

**EFFECT OF GENIUS HOUR TEACHING STRATEGY
ON ACADEMIC ACHIEVEMENT AND STUDY
ENGAGEMENT OF PROSPECTIVE TEACHERS**



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INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD

2026

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By

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A thesis submitted in partial fulfillment of the requirement for the degree
of PhD in Education

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APPROVAL SHEET

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I, Sobia Yaseen D/O Muhammad Yaseen Khan Registration No.174-FSS/PHDEDU/F20, a student of Ph.D. in Education at International Islamic University, Islamabad, do hereby declare that this thesis entitled **“Effect of genius hour teaching strategy on academic achievement and study engagement of prospective teachers”** submitted for the partial fulfillment for PhD in Education. This thesis in its present form is the original work of the author except those who are acknowledged in the text. The material included in the thesis has not been submitted wholly or partially for the award of any other academic certification than for which it is being presented.

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The thesis entitled “**Effect of Genius Hour Teaching Strategy on Academic Achievement and Study Engagement of Prospective Teachers**” was submitted by Sobia Yaseen, Reg: 174- FSS/PHDEDU/F20, in partial fulfillment of PhD Education has been completed under my guidance and supervision. I am satisfied with the quality of the student's research work and allow her to submit this thesis for further process as per IIU rules & regulations.

Signature: _____

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DEDICATION

I cordially dedicate my research to my parents, my respected and very dear Madam Dr. Munazza Mahmood, my loving and caring husband Mr. Rizwan Aziz, my daughter Noor Fatima and my brothers and sister whose prayers and dedication made it possible

Acknowledgment

In the name of Allah swt, who is Rahman and Raheem. All the praise to Allah for His blessings and our Prophet Muhammad SAW humanity's greatest teacher

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Abstract

It is crucial to find out the exciting ways of teaching and learning, as they are providing students with chances to pursue their own passions and showcase their talents. Every teacher wants to implement enchanted teaching strategies that involve and enhance students' learning. Genius Hour is a teaching strategy which allows every student to explore their own ideas and encourage them to be more creative. The goal of this strategy is to engage students through problem-solving and critical thinking. This inquiry-based learning experience is geared specifically towards students exploring their interests. The objective of this study was to compare study engagement and academic achievement of prospective teachers in control and experimental group. The study was quantitative in nature. A true experimental pre-test post- test control group design was used. The population of the study were the students of B.Ed. Hons Elementary studying a school management course at the University of Kotli AJ&K. At first step, a pre-test was conducted of all 88 students. At second step matching pair based on the pre-test scores and at the third step one member from each pair was randomly assigned to experimental group and the other one in the control group. Three research instruments were used, an academic achievement test (pre-test/post-test) that measured academic achievement, a study engagement questionnaire developed based on literature to check the study engagement (cognitive, behavioral, emotional engagement), before and after the experiment and interview protocol for conducting interviews by the participants from the experimental group. In experimental group Genius Hour teaching strategy as it encompasses various aspects, including project planning, implementation, and presentation while in control group traditional teaching method (lecture method) was used. The duration of the experiment was four months. The researcher applied statistical analysis for testing the research hypothesis and used thematic analysis for interviews. The findings revealed that the Genius Hour teaching strategy significantly enhances academic achievement and study engagement compared to traditional method. It is recommended that teacher education programs at the University level may integrate Genius Hour teaching strategy as an instructional strategy.

Keywords: *Genius hour teaching Strategy, academic achievement, study engagement, prospective teachers.*

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List of Abbreviations

B.Ed.	Bachelor of Education
UOK	University of Kotli
AJ&K	Azad Jammu And Kashmir
GH	Genius Hour
SE	Study Engagement
SE	Student Engagement
SPSS	Statistical Package for Social Sciences

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CHAPTER 1

INTRODUCTION

Education in the 21st century is undergoing a transformative shift from rigid, teacher-centered models to more flexible, learner-driven approaches that emphasize creativity, autonomy, and real-world application. This shift has created a growing need to engage learners not only cognitively, but also behaviorally, emotionally, and contextually, preparing them to meet the complex demands of contemporary professional environments (Fredricks et al., 2004; Reeve, 2013). Student engagement has emerged as a critical factor influencing academic achievement, motivation, and long-term learning outcomes, making it a focal point in both general and teacher education.

The Genius Hour (GH) teaching strategy, rooted in inquiry-based and passion-driven learning, offers a promising framework for enhancing engagement and promoting meaningful academic growth (Juliani, 2015; Ruday & Krebs, 2020). By allowing students to explore topics of personal and professional interest, GH fosters autonomy, creativity, and critical thinking. Its structured phases including Introduction, Launch, Pitch, Action, Presentation, and Reflection provide systematic opportunities for learners to develop higher-order cognitive skills while connecting classroom learning to real-world contexts. For prospective teachers, such experiences are particularly valuable, as they model learner-centered practices that they are expected to implement in their future classrooms (Darling-Hammond, 2017).

Genius Hour draws inspiration from Google's "20% time" model, which encourages employees to dedicate a portion of work time to pursue projects of personal interest. In the classroom, GH adapts this concept by allocating dedicated time for students to investigate self-selected topics within the framework of academic learning. Unlike traditional approaches that emphasize uniformity and predetermined content, GH promotes autonomy, creativity, critical thinking, and intrinsic motivation. It transforms students from passive recipients of knowledge into active participants and creators, thereby bridging the gap between personal curiosity and academic rigor. Moreover, GH aligns with constructivist theories of education, offering authentic

opportunities for collaboration, reflection, and application of knowledge in meaningful contexts (Aldehbashi, 2021; Machado et al., 2020).

Fundamentally, education is a dynamic process in which the quality of instruction significantly influences student outcomes (Hill et al., 2018). Learners are active participants whose curiosity, motivation, and engagement must be nurtured through thoughtfully designed pedagogical experiences. Teachers play a pivotal role in creating learning environments that stimulate intrinsic motivation, sustain interest, and cultivate a genuine desire to learn (Ryan & Deci, 2000; Darling-Hammond et al., 2020). However, in many educational institutions in regions such as Azad Jammu and Kashmir (AJ&K), traditional teacher-centered approaches remain dominant, often limiting opportunities for active learning, critical thinking, and meaningful student engagement (Afzal & Qadir, 2022). In such contexts, innovative, student-centered strategies like GH are essential for fostering both academic achievement and holistic engagement.

Study engagement is a multidimensional construct encompassing cognitive, behavioral, emotional, and contextual (classroom) dimensions, all of which influence students' academic performance and overall learning experiences (Fredricks et al., 2004; Appleton et al., 2008). Cognitive engagement reflects learners' mental investment, curiosity, and strategic effort to master content (Greene, 2015). Behavioral engagement encompasses observable actions such as class participation, attendance, and persistence (Fredricks et al., 2004). Emotional engagement captures affective responses, including interest, enjoyment, and a sense of belonging (Skinner & Pitzer, 2012). Classroom engagement highlights interactions with peers and instructors, which are enhanced in autonomy-supportive and inquiry-driven environments such as GH (Kahu, 2013; Reeve, 2012). Research indicates that learner-centered pedagogies like GH positively impact all dimensions of engagement by promoting autonomy, relevance, and authentic learning experiences (Bond & Bedenlier, 2019; Reeve, 2012). Enhancing study engagement in teacher education is crucial, as it fosters reflective, self-driven, and competent future educators capable of connecting theory with practice (Zepke & Leach, 2010).

Academic Achievement is a multifaceted construct, incorporating both holistic and specific interpretations. From a broader lens, academic achievement encompasses

intellectual development, psychological well-being, and social adaptability. Astin (1985) articulates academic achievement as an integration of these domains, recognizing learning as an experience that extends beyond grades and incorporates emotional and social growth.

Traditional teacher-centered approaches, especially in regions like Azad Jammu and Kashmir (AJ&K), often restrict active learning and critical thinking (Afzal & Qadir, 2022). GH offers a solution by promoting differentiated instruction, learner autonomy, and collaborative inquiry, thereby addressing diverse student needs and engagement levels. Despite growing interest in GH, its impact on prospective teachers' academic achievement and engagement remains underexplored, highlighting the need for research into its effectiveness in teacher education contexts.

In summary, the Genius Hour teaching strategy represents an innovative, evidence-informed approach to student-centered learning that enhances engagement, academic achievement, and professional preparedness. Its structured yet flexible framework provides prospective teachers with authentic learning experiences, enabling them to develop critical thinking, creativity, and reflective skills while modelling pedagogical strategies they can later implement in their classrooms. Despite its growing adoption, the effects of GH on the academic journey of future educators, particularly in contexts like AJ&K, remain underexplored.

1.1 Background of the Study

In recent years, educational approaches have evolved to meet the changing needs and expectations of students in the 21st century. One such innovative strategy that has gained attention in educational circles is the "Genius Hour" teaching approach. This strategy, also known as "20% Time" or "Passion Projects," offers students the opportunity to explore their own passions and interests during a designated portion of their academic time. Originating from the tech giant Google's policy of allowing employees to devote 20% of their work time to personal projects, the Genius Hour teaching strategy concept has been adapted to the educational context with the goal of increasing student engagement and intrinsic motivation.

Google's "20% time" initiative, once celebrated as a hallmark of employee-driven innovation, allowed staff members to dedicate one-fifth of their paid working hours to explore self-directed projects beyond their routine responsibilities (Wikipedia,

2024). This autonomy-based approach empowered employees to experiment with creative ideas, leading to some of Google's most successful innovations, including Gmail, Google News, and AdSense. However, as the company expanded and operational demands increased, the original 20% model underwent significant transformation. By the mid-2010s, the practice had been largely scaled back and became less formalized, with employees often required to seek managerial approval before pursuing side projects.

To sustain innovation within a growing corporate structure, Google later introduced Area 120, an internal start-up incubator designed to preserve the spirit of 20% time while offering a more structured and resource-supported framework. Within Area 120, employees can pitch innovative ideas, form small teams, and receive funding and mentorship to develop prototypes essentially transforming informal passion projects into potential commercial ventures. This evolution reflects Google's attempt to balance creative autonomy with organizational efficiency, ensuring that innovation remains a central part of its culture while aligning projects with broader strategic goals.

Despite these organizational changes, the core philosophy underpinning the 20%-time initiative the encouragement of creativity, ownership, and intrinsic motivation continues to inspire modern educational practices. Models such as the Genius Hour teaching strategy have adapted this concept to academic contexts, providing students with dedicated time to pursue passion-based inquiry projects. In doing so, Genius Hour extends Google's innovation ethos into the classroom, fostering autonomy, engagement, and creative problem-solving among learners.

In education, Genius Hour teaching strategy is a unique time when students select topics that intrigue them and explore relevant issues, specify a solution and share findings with others to influence change. According to Fish, (2023) the learning process includes time to research topics of own choice. This process gives students freedom of choice which remarkably enhances their confidence and provides them with decision making power.

The Genius Hour teaching strategy operates on the fundamental premise that students learn best when they are actively engaged in their learning process. By empowering students to pick themes that genuinely interest them and then guiding them through inquiry, research, and project development, the strategy aims to create an

interactive learning environment where students emerge as self-directed, curious, and highly motivated learners (Spencer & Juliani, 2017).

The academic landscape is increasingly emphasizing the importance of not only academic achievement but also study engagement as critical indicators of educational success (Salmela-Aro & Upadyaya, 2012). Academic achievement is often measured through standardized test scores, grades, and assessments, while student engagement encompasses their cognitive, emotional, and behavioral investment in their learning (Appleton et al., 2008). High levels of study engagement have been linked to positive learning outcomes, including improved academic performance, critical thinking skills, and overall well-being (Salanova et al., 2010; Tuominen-Soini & Salmela-Aro, 2014). Several educational theories and frameworks provide a theoretical foundation for the Genius Hour teaching strategy.

