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Genius Hour Strategy

Mathawi Alqahtani

Abstract

This article explores how the integration of Genius Hour could help develop students' thinking skills, and increase their research and discovery skills. A review of the literature found students have different abilities, interests, and motivations. Genius Hour is one effective differentiated strategy that teachers can use to meet students' individual needs. The researcher found that Genius Hour allows students to learn new things, experiment with ideas, and develop many required skills. In conclusion, the teacher will implement the Genius Hour strategy in her math classroom to support students in developing essential skills and discovering their passions in a self-directed and enthusiastic way. The teacher will work with two classes as the treatment groups engaging in Genius Hour and two classes as control groups. Achievement data will be compared between the treatment groups and the control groups.

Genius Hour

It was the first school day at the start of the semester when I switched from teaching elementary to high school. My schedule was the first stage of high school (grade 9). This stage represents a separation between middle and high school education in Saudi Arabia, and the most important stage for students because it combines theoretical and practical subjects with about 13 subjects. After this stage, the student can decide their educational path (theoretical or practical) based on the total average of their grades. I entered the first class and experienced many con-

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fused feelings and a lot of questions from my students. There was also a mixture of enthusiasm for the start of a new school phase and fear of the unknown.

I started my greeting “peace be upon you” and introduced myself as their teacher for mathematics this semester. And I said “today we don’t have lessons, the session will be just a discussion to get to know each other.” After I said that, they felt comfortable and smiled. Then I asked them about their feelings about the beginning of a new stage and what their expectations are. After that, I explained the rules and regulations of the school, what I expected from them, and what was required of them in mathematics and clarified the grading system. Then I encouraged them to talk. One of the students sitting in the back caught my attention. She had the look of frustration. I said, “We will start with you. Please introduce yourself and talk about your feelings and your plan for this year.” She looked at me with that perplexed look and a disappointed smile! Then she said, “My name is Wedad, would you please save your effort with me? I’m not interested in math. I have already planned to specialize in theoretical subjects.”

Actually, I wasn’t surprised by her reply, and I said, “Well, let us hear from your friends and I will get back to you.” Another student spoke and said, “I just hate mathematics,” so I just continued to listen to the third and fourth one until I had finished with the whole class who were between agreeing and disagreeing with these opinions, and then I said “All your fears are not right and in mathematics it is not that difficult to have all these negative thoughts. You may have gained this feeling from what you heard from communities or parents or some of your friends; maybe you have experienced ineffective ways of teaching, but let us throw away these thoughts and all these negative feelings to begin a new start looking forward to achieving your ambition.” Then I got close to Wedad and patted her gently on her shoulder and I said, “You will get full marks in mathematics, I believe in you.”

I stood in front of the whole class with a confident smile on my face and said: “I know that all of you are smart and able to do well with mathematics; you just need to think positively by repeating positive affirmations to yourself such as: I can do it, I love mathematics or chemistry or any subjects that you struggled with.” After that I suggested writing those positive confirmations on the board or their books and notes even in their homes in a place they spent a long time in and we would see the results after one month. The students set out enthusiastically to search for and register positive phrases, which made me happy.

The next day, I found beautiful phrases full of positivity on the board and they were racing every morning to tell me new phrases. After I saw their enthusiasm, I suggested that they create a hashtag with their names on *Twitter* and write in it every day positive attitudes or phrases, and their enthusiasm continued throughout the year in this way. Before the end of year, I printed out the best tweets and posted them on the school corridors between their friends and other students.

After the first week passed, I gave a short exam. Wedad got 3/10, I talked to

her and asked her: “Did you start repeating those positive confirmations?” She responded negatively that she didn’t, so I convinced her to start immediately. After one month passed, the students had their first semester exam and I was shocked by their grades, especially Wedad’s grade, who received a 20/20. She couldn’t believe her perfect score and her friends gave her a lot of encouragement. At that moment, I believed in our students, that they have a lot of the passion necessary to be excellent students of mathematics, and that they just need educators to support them and guide them to build their self-confidence.

Since then, I have been thinking how I can support my students so that they show their creativity and their genius as future scientists. To that end, I conducted my own research looking for strategies and I discovered a rather useful strategy called Genius Hour. I figured that this is the appropriate strategy that will support my students to become more confident as well as full of positive thinking. Also, they can become effective researchers and thinkers, too. Genius Hour as a tool for learning mathematics can play an important part in the Vision 2030, a policy initiative initiated and supported by the KSA government.

