowledge* (Mishra & Koehler, 2006).
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- a learning object (created specifically for the *Genius Hour* using one of a dozen Web 2.0 tools for the purpose of adding interactivity to their *Genius Hour* project).

Out-of-class activities used a flipped learning environment in which teacher candidates engaged in an online gamified learning, called *The Quest*, to learn background technological knowledge (Figg & Jaipal-Jamani, 2015). *The Quest* introduces teacher candidates to background knowledge about teaching with technology, including topics such as cyber safety, digital citizenship, and innovative teaching strategies for teaching with technology. Teacher candidates earn badges for completing various online modules in *The Quest* as well as completing the different artifacts for their *Genius Hour* project. The *Genius Hour* badge is earned when candidates build an educational blog to house posts, tweets, and, of course, the final *Genius Hour* project. Two other main badges are earned, including the Order of TPACK badge, which assesses professionalism, collaboration, and participation in the course material, and the Cup of Wisdom badge, where teacher candidates earn badges by completing weekly tasks that enhance background knowledge areas such as coding, gamification, digital identity, and project-based learning.

For higher education instruction, such as our technology methods course, *Genius Hour* is designed to create a space within instruction where learners have an opportunity to go beyond the expected learning material, giving space for thinking that creates questions and answers to some of the world’s current and future problems, or provides deeper learning and personalization of learning for topics of passion (Howell & O’Donnell, 2017). The three principles of *Genius Hour* are simple: (1) the project must be driven by a high-level question; (2) the question must be researched (whether through traditional or experiential methods); and (3) the project must be shared with others (Juliani, 2015). Therefore, teacher candidates are provided with approximately one hour of the weekly three-hour class session for exploring and studying their topics of passion. In a similar fashion to Coke (2018) and Juliani (2015), the instructors for the technology course have the students begin the *Genius Hour* process by brainstorming their many passions and determining which passion they want to become the focus of their research. They then formulate a research question to guide their future inquiry. Teacher candidates also choose the final outcome and product of their investigation (creating objects, ideas, experiments, or
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inventions) as well as the final format for presenting the outcome of their research – as a presentation, video, Powtoon, chart, pictorial essay, construction, etc.

For this project, the five instructors for *Teaching in the Digital Age* decided to incorporate the concept of *Genius Hour* within all sections of the course. Beginning with one instructor piloting the *Genius Hour* project, the instructors worked collaboratively to redesign all versions of the course (primary, junior, intermediate, and senior level) so that *Genius Hour* was seamlessly integrated within a gamified learning environment and supported the development of TPACK knowledge. Each week, teacher candidates were introduced to technologically enhanced projects that were created to explain various aspects and progress of the *Genius Hour* research completed by each teacher candidate. These *Genius Hour* passion projects were displayed on an individual educational blog, which also served as a portfolio where multiple course assignments were housed – all demonstrating their pedagogical understanding of teaching with technology and their technical knowledge of using technology to plan and present work. Using this strategy, the instructors hoped the teacher candidates would become more passionate about their learning, while developing the necessary technological, pedagogical, and content knowledge and skills.

**The Study**

The purpose of this study was to investigate the perceptions of the teacher candidates about their participation in *Genius Hour* during their technology methods course. Specifically, this study sought to understand the ways in which teacher candidates’ participation in *Genius Hour* influenced their learning during the course. Therefore, the research question that drove the study was: How does participating in *Genius Hour* influence pedagogical knowledge and understanding of how to teach with technology? The study used qualitative research methods, and data sources included: (1) a questionnaire completed by 35 teacher candidates and three instructors on the process of participating in *Genius Hour*; (2) 35 teacher candidate reflections collected via the *Genius Hour* portfolios; (3) 35 completed *Genius Hour* portfolios shared by teacher candidate participants; and (4) four teacher candidate email interviews. The teacher candidates were enrolled in either the 6-week consecutive teacher education course or the 10-week concurrent teacher education course. Axial coding was used to unitize the data from which key descriptor phrases were identified. These key descriptor phrases were aggregated and
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categorized into general coding categories, from which the three themes described in the findings emerged.

**Findings**

Overall, the findings highlight a positive perception of teacher candidates for participating in the *Genius Hour* project. Three main themes emerged from the data analysis process: (1) factors promoting positive perceptions of learning through the *Genius Hour* experience; (2) promotion of creativity and mental well-being through participation in *Genius Hour*; and (3) an increased understanding of teaching with technology.

**Factors Promoting Positive Perceptions of Learning through the *Genius Hour* Experience**

Of the 35 teacher candidates who answered the questionnaire and submitted their *Genius Hour* blogs for consideration, over 50% of the candidates expressed a sense of enjoyment about working and learning through *Genius Hour* and appreciated the experience. When asked to elaborate on their perceptions of their participation in *Genius Hour*, some factors that contributed to the overall positive teacher candidate responses were:

1. *Genius Hour* allowed for the time to focus on something of personal interest. The structure of the course, in which teacher candidates were given an hour in each class session to use the time as they needed to complete their *Genius Hour* project, was perceived as supportive in developing the perspective that learning for personal interest was important.