Furthermore, Self-Determination Theory (SDT) posits that autonomy, competence, and relatedness are essential for intrinsic motivation and engagement (Deci & Ryan, 2000). Genius Hour teaching strategy aligns with SDT by affording students autonomy in selecting their projects and fostering their sense of competence as they become experts in their chosen subjects (Spencer & Juliani, 2017). Inquiry-Based Learning (IBL) is another theoretical framework closely associated with the Genius Hour teaching strategy. IBL emphasizes active learning, problem-solving, and the development of critical thinking skills, all of which contribute to enhanced academic achievement and study engagement (Hmelo-Silver et al., 2007).

Teacher education in Azad Jammu and Kashmir (AJ&K) continues to rely heavily on traditional, lecture-based instructional approaches, where teachers dominate classroom discourse and students remain passive recipients of information. Teacher preparation programs across Pakistan including AJ&K still emphasize rote learning, textbook-driven instruction, and limited opportunities for student-led inquiry or autonomous learning (Siddiqui, 2021). This overdependence on transmissive teaching methods restricts the development of higher-order thinking skills, creativity, and active engagement, all of which are essential for preparing future educators to meet the demands of 21st-century classrooms.

Evidence from international studies demonstrates that research on the Genius Hour teaching strategy has primarily examined its implementation at the school level,

focusing on younger learners and reporting outcomes related to general classroom engagement, motivation, or creativity (Ramadhan et al., 2023). Studies that systematically investigate multidimensional study engagement, particularly its cognitive, behavioral, and emotional components, within teacher education contexts remain limited. Moreover, a review of available literature indicates that no empirical studies have documented the application of Genius Hour within teacher preparation programs in Pakistan, highlighting a clear regional gap. Methodologically, existing research has relied largely on descriptive or qualitative designs, with comparatively little experimental evidence assessing the effect of Genius Hour on prospective teachers' academic engagement and study engagement. Addressing these empirically identified gaps, the present study contributes novel experimental evidence aligned with contemporary priorities in inquiry-based learning and teacher education.

While there is a growing body of anecdotal evidence supporting the positive impact of the Genius Hour teaching strategy on student engagement and academic achievement, empirical research on this topic is still limited, especially in the context of prospective teachers' education, prospective teachers also known as student teachers enrolled in teacher education programs. The need to investigate the effectiveness of Genius Hour teaching strategy is critical, particularly as it has the potential to reshape teaching and learning in the 21st century. The study aims to fill this gap in the literature by examining the effect of the Genius Hour teaching strategy on academic achievement and study engagement among prospective teachers. It seeks to provide empirical evidence and contribute to the ongoing discourse about Genius Hour teaching strategy and its effect on academic achievement and study engagement.

1.2 Problem Statement

In contemporary education, the dynamic nature of teaching and learning requires continual adaptation to engage and empower students effectively. As in 21st century, educators are challenged to cultivate environment that foster not only academic achievement but also holistic student development, including the critical dimension of study engagement. High levels of study engagement are not only associated with improved academic outcomes. In our society teachers are backbone of the education system that is why there is need to train the prospective teachers with latest and innovative teaching strategies. Teacher can play their role very

effectively so there is need to train our prospective teachers with the innovative teaching strategies such as genius hour, a student-centered passion driven teaching strategy. It is known that our teachers are using traditional teaching strategies that are not sufficient to meet the need of the time. Teachers around the world are committed to introduce innovative teaching strategies into the classroom to develop 21st century skills in their students. In AJK teachers are mostly using traditional strategies of teaching and there is need to explore and implement innovative and latest teaching strategies for creating student- centered learning experience that meets the personal interests, passions of students. To effectively respond to the need of using student- centered teaching strategies in higher education for increase in study engagement and greater academic achievement. Genius hour, a student-centered inquiry based- teaching strategy has gained significant attention in recent years. Despite realizing the importance of Genius hour in education, Universities do not tend to apply it. However, it remains unclear whether implementing the Genius Hour teaching strategy in teacher education significantly enhances academic achievement and study engagement among prospective teachers. This gap in empirical evidence underscores the need to test the effect of this Genius hour through controlled experimentation. As Genius Hour teaching strategy is a new and innovative teaching strategy, and it is used around the globe at school level. Thus, the persistence of traditional teaching in AJ&K teacher education system directly underscores the need to investigate the effect of the Genius Hour strategy as a transformative instructional model capable of addressing existing pedagogical limitations. Therefore, this true experimental study employed pre-test post-test control group design was conducted at higher education level upon the prospective teachers in the University of Kotli Azad Jammu and Kashmir. The students of B.Ed. Hons Elementary in experimental group interacted with Genius Hour teaching strategy.

1.3 Significance of the Study

The study is significant for the prospective teachers, students, and policy makers. The significance of the study addressed the application of Genius Hour teaching strategy among a sample of prospective teachers at the University level where aspiring educators are entrusted with the critical task of shaping the future of education. Investigating the effect of the Genius Hour teaching strategy in the context

of teacher training can provide valuable insights into the most effective strategy, Genius Hour teaching strategy, for preparing future teachers. Teachers will also be benefited from the findings of the study by planning effective classroom activities to equip prospective teachers with Genius Hour. The main contribution of this study added value of findings related to the effect of Genius Hour teaching strategy regarding study engagement and academic achievement. Whereas the practical significance of the study is for teachers to know about the activities and content that can be used to enhance study engagement and academic achievement of prospective teachers. Findings of the study are beneficial for students to get to know effect of being trained with Genius Hour teaching strategy for their future practice. Also, the findings related to this study are helpful for the curriculum developers and policymakers to give space to the Genius Hour teaching strategy in the curriculum.

The study gave an experience to the prospective teachers for experiencing Genius Hour teaching strategy and it also gave confidence to the prospective teachers for implementing Genius Hour teaching strategy during their teaching practice. Genius Hour teaching strategy is not limited to one specific educational context or region. This study contributes to the broader field of educational research by examining the effect of Genius hour teaching strategy that embraces 21st century principles of inquiry-based learning, autonomy, and intrinsic motivation. The study's findings may be of interest to educators and researchers globally who are exploring strategies to engage students and enhance academic performance in diverse educational systems.

1.4 Objectives of the Study

Following were the objectives of the research:

1. To find out the effect of Genius Hour teaching strategy on academic achievement of the prospective teachers.
2. To find out the effect of traditional teaching strategy on academic achievement of the prospective teachers.
3. To compare academic achievement of prospective teachers in control and experimental group.
4. To find out the effect of Genius Hour teaching strategy on study engagement of prospective teachers.

5. To find out the effect of traditional teaching strategy on study engagement of prospective teachers.
6. To compare study engagement of prospective teachers in control and experimental group.
7. To explore prospective teachers' perceptions regarding the implementation of the Genius Hour.

1.5 Research Hypotheses

Following null hypotheses were tested to achieve the objectives of the study.

- H₀₁:** There is no significant effect of Genius Hour teaching strategy on academic achievement of prospective teachers.
- H₀₂:** There is no significant effect of traditional teaching strategy on academic achievement of prospective teachers.
- H₀₃:** There is no significance difference in the mean scores of academic achievements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.
- H₀₄:** There is no significant effect of Genius Hour teaching strategy on cognitive engagement of prospective teachers.
- H₀₅:** There is no significant effect of Genius Hour teaching strategy on behavioral engagement of prospective teachers.
- H₀₆:** There is no significant effect of Genius Hour teaching strategy on emotional engagement of prospective teachers.
- H₀₇:** There is no significant effect of Genius Hour teaching strategy on study engagement of prospective teachers.
- H₀₈:** There is no significant effect of traditional teaching strategy on cognitive engagement of prospective teachers.
- H₀₉:** There is no significant effect of traditional teaching strategy on behavioral engagement of prospective teachers.
- H₀₁₀:** There is no significant effect of traditional teaching strategy on emotional engagement of prospective teachers.

H₀₁₁: There is no significant effect of traditional teaching strategy on study engagement of prospective teachers.

H₀₁₂: There is no significance difference in the mean scores of cognitive engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.

H₀₁₃: There is no significance difference in the mean scores of behavioral engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.

H₀₁₄: There is no significance difference in the mean scores of emotional engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.

H₀₁₅: There is no significance difference in the mean scores of study engagement of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.

H₀₁₆: There is no statistically significant relationship among cognitive engagement, behavioral engagement, and emotional engagement of prospective teachers in the post-experimental group.

1.6 Research Questions

Following research questions were used for achievement of the objective number seven (07), related to explore the perceptions of participants regarding their experiences with Genius Hour teaching strategy in experimental group.

Q1. What are prospective teachers' perceptions of the overall effectiveness of Genius Hour teaching strategy in enhancing their learning experiences?

Q2. How did the Genius Hour teaching strategy influence prospective teachers' cognitive, behavioral, and emotional engagement?

Q3. Which aspects of the Genius Hour teaching strategy did prospective teachers find most challenging in their learning experience?

1.7 Delimitations of the Study

The study was delimited to:

- i. Department of Education, University of Kotli Azad Jammu & Kashmir
- ii. Prospective teachers from B.Ed. Hons Elementary program, Batch Fall, 2024
- iii. Course “School Management”, course code EDE-409 offered in 8th semester

1.8 Operational Definitions

The operational definitions of the variables of the study are as follows. There are three variables in the study, i.e., one independent variable (Genius Hour) and two dependent variables (study engagement, academic achievement).

1.8.1 Genius Hour Teaching Strategy

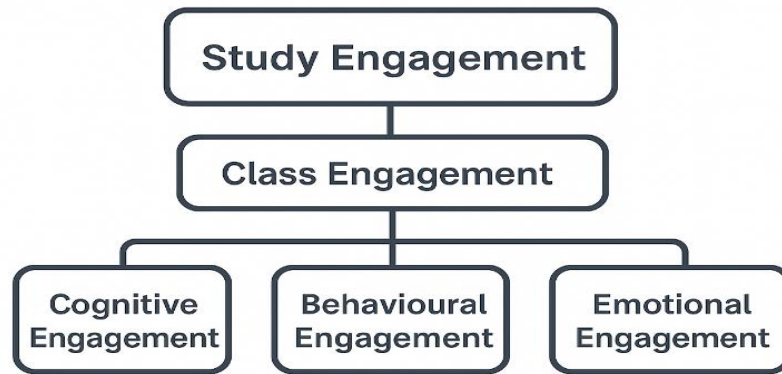
The Genius Hour teaching strategy is operationally defined as an instructional approach that allows prospective teachers, a dedicated and structured time during the regular University class to independently select and explore self-chosen topics or projects of personal interest, from the regular curriculum of “School Management” course. During this designated period, students are encouraged to pursue self-directed learning, conduct research, engage in hands-on activities, and create projects or presentations related to their chosen topics.

1.8.2 Academic Achievement

Academic achievement in the study focused the performance that shows the prospective teachers’ level of competency in accomplishing specific goals in school management course while applying Genius Hour-based teaching instructions.

1.8.3 Study Engagement

Study engagement refers to the active and sustained involvement of prospective teachers in academic tasks, classroom activities, and project-based learning experiences during the School Management course. It is operationalized as a multidimensional construct comprising of cognitive, behavioral, emotional engagement.