Crown Prince Mohammad bin Salman bin Abdulaziz Al-Saud states that Vision 2030 is a bold yet achievable blueprint for a capable nation. It expresses our long-term goals and expectations and it is built upon our country’s unique strengths and capabilities. It guides our aspirations towards a new phase of development—to create a vibrant society in which all citizens can fulfill their dreams, hopes, and ambitions to succeed in a thriving economy without relying on oil and gas. A significant aspect to this policy initiative is education, and specifically mathematics and science education. For example, in the beginning of 2016, the National Transformation Program 2020 was started with the Ministry of Education’s participation in the country’s sectors. The challenges faced by education were compiled, and then general objectives of education, performance measurement indicators, and also educational realization initiatives for the National Transformation Program were developed.

Education plays a significant role in this policy initiative. Specifically, education develops philosophy, policy, and curriculum goals—means of development, mechanism activation and connecting all these means with programs of teacher preparation and professional development. Education develops an attractive, preferred, and stimulating school environment, connecting it with supportive and integrated service systems. In addition, there is comprehensive education for persons with disabilities, and providing appropriate support to all categories of disabilities. Also, we provide pre-primary education opportunities and are expanding it, providing kindergartens, and activating its link with the education system. Education research is necessary to develop teaching methods that focus on the learner, not just on the teacher, to concentrate on inculcating skills, personality development, improving confidence, and promoting the spirit of creativity.

These ideas are supported by the Genius Hour strategy. This strategy encour-

ages students' creativity, confidence in themselves, dependence on themselves to gain information and training them to be effective researchers. The education sector is considered one of the vital sectors that is closely connected to society and the development of the national economy. Also, it is contributing to the transition from dependence on one source of income to depending on mindsets with high skills, and creative and productive human energies. The education system encourages dependence on reliable and safe resources, programs and projects, opening up investment opportunities, and eventually generating professional opportunities. Education contributes to the development of human capital, and also in acquiring the requirements and needs of the labour market. In addition, as a teacher, when I teach students to be researchers, who are creative and able to work and produce, as my research topic supported, this certainly supports the job market with what the country needs both economically and socially.

Specifically, the goal of integrating the Genius Hour in the class is to develop the student's research skills and build their self-confidence as well as to develop their creative thinking. "Genius Hour, when implemented in science classrooms, may provide the autonomy and the time for students to try on the role of 'scientist'" (Reuer, 2017, p. 26). Students then begin to become mini-scientists by following their own innate curiosities about a subject in Genius Hour.

Genius Hour provides students time to follow their own interests, which increases their self-directed skill, thereby developing their abilities as a researcher. Jennifer Bernstein (2014) states that Genius Hour is when "teachers set aside a designated amount of time during the week for students to engage in self-directed projects that allow them to pursue their own questions, interests, and passions." Providing time in the classroom using Genius Hour will allow students to discover information by themselves. Thus, as children begin to learn in Genius Hour about a topic, they begin to construct or internalize what they have learned. Elaine Simos (2015) argues that "students began to develop syntheses of their inquiries" while participating in Genius Hour projects (p. 4). Therefore, using Genius Hour helps students to develop their own inquiry skills, similar to the work of many researchers.

As a math teacher, the idea of using Genius Hour is intriguing because it would allow students to investigate areas of math on their own. One strategy that is used is to start "off with an informal *wonder wall*. Students started to generate questions that they would like to answer" (Coaty, 2014). Implementing a similar "wonder wall" would be the beginning of students' inquiry in math. Learner motivation results from autonomy. When students are given options and they are free to choose what to do with their learning, it leads to purposeful learning and mastery of content. Robinson (2018) describes how teachers can plan and create Genius Hour Makerspaces that are flexible enough to incorporate into their schedules and existing physical spaces. Some teachers may offer class time in a Genius Hour Makerspace for one day a week for several weeks. At the end of the arti-

cle, the author provided some helpful resources and advice for more inspirational ideas for teachers interested in Genius Hour Makerspaces.

Students have different abilities, interests, and motivations. Providing them with a differentiated education depends on the necessity of knowing each student, his interest and his ability to research. Genius Hour is one of these strong differentiated strategies that teachers can use to meet students' individual needs. "Accordingly, learning strategy implementation can be targeted to each individual's needs and strengths" (Wormeli, 2007, p. 3). Furthermore, Wormeli (2007) reported that students in high school have created and implemented projects during Genius Hour in which the entire group was involved in presentations, and there was significant variation in the products. This is not surprising because this learning comes from their own work. Then the students made observations about the work of their peers and included it in their final reflections on the inquiry study.

I visited several schools in the United States, specifically in Phoenix. I saw many new strategies for education. I was looking forward to finding a teacher who had previously applied the same idea of my topic (Genius Hour). Unfortunately, I did not encounter a teacher who applied it.