2. *Genius Hour* allowed teacher candidates to discover the process of learning through modelling and exploration. In survey responses, five teacher candidates praised the support of the instructors who modeled the expected learning outcome – often by completing their own *Genius Hour* projects. One teacher candidate commented that the “tech instruction…gave me an example about how to let students discover a process through [their own] modelling and exploration.” Another candidate mentioned that because of the instruction received, “I have learned a tremendous amount about technology and how to utilize it.”

3. *Genius Hour* could be used as an online space to watch learning flourish in the teacher candidate’s own students. Although this finding appeared in only a small number of
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candidate surveys, this is a unique perspective of the experience. One candidate mentioned “the idea is super cool and I would love to do it with students,” while another said, “I feel like I would want to use *Genius Hour* once I start teaching my own class. In fact, I’ve already discussed with my associate teacher the possibility of implementing it into my placement classroom.” It was not mandatory for candidates to use *Genius Hour* in their respective placements; however, some chose to use *Genius Hour* as an instructional tool to enhance the learning of their own students.

4. *Genius Hour* gave 51% of the teacher candidates incentive to engage meaningfully in what they were doing, with a deeper purpose to the learning. The ability to learn for a deeper purpose or meaning was a frequent statement throughout the surveys and interviews, as teacher candidates felt as though their learning was meaningful to them and connected solely with their individual interests. A teacher candidate explained that “because *Genius Hour* was something that was personally interesting to me…I was more engaged and willing to work on it and put effort into my learning.” Another stated that *Genius Hour* “gave me the drive to actually put some effort in what I was doing.” When asked *how does participating in Genius Hour influence your pedagogical knowledge and understanding of how to teach with technology?*, one teacher candidate expressed that “participating in *Genius Hour* influences pedagogical knowledge and understanding how to teach with technology by creating confidence and comfort with using technology and also playing around with what works and doesn’t work.”

5. The *Genius Hour* blog platform allowed teacher candidates to track and submit work in an engaging way that could benefit their professional online digital footprint. Teacher candidates were expected to submit work using their blogs, which doubled as a showcase tool for job applications and interviews. The blog encapsulated the skills, knowledge, and teaching philosophy the teacher candidates had developed within the course and overall program. Some teacher candidates gave permission for their blogs to be featured and are listed below:

- http://msdegrootn.blogspot.com/
- http://divineeducation.blogspot.com/
- http://misscsusin.blogspot.com/
- https://nickcottones.blogspot.com/
Promotion of Creativity and Mental Well-being through *Genius Hour*

Living in a digital society means having the knowledge to use technologies in daily lives in ways that focus on deep learning, creativity, processing, and communication, rather than solely on building traditional content knowledge (Jaipal-Jamani & Figg, 2015). Participants described the *Genius Hour* as a learning activity that allowed them to grow their digital living skill set through opportunities to: (1) make decisions about what to research and the outcome/resulting product of that research; (2) document their growth and measure their own understandings and progress; (3) create a unique visual product from their classes; and (4) integrate learning through project-based models. Engagement in this style of work required teacher candidates to actively develop those 21st century competencies described by OME (2016), including the ability to self-regulate learning, work collaboratively to promote learning, and communicate with others through multiple technologies and in multiple ways. The experience also provided teacher candidates with opportunities to creatively engage with the process of learning, planning, and developing content knowledge, while engaged in a project on a self-chosen passion topic. Of the 35 teacher candidates, 65% believed that working on *Genius Hour* within the course gave them a stronger sense of creativity and productivity within the rest of their program – one of the key features of the Google theory (Juliani, 2015). The increase in self-esteem and confidence from completing the multiple *Genius Hour* projects, and sharing with colleagues, family members, and through their portfolio was also described by these participants. Leckey (2011) suggests that participation in creative projects, where self-esteem and an increase in social interactions about the projects, promotes a sense of satisfaction and well-being.

Increased Understanding of the Pedagogy of Teaching with Technology

The goal of the *Teaching in the Digital Age* course is to help teacher candidates build their knowledge of 21st century classrooms (developing their TPACK) and inquiry/project-based pedagogy. The teacher candidates explained that the *Genius Hour* project and the structure of the course itself provided the candidates with:

1. Knowledge about gamifying units in placement
2. Knowledge about creating student-centered approaches using technology
3. Technical skills using video editing to create webinars and informational videos for students to conduct blended-learning
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4. Content knowledge about how to choose purposeful technology tools to include in lessons, and
5. The confidence to explore and create units with technology that they may never have done before.

With a plethora of new skills, teacher candidates were able to confidently incorporate useful technology within their placement classrooms, a skill that Howell and O’Donnell (2017) deem as necessary in order to produce 21st century requirements such as, “support[ing] instruction and self-directed study; meet[ing] students’ diverse needs, interests, learning styles, and abilities; be[ing] up-to-date, relevant, credible, and reliable; [and] align[ing] with curriculum expectations/outcomes” (p. 21). The findings also indicated that the candidates expressed an enthusiasm for continuing to explore teaching with technology in their future classrooms.