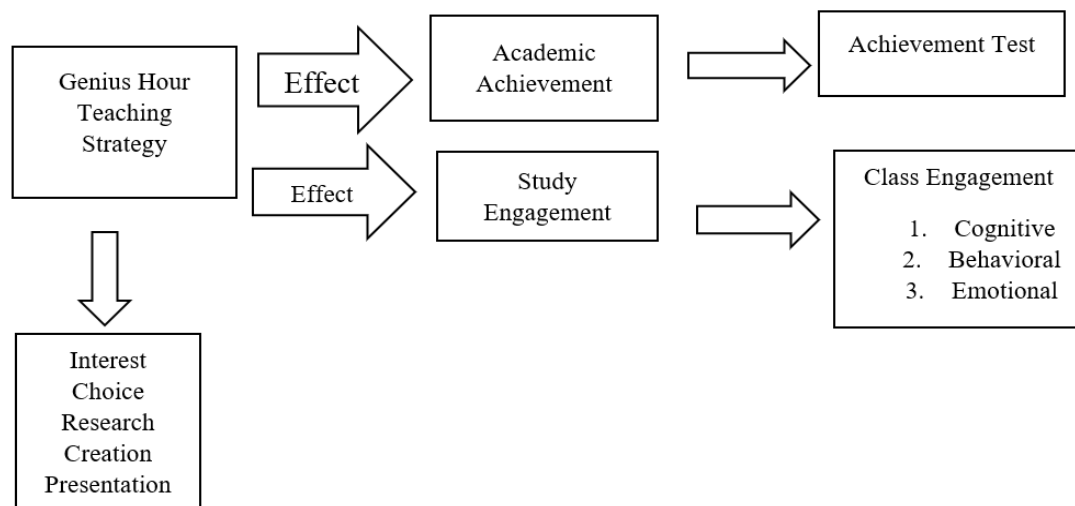


1.9 Conceptual Framework

The study based on Genius Hour teaching strategy that is based on Google's 20% time. The independent and dependent variable of the research, Genius Hour teaching strategy (independent variable) study engagement and academic achievement (dependent variables). The conceptual framework for the study is based on the idea that implementing the Genius Hour teaching strategy in the classroom of prospective teachers to find out the effect of Genius Hour on academic achievement and study engagement.

Figure 1. 1

Conceptual Framework of the Study



Source: *Genius Hour* <https://www.geniushourguide.org/the-genius-hour-guidebook/>
Study engagement Fredrick's Model of Student Engagement

CHAPTER 2

LITERATURE REVIEW

A literature review is an account of what has been published on a topic by accredited scholars and researchers in peer-reviewed journal papers, books, theses, and reputable conference proceedings. The primary aim of the literature review is to understand how past research aligns with the current study and to identify theoretical and methodological gaps. Furthermore, it helps to contextualize the study within a broader academic discourse and informs the development of the conceptual and theoretical framework.

The chapter presents a comprehensive review of the existing literature relevant to the study. It begins by exploring the theoretical foundations and conceptual definitions of study engagement, emphasizing its multidimensional nature cognitive, behavioral, emotional, and classroom-engagement. The review then discusses the significance of academic achievement in teacher education and examines how innovative instructional approaches influence learning outcomes. A substantial portion of the chapter is dedicated to the Genius Hour teaching strategy, tracing its origins, implementation in various educational contexts. Furthermore, empirical studies comparing traditional versus student-centered learning strategies are analyzed to contextualize the experimental framework of the study. This review aims to identify gaps in the existing body of knowledge and establish a strong foundation for the rationale and methodology adopted in this research.

2.1 Instructional Strategies

Instructional strategies refer to the deliberate techniques employed by teachers to foster students' independence as strategic learners. When students autonomously select and apply these strategies to accomplish academic tasks, they evolve into learning strategies. Effective instructional strategies enhance student motivation, direct attention, organize information for deeper understanding, and facilitate ongoing assessment of learning. As Morison (2019) highlights, instruction involves the purposeful organization of experiences to guide performance change. Similarly, Herrington (2000) emphasizes that instruction creates a stimulating environment through structured guidance and instructional tools designed to promote

meaningful learning and behavioral development.

Instructional strategies are commonly categorized into autocratic and democratic approaches. Saxena and Oberoi (1994) classified these strategies by their orientation: autocratic strategies focus on teacher-led instruction, while democratic strategies emphasize student-centered, active learning. This classification provides a foundation for examining traditional and innovative instructional methods.

2.1.1 Lecture-Based Instructional Strategy

Lecture-based instruction, rooted in the idealist tradition, remains one of the most widespread teaching strategies. Historically, it has served as a dominant mode of content delivery in higher education. According to Swanson and Torracco (1995), the lecture model has been a cornerstone of formal education for centuries. The instructor, as the knowledge authority, reads or presents material, and students are expected to listen, take notes, and absorb information. Uden and Beaumont (2006) observed that lecture-based strategies require passive reception from students, as the teacher serves as the sole information provider. This model, although efficient for covering vast curricular content, has been critiqued for minimizing teacher-student interaction and engagement. Students often remain disengaged, leading to surface-level learning.

Moreover, Tronchoni et al. (2022) emphasize that while lectures are effective for content transmission within time constraints, they often fail to develop critical thinking or collaborative learning. Similarly, Byrne (2016) studies highlight that passive listening in lecture-dominated environments limits student creativity and reduces active participation.

2.2 Genius Hour: A Student-Centered Teaching Strategy

Genius Hour teaching strategy (GH) is a ground-breaking, inquiry-based teaching method designed to develop students' abilities to think critically, interpret ideas, and solve problems through creative exploration. This pedagogical approach aligns with the skills demanded by the contemporary educational landscape, offering learners the freedom to investigate, innovate, and potentially contribute meaningfully to the world around them (Juliani, 2014). It is rooted in the Google business model of providing employees with 20% of their work time to pursue personal passion projects an initiative credited with the creation of successful innovations such as Gmail, Google News, and AdSense (Bailey,2022).

This model of autonomy and creativity in the workplace has since inspired educators to transfer the concept into classrooms. Similar strategies were previously adopted by companies like Hewlett Packard and 3M in the 1950s, where employees were allotted 15% of their time to personal innovation, resulting in inventions like the Post-It Note (Kettler, 2021). These examples highlight the broader applicability and success of passion-driven inquiry and set a foundational precedent for implementing Genius Hour teaching strategy in educational contexts.

In the realm of education, Genius Hour, as conceptualized by Spencer and Juliani (2017), promotes a personalized learning approach emphasizing student choice, time, and autonomy. These components are fundamental for cultivating 21st-century competencies such as creativity, collaboration, and critical thinking (Thornhill et al., 2023). Juliani (2014) further articulates that GH designates approximately 20% of the instructional time for students to engage in self-directed, learner-centered projects.

This time is deliberately structured to allow students to investigate topics they are genuinely passionate about, mirroring the 20% Time initiative from the corporate world (Spencer, 2017). Projects deemed worthwhile receive support, thereby reinforcing the value of student agency in developing authentic, impactful learning experiences (Fontana, 2025).

Consequently, Genius Hour teaching strategy has emerged as a powerful classroom initiative that supports student autonomy and nurtures creativity. It allows learners to independently choose areas of interest, encouraging self-motivation and ownership of the learning process (Ferlazzo, 2013). This shift toward student-led inquiry marks a significant departure from traditional, content-heavy pedagogies and aligns with the growing emphasis on cultivating lifelong learners. Through this freedom, students can be engaged more deeply with their work, leading to increased motivation and engagement. Krebs and Zvi (2015) underscore that when learners are given the power to direct their educational experiences, they are more likely to become intrinsically motivated and committed to the learning process.

Furthermore, Genius Hour teaching strategy has been empirically linked to enhanced student creativity. Marek (2025) report that when students are given opportunities to innovate, problem-solve, and take intellectual risks, they demonstrate higher levels of creative thinking. This in turn can have measurable impacts on literacy and numeracy development, as problem-solving often leads to more effective reading, writing, and analytical skill-building (Shama, 2025).

These findings resonate strongly with the shift in educational discourse toward inquiry-based, project-based, and problem-based learning (PBL), all of which are alternatives to traditional, teacher-centered approaches. In these models, the teacher functions as a facilitator; guiding, mentoring, and scaffolding student learning rather than only dictating the content (Renzulli, 2021). In his inductive model of learning, Renzulli posits that students should function as investigators and creators, ultimately presenting their products to authentic audiences. This not only deepens learning but also cultivates intellectual maturity and responsibility. He emphasizes the role of the teacher as a "guide-on-the-side" rather than a "sage-on-the-stage."

Adding to this perspective, Mayuni (2019) asserts that project-based learning empowers students by giving them control over the direction and scope of their educational activities. This empowerment leads to more meaningful, engaging learning experiences, a view also supported by c). In addition, Moemeke, (2025) complements this by noting that such projects often address real-world problems, pushing students to

generate practical and socially valuable outcomes.

However, sustaining student interest in project-based learning requires continuous adaptation and novelty. Rahardjanto (2019) emphasize the need for personalization within PBL frameworks to maintain high levels of student enthusiasm. Serin (2017) supports this, arguing that aligning projects with students' intrinsic interests enhances both motivation and learning effectiveness. In this regard, Genius Hour teaching strategy stands out as an ideal implementation of personalized PBL. Macklem (2015) notes that GH directly addresses low motivation and disengagement by allowing students to explore topics of personal significance. Lee (2016) adds that this learner-directed approach builds confidence, decision-making, and responsibility. As Townsend (2018) reiterate, autonomy in the classroom is a significant driver of student engagement.

Juliani (2014) introduces the concept of "Complete Autonomy" within GH, encouraging students to generate and explore their own questions. This self-inquiry process not only supports creativity and critical thinking but also develops digital literacy, collaboration, and global awareness (Wettrick, 2014; LeGeros et al., 2022). Thus, GH is not merely a teaching strategy but a transformative learning framework that prepares students to face future academic and professional challenges.

2.3 Implementation of GH in Classroom

GH, as described by Spencer and Juliani (2017), represents a personalized learning approach based on the principle that students ought to be provided the opportunities of choice (i.e., selecting the research topics based on their interests), time, and autonomy (i.e., independence in decision making) to engage in deeper learning, thereby enhancing the development of modern world (Bound ,2018).

The classroom project concept, initially established at Google (Spencer, 2017), is modeled after an approach where employees devote 20% of their workweek to identifying requirements and following passion projects aimed at developing new ideas or solutions. Projects that are considered practical and presented to management receive additional resources to further develop the 20%- time initiative (Horigan, 2018). GH is a designated time where 20% of a student's instructional period is dedicated activities

which are completely learner-centered (Juliani, 2014). GH is an initiative that enables students to pursue their personal educational interests and enhances creativity within the classroom. It grants students the autonomy to choose what they learn during a designated period at school (Kesler, 2013).

This movement is intended to develop the intrinsic motivations for learning, produce self-directed learners, introduce self-sufficiency into the classroom, and engage students' interests, passions, critical thinking, and creativity (Kesler, 2013). In GH, students are free to select creative projects they wish to undertake, which can enhance their sense of ownership and responsibility in their learning. This approach can boost students' intrinsic motivation by allowing them to explore their interests and talents. When students have control over the activities performed in order to complete the projects of their own choice, they become more engaged and motivated (Zvi & Krebs, 2015).

Additionally, GH has been shown to enhance student creativity (Ginsberg & Coke, 2019). During GH, students employ creative, innovative, and problem-solving skills in selecting and executing their projects. This process helps them develop the creative abilities needed to address future challenges. By creating a more exciting learning environment, Genius Hour provides students with greater opportunities to cultivate and expand their creativity. This can directly improve students' literacy and numeracy skills. It also aids students' personality grooming as it helps them to take charge of their life through appropriate decision-making skills. Creative thinking enables them to approach challenges and concepts in innovative ways, making them better readers, powerful writers, and more adept at solving math problems (Brookhouser, 2015).