Also, in an immersion school, I partnered with mathematics teachers who had never applied this strategy. My colleague at Immersion School was excited to implement my idea. We planned it but the Coronavirus disaster happened, and the schools were closed. Mrs. Rodriguez promised me she would apply it with her students and share with me the results. During my visit to Shaw Montessori School, I noticed that multi-aged students are in one class. For example, the first class contained 4th, 5th, and 6th grades. There were seven groups of students that have one schedule including mathematics, social studies, reading, writing, and science. The students can choose any subject to start the class, then start to work by themselves with only a few directions from the teachers, much like Genius Hour. There were some similarities and differences between American and Saudi classrooms. Some aspects that were the same were active learning, students in groups and use of technology in the classroom. One striking difference was that there was both a main teacher and an assistant teacher in the American classroom.

Also, education at this school was based on play. What impressed me was the kindergarten classes. Children are amused and able to learn with great speed. My attention was brought to the flexibility of seating. Each class had a comfortable sofa or two chairs with a side table and bedside, which makes the students feel comfortable and enjoy learning. In this distinguished school, I attended several classes. The classes were organized, and every class had a wall hanging with rules that are clear to all students. The students were very disciplined and calm. Of the elective classes that astonished me was the cooking class, where the kitchen was very large and clean. Also, there are the facilities and materials required to learn. The school was distinguished by creating a special gym for girls at their request and separating them from the boys' gym. This school has the largest school li-

brary of all. I liked the arrangement and the way it was organized, its wall was surrounded by international flags, and I was pleased that the flag of my country was included there. I attended art class and found that students were creative. The students practiced different types of art like pottery and painting. One of the ideas that I applied with my colleague, Mrs. Rodriguez, was a video recording strategy. It is an active learning strategy in which the cards of each student had the written problem and the group names. What is required is to discuss the issue as a group, solve it, record a video, and upload it to their accounts on the school site. The next day, six issues were identified and the teacher uploaded them to the site after making sure of the correctness of the solutions. She then asked the students to view the videos of their colleagues, and transfer the solutions on the given worksheet individually. I like this idea because most students love this activity. So, students have more confidence and more effective learning. This point corresponds to my action research about Genius Hour. In fact, I have benefited from many of my fellow teachers in the United States. Also, I conveyed to them many ideas and strategies applied in education of Saudi Arabia.

To implement the Genius Hour strategy in KSA will require several steps. (1) In the beginning we must create a students interest survey to give to all students. (2) Start collecting websites, and resources about Genius Hour. (3) Collect forms, images, videos of ideas that can be used in my classroom. (4) Share my Action Research project with my principal for approval and request resources that are needed. (5) Share my Action Research project with my supervisor so that she knows why I am applying the Genius Hour Strategy. (6) Share with other teachers on my PLC team what I learned about Genius Hour Strategy. (7) Select some subjects for projects in Math to help the students. (8) Then Select two of my classes to implement Genius Hour strategy (treatment groups) and two that I will not use it (control groups). (9) Apply an interest Survey for students (treatment groups).

The students in the two treatment groups are to select the topics of the projects. (Two control group students participate in lessons without Genius Hour Strategies).The treatment group students ask the questions and select research questions for their projects. Students do research to find the answers to their questions. Then they write about their research findings and create the products. After that, students reflect and evaluate themselves through video recording. Also, they are to create and prepare display posters and presentations of the projects. I will share the AR project with one or two teachers and invite them to visit my classroom while teaching the treatment group. In my plan I will also use data collection method bservations to know the stages of students' progress in their research.

To assess the skills of students I would use a *checklist* to evaluate the final project of students. One of the obstacles that I may encounter when applying a research topic is the lack of tablets available to all students, as well as the lack of sufficient internet in my school. I will find a solution to this, for example using a computer lab or a classroom for learning resources. I want this to be an important

part of education in Saudi Arabia. It can provide textbooks for all subjects and for all students. Because the textbook is a very important reference in education, and books in Saudi education have a very high quality. It is attractive to students and a barcode has been added to explain the lesson on every page. This way a school can be equipped for a student to learn without a teacher.

From my experience, I believe this can help my fellow teachers in the United States, as follows. The most important point of education is the teacher's relationship with the student, but it must become more flexible. Positive thinking and interaction must be cultivated in our students. We must allow our students to unleash their creativity in all fields. We must train them in critical thinking. We have genius students and need to allow them the intellectual launch to become future scholars. I like to experiment with all my strategies that can allow their creativity to be launched. I am excited about returning to Saudi Arabia and implementing a Genius Hour strategy with my students, and monitoring the launching of their passion and creativity.

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