**Instructor Perspectives about *Genius Hour***

The instructor responses within the study were also coded into categories, providing additional perspectives of the *Genius Hour* experience in instruction. The instructors described explicit connections between the *Genius Hour* project and the improvement of teacher candidate interest and participation within the overall course concepts and work expectations. One instructor stated that the development of the course was instrumental in the quality of teacher candidate outcomes, “since the curriculum is primarily focused on using webtools to document learning, the freedom to focus that learning on something of interest to teacher candidates was a great match.” Another instructor insisted that the structure of the course promoted stronger student-inquiry skills development. A third instructor stated that with the addition of *Genius Hour*, the teacher candidates “were more passionate about what they were doing and proud of the work they were accomplishing which produced better results all around.” Several concurrent teacher candidates also explained that the *Genius Hour* project was closely linked with the weekly tasks of the course, allowing them to complete their work while pursuing their passion project. An instructor supported this idea, stating the “student-inquiry framework was perfect for delivering the technological education curriculum.”

Instructors additionally attributed an improvement in quality of student work with regards to the depth in weekly reflections and multiple connections made about how the research was influencing learning to the *Genius Hour* project. Like the teacher candidates, instructors were
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able to see the deep connections being made by each student as they explored their topic. One stated, “teacher candidates love the *Genius Hour* project and end up learning a great deal about themselves as well as ways to effectively integrate technology.” Marking became more holistic and focused on teacher candidates’ learning process, while incorporating skill development.

A final observation by the instructors was that, although the technology instructors had agency to adjust instruction within the lecture design through personalization, they have always sought to create consistent experiences for all teacher candidates while preventing the technology courses from becoming tired, rote, and focused on the tools, rather than the pedagogy. *Genius Hour* became the way to embed technological and pedagogical skills and knowledge into a learning activity that promoted a strong sense of excitement and depth of learning, while creating something personal that could be taken forward into future teaching placements, and ultimately, careers – including a ‘portfolio of expertise’ from the *Genius Hour* project to take into school board interviews.

**Considerations**

The findings of this study indicated a connection between the enjoyment of the *Genius Hour* project and the length of time the course runs. Teacher candidates noted how much they enjoyed the lack of limitations placed on them for the *Genius Hour* project, feeling as though they could explore anything they desired and showcase their knowledge in multiple creative outlets on the blog. As some Teacher Education courses are 6-weeks and others are 10-weeks, the data presents a connection between a more positive experience with the *Genius Hour* project in the 10-week course. Of the teacher candidates that responded to the questionnaire, over 50% of the 6-week consecutive teacher candidates explained that they did not experience a change in their creativity or productivity because they were rushed to complete projects in all of their courses, not just the *Genius Hour* project. As mentioned previously, candidates were given the freedom to use an hour of the course lecture to work on *Genius Hour*. Teacher candidates in the six-week course expressed feeling stressed out with the workload of the program, and were observed using the hour set aside for *Genius Hour* completing coursework for other courses.

Selecting a *Genius Hour* question that was too large to complete in the allotted six weeks of the course may also have contributed to a less-than-satisfactory feeling, even though instructors reviewed the topics and made suggestions. The teacher candidates were frequently
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advised by instructors that, for the projects to be successful, it was important to create goal-oriented, achievable timelines throughout the course, and additional reminders that teacher candidates could create timelines past the six weeks, extending into personal time after the course, and focusing this *Genius Hour* project on a piece of the overall topic. Matteson (2016) acknowledges that instructors and teachers need to be supportive for these students, providing them with additional guidance in creating realistic timelines and organizing the workload under the *Genius Hour* expectations. On the other hand, the concurrent teacher candidates within the ten-week course found the project to be fulfilling and satisfying, often describing the project as something to which they looked forward.

**Conclusions**

It is important to note that Teacher Education programs in Ontario are competitive and academically challenging, while engaging candidates in practical and theoretical understandings of teaching. As teacher candidates maneuver through new learning scenarios, it is essential for them to also develop a balance, by taking time in their busy schedules to complete projects or activities that support their passions, providing a measure of mental, emotional and physical well-being. This study described how participating in *Genius Hour* influenced pedagogical knowledge and understanding of how to teach with technology in three ways: (1) promoting positive perceptions of learning within the *Genius Hour* environment; (2) engaging creatively in projects of passion that support personal and mental well-being; and (3) increasing understanding of pedagogical strategies for teaching with technology. *Genius Hour* allowed teacher candidates to complete a passion project that contributed to their practical and theoretical teaching knowledge, while obtaining a grade towards their degree and supporting their mental well-being. In order to encourage technological confidence and criticality within future students, teacher candidates need to be exposed to innovative methods that continually seek to push the limits of learning. *Genius Hour* has been deemed beneficial by teacher candidates and instructors as fulfilling this quality in our *Teaching in the Digital Age* course.

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candidates. Her research interests are widespread and include, Genius Hour as a teaching methodology, social media use and self-concept, technologies supporting newcomers to Canada, and international service-learning.

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**References**


Pontefract, D. (2011). *Time’s up – learning will forever be part formal, part informal and part*
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