In education, Genius Hour is a unique time when students select topics that are relevant to their course or even novel to them and explore issues related to them specify a solution and share findings to influence change. This whole process includes time to search the topics of students' choices. They choose what the final product is about for finding ways to share the product widely to impact change (Juliani, 2014). This is because certain principles are defined with regard to whether students will work together

or not and what learning tools and formats can be integrated into their work. Hence, popular trading books suggest that Genius Hour generally follows a specific structure.

Table 2. 1

Genius Hour teaching strategy at Every Level of Education

Educational Level	Implementation of Genius Hour	Benefit	Project Example
Kindergarten	Provide creative time for students to explore their interests, such as painting, building, or role-playing.	Encourage children's creativity and imagination. Helps develop social and sharing skills.	Draw landscapes, build mini-cities, and play roles in fairy tales.
	Provide time for students to develop interest-based projects, such as	Strengthen understanding of basic concepts.	
Elementary School		Increase student Interest and motivation to learn. Bring up research and inquiry skills.	Research animals, create artwork based on favorite themes,
<i>Educational Level</i>	Implementation of Genius Hour	Benefit	Project Example
Secondary School	science experiments or art projects.	Promote creativity and innovation.	and create simple games.
	Allows students to explore their interests with more in-depth student learning projects, such as creating apps or social research.	Encourage problem-solving and critical thinking skills. Broaden knowledge and understanding in the area of interest of students. Train skills and communication.	They make mobile apps, research social media's impact, and make documentaries.

Provide time for students to carry out research projects, academic explorations, or innovations in their field of study.	Reveals high Research and problem-solving abilities. Encouraging innovation and creativity in the field of study. Deepen understanding and mastery of academic concepts.	Conduct scientific research, create new technological projects, and develop contemporary works of art.
<i>College</i>		

The table represents different research studies conducted on the basis of Genius Hour at different educational levels in United States, Saudi Arabia, Brazil, Canada and Japan as discussed by Alqahtani (2021).

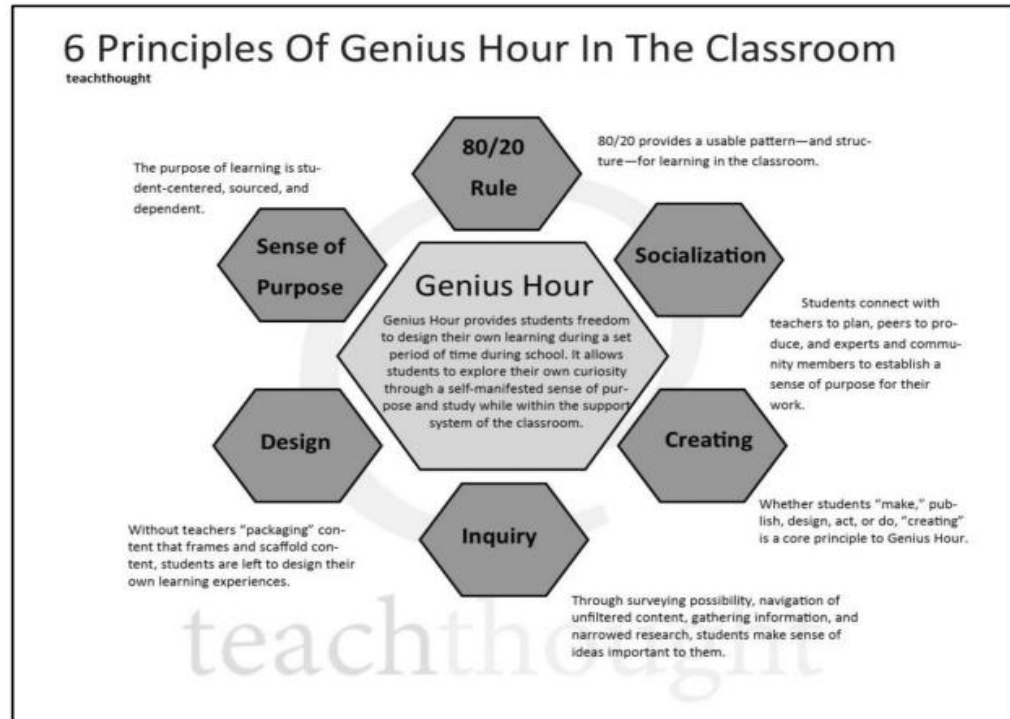
2.4 Principles of Genius Hour

According to Townsend (2018), less than one percent of students worldwide have had the chance to engage in Genius Hour learning. This limited adoption may be attributed to a lack of awareness among students and insufficient resources related to learning strategy.

The three key principles of Genius Hour are autonomy, mastery, and purpose. Autonomy allows students to control their content and project execution, mastery promotes a growth mindset and focuses on the learning process, and purpose involves students reflecting on their passions and real-world relevance (Kesler, 2014). Genius Hour provides students with the opportunity to gain freedom and responsibility in their learning, enhancing their global understanding and preparing them for future challenges. (LeGeros et al., 2022) Successful implementation necessitates following the set rules (Townsend, 2018).

Figure 2. 1

Principles of Genius Hour



The principles of Genius Hour teaching strategy in the classroom (Heick, 2014)

A detail discretion of the principles of Genius Hour teaching strategy highlighted in figure has been given as under:

2.4.1 Sense of purpose

In learning process, a sense of purpose varies depending on the goals to be accomplished (Lin & Wei, 2021). Within GH, students are encouraged to uncover creativity, innovation, and critical and logical thinking by engaging in activities they are passionate about and taking ownership of their learning.

2.4.2 Design

Learners have the freedom to design their learning utilizing several strategies, methods, sources, and deciding what they want to learn. The way students design their whole projects using the methods of their choice greatly impacts the success of their projects (Fan et al., 2021).

2.4.3 Inquiry

Inquiry involves a series of learning activities aimed at fostering critical and analytical thinking skills, enabling students to search their own answers to posed problems. According to Abdi (2014), inquiry learning captures students' interest in science, allows them to use appropriate and relevant research techniques to gather evidence, requires problem-solving through logic and evidence, encourages further exploration for more complex explanations, and highlights the importance of writing scientific explanations based on evidence.

2.4.4 Creating

Learners tend to retain limited knowledge when their education is confined to reading textbooks and taking notes. Meaningful learning typically occurs when students are engaged in hands-on experiences and practical activities. Therefore, it is essential for teachers to provide opportunities for students to explore real-world problems through methods such as project-based learning, model creation, and motivational tasks. Engaging with authentic or simulated challenges not only deepens student involvement but also fosters the construction of new knowledge through active participation and inquiry.

2.4.5 80/20 rule

The 80/20 rule allocates at least 20% of students' time to explore their curiosities within an educational setting, while the remaining 80% follows traditional teaching methods. Students have the flexibility to decide how to schedule their GH, choose their own design, allocate a set time, whether it be 10 minutes per lesson, an hour per day, or one day per week, allowing each student to choose a plan that fits their class structure. The 20% Genius Hour based lessons for experimental group in this study were planned and attached at the end. (Appendix-B)

2.4.6 Socialization

Social interaction happens not just between students, but also with peers and even experts related to the topic they are exploring and discovering. Unfortunately, according to research the implementation of GH remains inconsistent and unpredictable both in Indonesia and globally.

The concept of GH can transform, update, and personalize the educational experience for students worldwide. Genius Hour in his class as “Passion Time,” a term that better reflects why students benefit from and enjoy Genius Hour. By allocating specific times to pursue their passions, schools can enhance student curiosity, boost motivation (LaVoie, 2008), promote critical thinking, enhance creative thinking (Michalko, 2006), and encourage students to become independent learners (November, 2012)

2.5 Phases to Implement Genius Hour

There are certain phases of GH that need to be implemented. First, the application of generic techniques and brainstorming to boost student enthusiasm. The second phase, generally referred to as launch, is where students become familiar with the project’s basic rules, it also includes a list of the final criteria. Then, suggestions are sorted for reducing the range of options regarding a particular subject or query and obtain final approval before the investigation is started. Student behavior is involved in the third phase. Planning research outcomes and creating the final outcome are included in this step. Students present and/or share their learning during the fourth stage. The final step entails reflection and assessment of the project done (Coiro et al., 2019). In this study these all phases were implemented in experimental group for smooth implementation of Genius Hour. The detail is given in (Appendix-F)

2.5.1 Phase 1. Introduction

In the regular educational setting, students have never experienced Genius Hour. As an outcome, teachers typically dedicate a part of the first lesson to explaining Genius Hour and its significance. Sharing digital content of students’ choice created by them is one of the ways for teachers to know their students’ interests and aspirations (Ginsberg & Coke, 2019). Teachers also utilize the introduction as a time to discuss appealing matters according to Juliani (2014). Some people use this time to have students start thinking of questions they might ask, hence keeping them busy in a cognitive activity. Moreover, they are aware that frequent scaffolding is necessary for students to come up with innovative ideas. They can take help from brainstorming as a group project in the classroom (Brookhouser, 2015).

2.5.2 Phase 2. Launch

Launch phase is the time when teachers help the students make changes in the selected assignments and projects after a whole lot of discussions. The educators are advised to set ground rules for projects. Juliani (2014) writes that a written action plan is required for this design of study. Some commercial textbooks and formal research, recorded by students and reviewed by faculty, is the vital part of the publishing process (Ginsberg & Coke, 2019; Juliani, 2014; Wettrick, 2014).

As per the point of view of Wettrick, (2014), research is not the only necessary element, but it should majorly include emphasizing access to experts to broaden their thought process and should find a consultant for the given project. This process largely reflects the steps “ask and discover” of personal digital inquiry (Coiro et al., 2019). On the other hand, for some of the other educators, formal research at launch is optional. This is especially true if students choose to focus their questions on learning or creation through action and experimentation (Krebs & Zvi, 2015).

2.5.3 Phase 3. Pitch

Another frequently used phase in the literature around Genius Hour is the “Pitch” process. This phase includes a short or single-slide presentation by the students. This activity called ‘pitch’ is performed in one-on-one or small group meetings in front of the whole class and teacher. Here, the teachers play a pivotal role in transforming students’ ideas into compelling stories. The idea is that the individual would be able to sell or “pitch” their idea to a significant decision maker during a short, chance-encounter elevator ride that had the possibility to become a life-changing experience. The purpose of this process is to get review and help students improve their project through scope, clarity, or a new idea in common.

2.5.4 Phase 4. Action

In fourth step, after the launch, students are allotted time to work. The work timeframe characteristically lasts six to eight class periods, if Genius Hour is offered part of a class; an entire course devoted to Genius Hour typically lasts multiple weeks. Work time is used to focus on a combination of the research process, the result of students’ end product, and/or their presentation (Brookhouser, 2015; Ginsberg & Coke, 2019; Krebs & Zvi, 2015; Wettrick,

2014). Some educators need students to maintain a blog or other digital journal to record how they use their time or to document their thinking processes as a form of reflection (Juliani, 2014; Wettrick, 2014). Some students may become able to swap the blog for their portfolio. Teachers may choose to keep the blogs private or to share student blog posts with external audiences (Wettrick, 2014). This phase aligns with the “Create and Take Action” phase of the Personal Digital Inquiry framework and inquiry cycle.

2.5.5 Phase 5. Presentations

The value of sharing learning is the common theme in Genius Hour according to many famous researches (Brookhouser, 2015; Juliani, 2014; Krebs & Zvi, 2015; Wettrick, 2014). Instructors use TED-style talks as the model for their presentations, TED (Technology, Entertainment, Design) is a non-profit platform committed to disseminating innovative ideas globally through concise, influential talks, building intellectual engagement across disciplines, but on and off they need to include activities that allow students to present their own work or discuss a common slide show that they use to deliver their learning with others (Juliani, 2014).

In a normal setting, student presentations are given to the class, however some lecturers advise asking the guest speakers to attend these presentations which increases their confidence to a next level. Also, this practice involves the students to critically ponder upon their own ideas and review their own work again making it more precise. Literature generally implies that teachers and occasionally peers give feedback to the students regarding the project, usually in the form of constructive criticism and positive feedback on their performance and skills.

2.5.6 Phase 6. Reflection, Self-Assessment, and Educator Assessment

The final assessment can be performed using several formats. Krebs & Zvi (2015) set a rule that students should self-assess their work prior to meeting with the teacher and according to them the final product is not graded. Juliani (2014), on the other hand, wanted the students to be more focused on the process instead of the project as a whole, resultantly deemphasizing the project. Teachers may use rubrics, sentence starters, or reflection

questions as a scaffolding process, while students on the other side may consider their growth in a wide range of areas, such as creativity, innovation, and intrinsic or extrinsic motivation. Although reflection is the most definite focus at the end of the Genius Hour experience, students are also stimulated to use their blogs and journals to review their work throughout the other phases. These phases are followed while using Genius Hour strategy in the classroom. All of the above discussed phases provide a framework to work with Genius Hour and smoothly run the process in a classroom.

2.6 Key Differences between Lecture Based Instructions and Genius Hour

In contemporary educational research and practice, instructional methods play a pivotal role in shaping learners' engagement, motivation, and achievement. Traditional lecture-based instruction, while widely used, often emphasizes content delivery and teacher control, potentially limiting opportunities for personalized learning and active student participation. In contrast, the Genius Hour teaching strategy embodies a constructivist, student-centered paradigm that raises autonomy, creativity, and intrinsic motivation through inquiry-driven learning. Understanding the distinctions between these two pedagogical approaches is essential for evaluating their relative impact on cognitive, behavioral, emotional, and academic outcomes. The following table outlines the key differences between lecture-based instruction and Genius Hour based instruction across various dimensions of teaching and learning.

Table 2. 2

Key differences between Lecture-Based Instructions and Genius Hour teaching strategy -Based Instructions

Aspect	Lecture-Based Instructions	Genius Hour- Based Instructions
Teaching Approach	Teacher-centered	Student-centered
Role of Teacher	Knowledge transmitter; main authority	Facilitator and mentor
Role of Students	Passive recipients of Information	Active researchers and creators
Content Selection	Determined by the teacher or curriculum	Chosen by students based on personal interests
Learning Style	One-size-fits-all; same pace for all students	Personalized; students work at their own pace and depth
<i>Aspect</i>	Lecture-Based Instructions	<i>Genius Hour–Based Instructions</i>
<i>Assessment Type</i>	Standardized tests, quizzes, and exams	<i>Project-based assessment, presentations, reflections</i>

<i>Student Engagement</i>	Often lower; limited Interaction	<i>High; driven by curiosity and ownership of learning</i>
<i>Creativity and Innovation</i>	Limited opportunities for creative thinking	<i>Encourages creativity, innovation, and problem-solving</i>
<i>Motivation</i>	Extrinsic (grades, teacher expectations)	<i>Intrinsic (interest, passion, self-direction)</i>
<i>Collaboration</i>	Mostly individual Work	<i>Promotes collaboration, peer feedback, and team-based learning</i>
<i>Critical Thinking</i>	Less emphasis; content recall is prioritized	<i>Strong emphasis on critical thinking, inquiry, and exploration</i>
<i>Flexibility</i>	Rigid schedule and fixed content	<i>Flexible time and content tailored to students' needs</i>
<i>Learning Outcomes</i>	Often focused on content mastery	<i>Focused on skill development, creativity, research, and deep understanding</i>
<i>Technology Integration</i>	Limited or basic use	<i>High use; students explore digital tools to support their projects</i>

<i>Examples of Activities</i>	Note-taking, lectures, textbook reading	<i>Research projects, presentations, creative expressions, hands-on exploration</i>
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Source: Adapted from Juliani (2015), Saavedra and Opfer (2012), Zhao (2012), and Ramadhan et al. (2023).

While PBL in general has shown promising outcomes, research continues to support the superiority of student-driven models like Genius Hour. For example, Condliffe et al. (2017) conducted a study comparing Advanced Placement (AP) U.S. Government classes taught via traditional lectures versus those using PBL. Students in the PBL group achieved significantly higher scores on the AP exam. Similarly, Summers and Dickinson (2012) found that PBL students outperformed peers in both achievement and college and career readiness (CCR).

Recent research post-2021 continues to support Genius Hour's efficacy. LeGeros et al. (2022) observed that Genius Hour implementation across middle schools enhanced student engagement and personalized learning outcomes. Ramadhan et al. (2023) confirmed Genius Hour's adaptability and benefits across diverse educational contexts, while Levitt and Grubaugh (2024) explored the integration of AI into Genius Hour, finding increased creativity and deeper engagement. This body of research reinforces the position of Genius Hour teaching strategy as a viable and superior alternative to conventional instruction. It demonstrates not only academic gains but also growth in soft skills essential for 21st-century learners (Crevier, 2018; Duke, 2016; Duke et al., 2018; McCann, 2017). Therefore, Genius Hour is increasingly recognized as a multidimensional approach that enhances both the cognitive and affective domains of learning. Its growing adoption across various educational contexts signals a paradigm shift toward more meaningful, engaged, and personalized learning experiences.

The reviewed literature emphasizes a growing trend towards learner-centered pedagogies, with Genius Hour teaching strategy emerging as a leading technique for enhancing student engagement and achievement. Genius Hour's foundation in autonomy, intrinsic motivation, and inquiry aligns it well with contemporary educational goals. When

contrasted with traditional lecture-based instruction, Genius Hour offers a dynamic alternative that empowers students, developing critical skills, and contributes to meaningful learning.

The literature given above establishes the theoretical and empirical groundwork for the present study. By incorporating both Genius Hour and traditional methods into the experimental design, the study aims to contribute vigorous findings to the ongoing discourse on effect of instructional strategies in teacher education programs. “In this study, the control group was exposed to a traditional lecture teaching strategy, defined as a primarily teacher-centered instructional approach that emphasizes delivery of content through oral presentation and note-taking (Simpson, 2013; Swanson & Torraco, 1995).” The experimental group in the study exposed to the Genius Hour teaching strategy, defined as a student-centered, inquiry-based instructional approach that allows learners to explore topics of personal interest within a structured framework, promoting autonomy, creativity, and deep engagement through project-based learning (Juliani, 2014; Spencer & Juliani, 2017).

2.7 Academic Achievement

Academic achievement is commonly defined as the degree to which a learner successfully meets educational goals, typically set within institutional settings such as schools, colleges, and universities. It is a multifaceted construct, incorporating both holistic and specific interpretations. From a broader lens, academic achievement encompasses intellectual development, psychological well-being, and social adaptability. Astin (1985) articulates academic achievement as an integration of these domains, recognizing learning as an experience that extends beyond grades and incorporates emotional and social growth. Similarly, Bloom’s (1956) taxonomy identifies achievement as involving the acquisition of knowledge, the development of attitudes and values, and the mastery of both cognitive and behavioral skills.

In contrast, the narrower view of academic achievement focuses on measurable outcomes, such as standardized test scores, GPA, and subject-specific assessments. This operational definition is frequently used in empirical research due to its objectivity and reliability. Li and Wang (2022) conceptualize academic achievement in terms of students’

academic performance, including literacy, competency, and content mastery. Li and Chai (2018) similarly emphasize quantifiable outcomes derived from formal assessments as valid indicators of achievement. While both broad and narrow definitions are valid, this study adopts the narrower operational definition of academic achievement as measured through post-test scores. Additionally, studies by Cho and Kim (2019) and Chen et al., (2019) support the achievement goals theory, which links academic performance to intrinsic and self-directed motivation (Elliot, 2005; Ryan & Deci, 2000). Cho and Kim's (2019) longitudinal analysis of South Korean students revealed that early intrinsic motivation predicted later mastery-oriented goals and continued self-driven achievement.

Genius Hour, an inquiry-based learning strategy, promotes several factors that are directly associated with improved academic outcomes:

- **Deeper Understanding:** GH encourages exploration and application of content, which enhances students' conceptual understanding an outcome positively linked to academic achievement (Savery & Duffy, 1995).
- **Critical Thinking:** By engaging students in problem-solving and open-ended inquiry, GH supports the development of higher-order thinking skills, foundational to academic success (Halpern, 1998).
- **Transferable Skills:** GH helps students refine essential academic skills such as research, time management, and project execution competencies that are transferable across subjects (Savery & Duffy, 1995).
- **Increased Interest and Motivation:** Allowing students to explore personally meaningful topics cultivates intrinsic motivation, which has been shown to boost academic performance (Fredricks et.al., 2004).
- **Metacognition:** GH promotes reflective thinking and metacognitive awareness, both of which contribute to deeper learning and improved academic outcomes (Schraw et.al., 2006).

The relationship between academic achievement and student engagement taking into account the reviewed studies, there are many different ways to identify the relationship between academic achievement and student engagement. The main conclusions of an article by Kuh, (2001) indicated that there is a positive relationship between grade point

average (GPA) and student engagement. Additionally, it was noted in the same article that academic achievement and campus engagement are more positively correlated than class engagement. In a different article, Park (2005) comes to the conclusion that academic gains in mathematics are substantially positively correlated with student engagement.

The relationship between student engagement and academic achievement has been widely documented across various studies. Kuh (2001b) found a positive correlation between student engagement and grade point average (GPA), emphasizing that campus-wide engagement exhibited a stronger association with academic performance than engagement confined to the classroom. Similarly, Park (2005) reported a significant positive relationship between student engagement and academic gains in mathematics, with no variation across racial or gender groups. Li et al. (2010), in a study focused on mathematics performance, identified cognitive engagement as a critical factor positively influencing students' learning outcomes. This form of engagement, which involves deep mental investment and strategic learning, is consistently valued by educators for its capacity to enhance academic performance.

Further support comes from Greene et al. (2008), who observed that time devoted to reading and writing was positively linked to GPA, whereas variables such as employment status or single-parent households did not show significant associations. Nauffal (2012) investigated faculty-student interaction and concluded that such engagement significantly influences academic success. Notably, the study found that engineering students demonstrated stronger engagement and consequently higher academic achievement than business students.

Wara et al. (2018) also affirmed a moderate positive relationship between cognitive engagement and academic performance ($r = .376$, $N = 312$, $p < .05$), noting that students with low commitment to assignments were less likely to succeed academically highlighting the need for instructors to actively monitor and support student engagement. In the UK context, Appleton et al. (2006) emphasized that both cognitive and emotional engagement significantly impact student learning and achievement, with improvements in either domain leading to corresponding academic benefits. Furthermore, Li et al. (2010) emphasized that school engagement, though varying among individuals, consistently contributes positively to academic achievement.

2.8 Study Engagement

Study engagement has been identified as a significant factor influencing individuals' daily academic experiences (Salmela-Aro et al., 2016). It is commonly conceptualized as a multidimensional construct encompassing emotional, cognitive, and behavioral components, which have been extensively examined in educational research (Fredricks et al., 2004). These dimensions collectively contribute to learners' motivation, investment in academic tasks, and overall educational outcomes, thereby positioning study engagement as a central element in the discourse on effective teaching and learning practices.

Building upon this multidimensional understanding, the study places particular emphasis on study engagement including cognitive, behavioral and emotional engagement, especially within the context of prospective teachers enrolled in the School Management course. Emotional engagement has been identified as a key factor in shaping how learners connect with academic activities on an affective level, encompassing feelings of enthusiasm, interest, and emotional investment (Salmela-Aro & Upadyaya, 2012).

In addition to emotional engagement, the study also considers behavioral engagement, which refers to students' active participation in learning activities, including effort, attention, class involvement, and perseverance in completing academic tasks. It reflects the visible, action-based involvement of learners and is often seen as a prerequisite for academic success. Moreover, cognitive engagement is examined to capture the mental effort students invest in understanding complex ideas, applying critical thinking, and using deep learning strategies rather than surface-level memorization. This dimension is particularly relevant in higher education, where students are expected to engage with content analytically and reflectively.

The study provides a holistic view of how the Genius Hour teaching strategy impacts student engagement by addressing all three dimensions, emotional, behavioral, and cognitive. It investigates how giving prospective teachers independence and choice in project-based learning influences not only their affective connection to learning but also their behavioral involvement and intellectual investment in the School Management course.

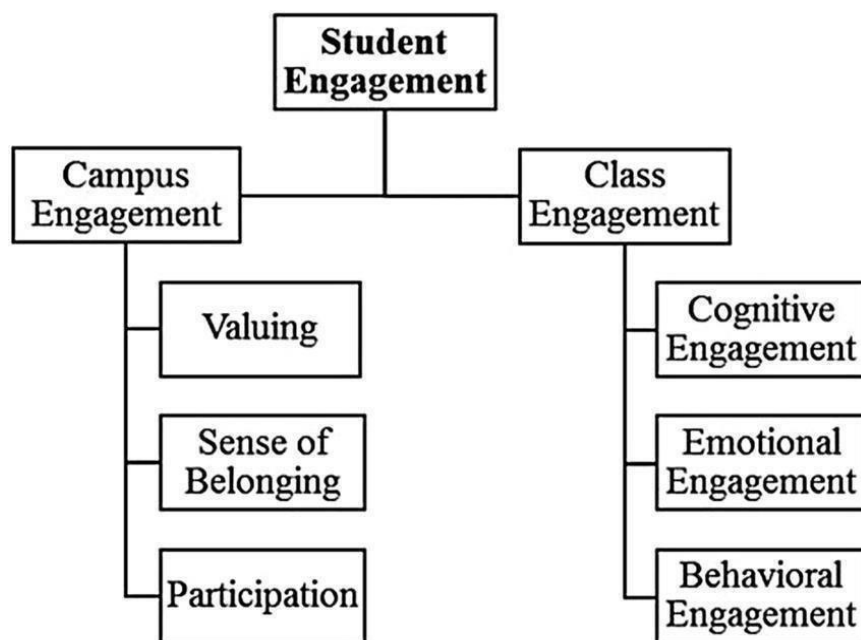
2.9 Student Engagement

Student engagement (SE) is widely acknowledged as a multidimensional construct encompassing emotional, cognitive, and behavioral components. This perspective is grounded in the foundational work of Fredricks et al. (2004), and is supported by Burch et al. (2015) and Hasanov et al. (2021). These dimensions provide a comprehensive understanding of how students connect with the learning process. Expanding on this, Kahu (2013) conceptualizes holistic engagement as a combination of emotional connection, self-regulated cognitive effort, and active behavioral participation.

The multidimensional nature of SE also encompasses both class engagement and campus-wide engagement. Class engagement is typically categorized into cognitive, emotional, and behavioral components (Gunuc & Kuzu, 2014; Fredricks et al., 2004). Meanwhile, campus engagement includes broader institutional involvement, such as participation in co-curricular activities and a sense of institutional belonging (Pike & Kuh, 2005; Terenzini et al., 1996).

Figure 2. 2

Student engagement and its dimensions



Student engagement (SE) has long been recognized as a pivotal construct in educational research. It is defined as the extent of students' active, purposeful participation and psychological investment in learning (Boekaerts, 2016). Engagement encapsulates a wide array of behaviors, emotions, and cognitive processes that collectively influence academic success and learning outcomes (Fredricks et al., 2016; Kuh, 2009; Strayhorn, 2018).

Renowned educational theorists have emphasized the need to define and examine SE comprehensively due to its richness in conceptual frameworks and empirical findings (Brush & Saye, 2008; Saye & Brush, 2004; Fredricks et al., 2004; Schlechty, 2011a; Shernoff et al., 2003). Additionally, Schlechty (2011) proposed a multi-level model of engagement that emphasizes intellectual challenge and student perception of task significance, appeal, and relevance. His concept of intellectual engagement reflects a student's willingness to persist through challenges and solve problems creatively rather than completing tasks merely for compliance.

Early studies primarily measured engagement through observable behaviors, such as time-on-task, class participation, and effort in assignments (Brophy, 1983; Natriello, 1984). Over time, the definition expanded to include affective dimensions like sense of belonging and emotional attachment to school (Finn, 1989; Connell, 1991). More recent research incorporates cognitive engagement, focusing on students' investment in learning, depth of processing, and perseverance in the face of academic difficulty (Fredricks et al., 2004).

Fredricks et al. (2004) offered a widely accepted tripartite model of SE, which includes behavioral, emotional, and cognitive dimensions:

- **Behavioral engagement** entails participation in academic and social activities and is linked to positive academic outcomes and reduced dropout rates (Finn, 1989; Connell & Wellborn, 1991).
- **Emotional engagement** involves students' affective reactions to their teachers, peers, and the institution, contributing to a sense of belonging and motivation to

succeed.

- **Cognitive engagement** refers to students' use of deep learning strategies, self-regulation, and persistence in mastering challenging concepts using mental capabilities.

Student engagement (SE) has remained a central focus in educational theory and research for decades. It broadly refers to the degree of students' active, purposeful participation and psychological investment in the learning process (Boekaerts, 2016). Engagement involves emotional, behavioral, and cognitive dimensions, each playing a crucial role in nurturing meaningful learning experiences and improving academic outcomes (Fredricks et al., 2016; Kuh, 2009; Strayhorn, 2018). Scholars widely agree that engagement not only enhances academic performance but also cultivates a dynamic and supportive learning environment.

Early research on SE often focused on observable behaviors, such as participation in class activities, time-on-task, and dedication to assigned work (Brophy, 1983; Natriello, 1984). Later, emotional components like enjoyment, sense of belonging, and attachment to school were included (Connell, 1990; Finn, 1989). More contemporary perspectives incorporate intellectual or cognitive engagement and students' willingness to exert efforts in overcoming challenges and their preference for deep learning over superficial approaches (Fredricks, Blumenfeld, & Paris, 2004). Cognitive engagement also includes self-regulation, where students control their learning behaviors and manage their academic responsibilities independently (Pintrich & DeGroot, 1990; Miller et al., 1996).

The participation-identification model by Finn (1989) is foundational in the field. It conceptualizes SE as combination of behavioral (participation) and emotional (identification) components. This dual framework has significantly influenced subsequent models, including that of Connell and Wellborn (1991), which contrasts engagement with disaffection. Engaged students show persistence, positive affect, and willingness to embrace academic challenges, whereas disaffected students appear withdrawn, display minimal effort, and often react with negative emotions (Skinner & Belmont, 1993).

Fredricks, Blumenfeld, and Paris (2004) expanded the engagement framework to include three primary dimensions:

- **Behavioral engagement**, which reflects students' participation in academic and extracurricular activities.
- **Emotional engagement**, involving positive and negative reactions to peers, teachers, and school.
- **Cognitive engagement**, denoting intellectual effort and strategy use in learning.

These dimensions are interrelated, and together they provide a comprehensive understanding of how students engage with their education. Numerous studies have confirmed the multidimensionality of SE and its essential role in preventing dropout and promoting sustained academic interest (Finn, 1989; Connell & Wellborn, 1991).

Researchers have also distinguished between class engagement and campus engagement. Class engagement is typically assessed through cognitive, emotional, and behavioral indicators within the instructional context. Campus engagement extends beyond the classroom and includes students' participation in institutional activities, their value placed on educational goals, and sense of belonging within the broader academic community (Blimling, 1993; Pike & Kuh, 2005; Terenzini et al., 1996). The researcher studied classroom engagement including cognitive, emotional and behavioral engagement.

Gunuc and Kuzu (2014, 2015) contributed to this classification by defining SE as the quality and quantity of students' cognitive, emotional, and behavioral responses in both academic and social settings. Their model suggests that engagement is influenced not only by instructional practices but also by institutional factors like faculty-student interaction, peer collaboration, student-centered learning, and access to technological and physical resources.

Multiple frameworks support these classifications. For instance, Appleton et al. (2008) and Patrick et al. (2007) identified similar dimensions, emphasizing how self-regulation, emotional attachment, and behavioral interaction to form a complete engagement profile. These views were supported by Bryson and Hand (2007), who noted that emotional engagement students' sense of belonging and attitudes toward learning can significantly affect academic performance.

More recent contributions further refine these ideas. Finn and Zimmer (2012)

identified four types of engagement:

- **Cognitive engagement** is defined as a mental effort and strategic learning.
- **Affective engagement** encompasses emotional investment and a sense of school attachment.
- **Academic engagement** involves task completion and attentiveness.
- **Social engagement**, reflecting appropriate classroom behavior and interaction.

This categorization aligns closely with the multidimensional model of c and serves to guide educators in designing interventions that support engagement across multiple levels.

Engagement is also deeply linked with motivational theories. According to Park (2005), SE involves psychological investment in learning activities and mastery of academic skills. Gunuc and Kuzu (2015) further explain that SE encompasses students' intrinsic and extrinsic motivation, enthusiasm, and goal orientation.

Finally, engagement is now widely acknowledged as a multifaceted, developmental construct that influences both academic and socio-emotional outcomes. It is viewed not only as an outcome of effective teaching but also as a dynamic process that can be enhanced through instructional strategies like Genius Hour, which actively integrate all three engagement domains cognitive, emotional, and behavioral.

This synthesis of theoretical models and empirical research provides a robust foundation for understanding how study engagement can be enhanced through innovative teaching strategies, including those that prioritize student autonomy, relevance, and real-world application. The next section builds on this framework to explore how Genius Hour, as an instructional approach, may impact these multiple dimensions of student engagement in teacher education contexts.

Additional models have expanded these dimensions. Finn's (1989) participation-identification model views behavioral engagement as participation in school activities and emotional engagement as the psychological identification with school (Finn & Voelkl, 1993). Similarly, Connell and Wellborn (1991) introduced a continuum model contrasting engagement with disaffection.

Gunuc and Kuzu (2015) define SE as "the quality and quantity of students' psychological, cognitive, emotional, and behavioral responses to the learning process, including both curricular and extra-curricular activities." This holistic view underscores the significance of environment, institutional support, and relational factors in inducing engagement. Elements influencing engagement include student-teacher relationships, peer collaboration, active learning methods, student-centered pedagogy, and the availability of campus facilities (Gunuc, 2017).

Researchers such as Appleton et al. (2008), Patrick et al. (2007), and Bryson & Hand (2007) have validated the multi-tiered structure of SE. Fredricks et al. (2004) and Jimerson, Campos, & Greif (2003) supported this by identifying three consistent subtypes, i.e., behavioral (e.g., effort, participation), cognitive (e.g., self-regulation, learning goals), and emotional (e.g., sense of belonging, interest).

Stovall (2003) and Krause & Coates (2008) linked SE with quality academic outcomes, noting that it is shaped not just by the quantity of time spent on learning tasks, but also by the intensity and intentionality of student effort. Similarly, Bomia et al. (1997), Hu (2001), and Kuh (2009) emphasized the role of motivation, personal goals, and engagement with learning opportunities.

More recent classification models have included a fourth-dimension Social engagement as identified by Finn and Zimmer (2012). They argue that academic, social, cognitive, and affective engagement collectively influence student success. Academic engagement includes task completion and participation in learning activities. Social engagement emphasizes interactions with peers and adherence to classroom norms. Cognitive engagement involves strategic thinking and deep learning. Affective engagement reflects emotional attachment and school pride. These nuanced models have proven that when it comes to higher education, engagement not only predicts academic success but also impacts well-being, satisfaction, and retention (Li et al., 2010; Harper & Quaye, 2009). Therefore, defining SE must account for both classroom dynamics and institutional context.

In conclusion, the literature reflects consensus that student engagement is a multifaceted and dynamic process. It includes the interplay of emotional, behavioral,

cognitive, and social elements and is sensitive to instructional methods, learner autonomy, and institutional environment. This complex understanding provides a strong foundation for exploring how Genius Hour teaching strategy can enhance study engagement in teacher education.

2.9.1 Dimensions of Student Engagement

The literature reveals that SE has been studied not only across emotional, behavioral, and cognitive dimensions but also through academic, psychological, and social lenses (Appleton et al., 2006; Furrer & Skinner, 2003; Fredricks et al., 2004; Finn et al., 2003; Helme & Clarke, 2001). This multidimensional framework underscores that engagement comprises how students behave, feel, think, and interact socially. These interrelated dimensions reflect both individual and environmental influences on learning outcomes. The academic focus of SE may vary by educational level. In this present study, SE is examined in the context of higher education, particularly among prospective teachers. Findings from preliminary investigations (Gunuc, 2013) informed the scope of the study.

Through synthesis of past research, two overarching domains of student engagement campus and class engagement are frequently identified. Each of these domains includes three sub-dimensions. For campus engagement, these sub- dimensions are social participation, sense of belonging, and mutual respect (Hausmann et.al., 2007; Kember et.al., 2001). Meanwhile, class engagement comprises cognitive, behavioral, and emotional sub- dimensions, which form the focus of the study.

2.9.1.1 Cognitive Engagement

From a psychological perspective, cognitive engagement distinguishes between students' substantive and procedural efforts in learning (Fredricks et al., 2016). It includes two major facets: cognitive strategies and metacognitive strategies. Cognitive strategies involve linking new material with prior knowledge and using techniques such as summarization or rehearsal to deepen understanding (Xu et al., 2020). Metacognitive strategies refer to students' goal setting, self-monitoring, and adaptive learning behaviors that support sustained intellectual effort (Fredricks et al., 2016).

2.9.1.2 Behavioral Engagement

Behavioral engagement refers to observable behaviors that indicate student involvement in learning activities (Christenson et al., 2012). It includes actions like class attendance and punctuality (Li & Lerner, 2013), staying on task and maintaining focus (Guo et al., 2015), and actively participating in class discussions and group work (Sang & Hiver, 2021). These behaviors signify students' commitment to academic responsibilities and their integration into classroom routines.

2.9.1.3 Emotional Engagement

Emotional engagement reflects students' affective responses to the learning environment and the emotional energy they invest in educational activities (Kahu, 2013). This dimension encompasses both positive emotions (e.g., enjoyment, excitement) and negative emotions (e.g., boredom, fatigue) toward teachers, peers, academic content, and school experiences (Gunuc & Kuzu, 2014; Pekrun et al., 2017). Emotional engagement plays a critical role in shaping student attitudes and influencing long-term academic outcomes.

Together, these dimensions offer a robust theoretical framework for examining how instructional approaches like Genius Hour teaching strategy (GH) influence SE. The current study is anchored in student engagement theory (Kahu, 2013; Wang & Eccles, 2012), which posits that cognitive, emotional, and behavioral domains are interdependent and collectively drive academic achievement. GH, characterized by student autonomy, inquiry-based learning, and personal relevance, is expected to promote engagement across all three domains.

Genius Hour is modeled after Google's 20% Time policy, where employees dedicate part of their schedule to passion projects. Within classroom settings, GH offers students similar autonomy and creative freedom, promoting not just academic productivity but also emotional well-being (Walker, 2011). Participation in interest-driven projects has been linked with improved self-worth, emotional well-being, and social connection (Leckey, 2011; Reuer, 2017).

Numerous factors explain GH's contribution to SE, particularly in university settings. These include i.e., autonomy, intrinsic motivation, active learning and relevance.

The detail of these factors is given below:

- **Autonomy:** GH allows students to choose their topics and learning paths, resonating with Self-Determination Theory, which highlights autonomy as essential for intrinsic motivation (Ryan & Deci, 2000; Reeve, 2006).
- **Intrinsic Motivation:** Since GH is interest-based, it naturally brings intrinsic motivation, a key driver of engagement and persistence in learning (Ryan & Deci, 2000).
- **Active Learning:** GH promotes active participation and deep thinking, both of which are closely associated with behavioral and cognitive engagement (Prince, 2004).
- **Relevance:** Projects grounded in students' interests increase the perceived relevance of school tasks, fostering greater emotional and cognitive engagement (Hidi & Renninger, 2006).

Many educators have shared their classroom experiences with GH, highlighting its effectiveness in boosting engagement and creativity (Maiers, 2017; Coke, 2018). However, to date, there is a paucity of empirical research examining GH in the context of teacher education in regions such as Azad Jammu and Kashmir. This study aims to fill that gap by investigating the effects of GH on student engagement among prospective teachers in the School Management course.

2.10 Theoretical Review

The theoretical foundation of the study is rooted in social constructivist learning theory, which emphasizes the role of social interaction, cultural context, and collaborative learning in knowledge construction (Bruner, 1960, 2003; Dewey, 1938; Vygotsky, 1978). According to constructivists, learning is an active, contextualized process where learners construct new knowledge based on prior experience and social discourse. In instructional practice, this is reflected in student-centered approaches that prioritize autonomy, collaboration, and real-world relevance (Cuba, 2005).

Genius Hour aligns with these principles by offering a learning environment where students take charge of their learning, engage in meaningful inquiry, and produce outcomes

that reflect both personal interest and academic relevance. Because Genius Hour encourages students to learn through exploration, interaction, and creativity, it provides fertile ground for research in student-centered, constructivist classrooms.

Additionally, the study draws from connectivism, a learning theory proposed by Siemens (2004) to explain knowledge acquisition in the digital age. Connectivism emphasizes the role of technology and networked learning environments, suggesting that knowledge is constantly evolving and that learning occurs through the ability to access, evaluate, and apply information across multiple platforms (Cope & Hill, 2008). Within the context of GH, students often utilize digital tools to research, collaborate, and present their findings, making this theory particularly relevant.

The theoretical lens also incorporates Constructionism, which focuses on the learner's process of making meaning through the creation of tangible artifacts. This is central to GH, where students create projects that demonstrate understanding, creativity, and mastery. The constructionist view highlights the role of the learner as an active participant in meaning-making, rather than a passive recipient of information.

Another important framework is Third Space Theory, originally proposed by Bhabha (1994) and adapted into education by Moje et al. (2004). Third Space represents a hybrid learning environment where students' personal, cultural, and academic identities intersect. GH creates such a space by allowing learners to blend personal interests with formal academic inquiry, thus introducing deeper engagement and more authentic learning.

McCurdy et al. (2020) demonstrated the value of Third Space through a GH project with seventh-grade students, showing that responsiveness to real-world problems encouraged deeper thinking and STEM-based solutions. Reuer (2017) explored the effects of GH on science identity and found qualitative gains in self-efficacy, although quantitative measures showed limited short-term impact. These findings suggest that Genius Hour may enhance academic identity and engagement over time, particularly when aligned with students' interests.

Similarly, Opsahl (2018) investigated the effects of Genius Hour on environmental awareness among ninth-grade students. The study reported minimal shifts in environmental attitudes post-intervention, implying that deeply held beliefs may require longer exposure

for meaningful change. Nonetheless, the study underscores the importance of aligning Genius Hour projects with students' values to maximize impact.

Genius Hour is also reflective of progressive educational philosophies advocated by Maria Montessori and John Dewey. Montessori's method (1912) emphasizes curiosity-driven learning, while Dewey's (1938) concept of experiential education promotes intentional, student-led inquiry. Genius Hour embodies both philosophies by encouraging learners to pursue knowledge through personal exploration and critical engagement.

In sum, the theoretical review integrates constructivism, connectivism, constructionism, and Third Space theory to frame GH as a dynamic, student-centered strategy. These theories collectively support the hypothesis that GH enhances academic achievement and study engagement by fostering autonomy, creativity, and relevance in learning experiences.

2.11 Empirical Review

The empirical literature demonstrates growing interest among educators in implementing Genius Hour teaching strategy (GH) as an innovative instructional strategy. Numerous studies and practitioner reports reflect the positive experiences of teachers who have adopted GH in diverse classroom contexts. These studies highlight GH's effectiveness in enhancing critical thinking, authentic and lifelong learning, research capabilities, social interaction, and study engagement. GH contributes significantly to both student development and broader educational objectives by establishing an environment that nurtures creativity, autonomy, and purposeful inquiry.

Education plays a pivotal role in driving national development. As a tool for equipping individuals with philosophical, political, and curricular awareness, it serves as a critical link between teacher preparation and professional growth. A robust education system cultivates an attractive, student-centered learning environment supported by systemic integration and services. In particular, Genius Hour aligns with education's broader mission by encouraging student empowerment, aligning learning with labor market needs, and developing innovative thinking. As educational reforms prioritize skill development, Genius Hour presents itself as a transformative model that shifts students from passive knowledge consumers to active, skillful contributors.

Ruar (2017) found that integrating Genius Hour teaching strategy in science education enabled students to operate as "mini scientists," granting them autonomy to explore personal curiosities and deepen their scientific understanding. Students benefited from enhanced self-management and research skills, reflecting their growth as independent learners. Jennifer Bernstein (2014) emphasized the value of Genius Hour in giving students structured time to pursue self-chosen inquiries, thereby increasing intrinsic motivation, creativity, and self-directed learning.

Simoes (2015) found that students participating in Genius Hour began formulating and refining their own inquiry questions, suggesting the development of higher-order thinking skills. While this aligns with the goals of inquiry-based learning, the study offers limited methodological detail regarding how these cognitive gains were measured. The absence of explicit assessment tools, sample information, or analytical procedures reduces the strength of the conclusions and restricts generalizability beyond the specific classroom context. Thus, although the findings are promising, they must be interpreted cautiously.

Hall (2018) examined secondary teachers' perceptions of implementing Genius Hour on a school-wide scale and reported improvements in teacher–student relationships, guided research practices, and student motivation. However, because the study relied on self-reported perceptions rather than direct measures of engagement, the findings may reflect subjective interpretations rather than observable behavioral changes. Additionally, the research was conducted in a secondary school environment, making its implications less directly transferable to preservice teacher education, where the instructional conditions and learner needs differ significantly.

Together, these studies indicate that Genius Hour has potential to enhance inquiry skills, motivation, and relational aspects of learning, yet they also highlight methodological and contextual gaps particularly the absence of controlled empirical research in higher education and teacher preparation settings. This reinforces the need for the study, which systematically examines the effects of Genius Hour on prospective teachers' engagement and achievement within a university context.

Moreover, Downes and Figg (2018) studied pre-service teachers and reported that Genius Hour improved their participation, creativity, and comfort with technology-

enhanced instruction. These findings are particularly relevant for teacher education programs, where Genius Hour supports reflective practice and encourages the integration of modern pedagogical tools.

Genius Hour has significant potential to promote personalized learning by integrating student autonomy and creativity into standard curricula. As Darling-Hammond et al. (2017) note, effective implementation depends on teacher preparedness and evidence-based practices. While it can enhance engagement, motivation, and higher-order thinking, its success requires institutional support, curriculum alignment, and structured guidance to avoid superficial learning or inequities (Hall, 2018). Recent research, such as that by Ramadhan (2023), further supports the benefits of Genius Hour in enhancing both intrinsic and extrinsic motivation. Genius Hour also fosters essential 21st-century skills, including critical thinking, collaboration, problem-solving, and independent learning. The approach enhances learning ownership, self-confidence, and personal relevance, which in turn boost study engagement. GH can be adapted for all educational levels, from early childhood to tertiary education. However, its implementation varies significantly depending on national education policies, cultural expectations, and institutional resources. This variability underscores the need for more localized studies to understand the contextual nuances of GH.

Andrews et al. (2017) found that practicum experiences enhance teacher candidates' reflective practice and pedagogical skills through experiential learning. Similarly, Genius Hour encourages pre-service teachers to explore personal and professional interests, fostering engagement, critical inquiry, and the development of practical teaching competencies.

Despite its widespread adoption in international contexts, GH remains in the exploratory stage within many teacher education programs. Existing literature indicates its potential to enhance learner identity, autonomy, and engagement, yet its impact on academic performance and teacher preparation remains underexplored in certain regions. This is especially true in Azad Jammu and Kashmir, where contextual challenges and traditional teaching paradigms continue to shape educational practice.

To address this gap, the study investigates the impact of GH on study engagement

(cognitive, emotional, and behavioral) and academic achievement among prospective teachers enrolled in a School Management course at the University of Azad Jammu and Kashmir, Kotli. While researchers like Maiers (2017) and Coke (2018) have provided qualitative insights into GH experiences globally, there is a lack of empirical data from Azad Jammu and Kashmir. This study seeks to contribute to the literature by providing evidence from a local context, examining how GH influences learner motivation, engagement, and academic success.

By adopting GH within a controlled experimental design, the research offers a timely and contextually relevant exploration of how student-centered, inquiry-based instruction can transform teaching and learning practices in teacher education. It positions GH not only as a pedagogical innovation but also as a meaningful strategy for preparing future educators to become reflective, engaged, and effective practitioners.

The empirical literature reveals a growing body of work focused on the Genius Hour teaching strategy (GH) teaching strategy, underscoring its significance in enhancing both student engagement and academic achievement. Educators across various contexts have expressed enthusiasm for integrating GH into their teaching practices. Numerous studies report that GH fosters the development of 21st -century skills such as critical thinking, problem-solving, creativity, collaboration, and intrinsic motivation.

GH is praised for its capacity to stimulate lifelong learning, research competencies, social interaction, and independent initiative among students. Philosophically rooted in progressive and student-centered pedagogies, GH promotes an education system that is dynamic, inclusive, and aligned with labor market demands. Its student-driven nature cultivates ownership, curiosity, and innovation, contributing to the broader objectives of human capital development and national progress.

Notably, GH has demonstrated its capacity to impact student motivation, academic performance, and engagement. For instance, Ruar (2017) reported that integrating GH into science education stimulated self-direction and allowed students to operate as "mini scientists." Bernstein (2014) and Simoes (2015) emphasized that students involved in GH projects developed questioning techniques, self- management, and confidence in their academic work. Hall (2018) found that secondary teachers valued GH for enhancing the

teacher-student bond and promoting guided and collaborative inquiry.

Downes and Figg (2018) explored how pre-service teachers benefited from GH through increased participation, creativity, and digital fluency. Their findings support GH as an effective model for integrating student voice and personalized learning into teacher education. Similarly, Ramadhan (2023) confirmed GH's role in boosting both intrinsic and extrinsic motivation and nurturing essential soft skills.

The following table summarizes key empirical studies on GH and related inquiry-based approaches conducted in United States, Canada, Portugal, Indonesia respectively:

Table 2. 3

Research Studies on Genius Hour

Author(s)	Year	Context & Participants	Key Findings
McCurdy et al.	2020	7th Grade Students	Third Space GH fostered empathy and problem-solving in STEM settings
Reuer	2017	9th Grade Science Students	Positive effect on science identity and self-efficacy; limited quantitative outcomes
<i>Opsahl</i>	<i>2018</i>	9th Grade Environmental Studies	Marginal shifts in attitudes; GH impact limited by pre-existing Values
<i>Hall</i>	<i>2018</i>	Middle School Teachers	Improved teacher- student relationships and professional learning; some logistical barriers

<i>Downes & Figg</i>	2018	Pre-service Teachers	Increased engagement, creativity, and comfort with tech-enhanced Teaching
<i>Bernstein</i>	2014	General Classroom	Student autonomy fostered curiosity, creativity, and self-directed learning
<i>Simoës</i>	2015	K–12 Classrooms	Students enhanced questioning, critical thinking, and information synthesis Skills
<i>Ramadhan</i>	2023	Multi-level Settings	GH increases motivation, self-confidence, critical thinking, and collaboration

Source: Compiled from Bernstein (2014); Simoes (2015); Reuer (2017); Opsahl (2018); Hall (2018); Downes and Figg (2018); McCurdy et al. (2020); Ramadhan et al. (2023)

The table represents the implementation of GH in different countries. Multiple studies from the United States have demonstrated the diverse applications and outcomes of the Genius Hour teaching strategy across various educational contexts. McCurdy et al. (2020) explored the use of a Third Space GH approach with 7th grade students in STEM education, finding that it thrived empathy and enhanced problem-solving skills. Reuer (2017) investigated the effects of Genius Hour teaching strategy on 9th grade science students, reporting improvements in science identity and self-efficacy, although quantitative outcomes remained limited. Similarly, Opsahl (2018) observed only marginal shifts in student attitudes in a 9th grade environmental studies class, suggesting that pre-existing values may constrain GH's impact. Hall (2018) focused on middle school teachers

and highlighted improved teacher-student relationships and professional growth, though logistical challenges were noted. Bernstein (2014) emphasized that student autonomy in general classroom settings promoted curiosity, creativity, and self-directed learning. Collectively, these U.S.-based studies suggest that Genius Hour teaching strategy enhances affective and motivational aspects of learning, though structural or contextual barriers may influence its effectiveness.

2.11.1 United States

In the United States, Genius Hour has gained substantial traction as an instructional strategy aimed at fostering student autonomy, creativity, and intrinsic motivation. Reuer (2017) conducted a longitudinal case study involving 136 high school freshmen and found that implementing Genius Hour in a science context significantly enhanced students' self-efficacy, their ability to pose scientific questions, and their competence in data analysis. Although shifts in students' science identity were primarily qualitative, the study highlighted the deep impact of inquiry-based, student-directed learning. Additionally, reports from classrooms in Illinois and Michigan have demonstrated that Genius Hour positively influences learner engagement and promotes critical thinking when implemented with adequate scaffolding and reflective practices (Education Week, 2019). Similarly, Edutopia featured a detailed case study of a fifth-grade classroom where Genius Hour was embedded throughout the academic year, leading to increased student participation, collaboration, and ownership of learning (Edutopia, 2020). These studies collectively affirm that in U.S. educational contexts, Genius Hour provides a powerful platform for developing 21st-century learning skills and deepening academic engagement through student-driven inquiry.

2.11.2 Canada

In a Canadian context, Downes and Figg (2018) studied the use of Genius Hour teaching strategy with pre-service teachers and found that it increased student engagement, creativity, and confidence in using technology-integrated teaching practices. The findings underscore the potential of GH in teacher education programs to foster innovation and comfort with learner-centered, tech-enhanced instruction. This suggests that Genius Hour

teaching strategy not only benefits K–12 students but also holds significant promise for shaping future educators.

2.11.3 Portugal

Simoes (2015) examined Genius Hour teaching strategy implementation across K–12 classrooms in Portugal, with a focus on enhancing inquiry-based skills. The study reported that students involved in GH demonstrated improved questioning abilities, critical thinking, and synthesis of information. This suggests that the strategy is effective in cultivating higher-order thinking skills, particularly when applied in an educational culture that supports student inquiry and autonomy.

2.11.4 Indonesia

Ramadhan (2023) conducted a study in Indonesia across multi-level educational settings, finding that Genius Hour teaching strategy significantly increased students' motivation, self-confidence, critical thinking, and collaboration. The study highlighted GH's versatility and adaptability across different academic levels and contexts, reinforcing its effectiveness in promoting holistic student development in both academic and interpersonal domains.

These findings highlight how Genius Hour, particularly when adapted to local educational contexts, can drive meaningful change in instructional practice. Despite its global spread, implementation remains context-dependent, influenced by national curricula, policy, resources, and cultural norms. In countries such as Pakistan specifically in regions like Azad Jammu and Kashmir GH remains under-researched. Furthermore, GH's connections to project-based learning (PBL) reinforce its academic validity. Studies such as those by Condliffe et al. (2017) and Summers and Dickinson (2012) demonstrate that PBL approaches outperform traditional instruction in terms of achievement and college readiness. GH extends this tradition by incorporating passion-driven learning and student choice, a concept described by Juliani (2014) as "radical autonomy."

Robinson (2018), citing Daniel Pink, affirmed that autonomy enhances motivation and learning ownership. Similarly, LeGeros et al. (2022) noted GH's potential in

progressing creativity, digital literacy, and global awareness. In alignment with Bloom's revised taxonomy (Anderson et al., 2001), GH cultivates higher-order thinking through tasks involving evaluation, synthesis, and creativity.

Additionally, empirical evidence supports Genius Hour as a tool for advancing transformative learning environments. In line with connectivism and constructionist theories, Genius Hour encourages learners to create knowledge collaboratively and contextually. This paradigm is further validated by the notion of "Third Space" a concept introduced by Bhabha (1994) and contextualized in education by Moje et al. (2004) where formal curriculum meets student interests to generate deep learning.

Although Genius Hour is often discussed in blogs and practitioner literature (Farber, 2017; Schneider, 2018; Teach Thought Staff, 2020), peer-reviewed academic research remains scarce. ERIC database searches reveal minimal empirical studies, suggesting the need for more rigorous investigations especially in teacher education and higher education contexts.

Teacher quality in Azad Jammu and Kashmir (AJ&K) remains a critical issue, largely due to low entry qualifications and weak teacher preparation systems. Farooq, 2016 mentioned that many primary teachers enter the profession with minimal formal education and limited pedagogical training, which directly affects classroom performance and student learning outcomes. Teacher certification programs in AJ&K often lack trained mentors, meaningful teaching practice, and proper monitoring structures, while political interference in appointments further undermines professional standards. These systemic weaknesses limit teachers' ability to adopt modern, student-centered instructional practices, demonstrating the need for innovative approaches such as the Genius Hour strategy to strengthen behavioral engagement and enhance professional competence among prospective teachers

By systematically exploring the relationship between GH and the multidimensional nature of SE, the study contributes to the broader discourse an effect of GH on study anagement and academic achievement in teacher preparation programs.

To fill this gap, the present study explores how Genius Hour effect academic achievement and multidimensional study engagement among prospective teachers

enrolled in the School Management course at the University of Kotli, Azad Jammu and Kashmir, Kotli. This research is particularly significant as it is among the first empirical efforts to assess Genius Hour in AJ&K.

By integrating Genius Hour into teacher education, the study provides actionable insights for curriculum designers, educational policymakers, and teacher educators seeking to modernize pedagogical approaches and inspire future educators. Genius Hour is not just a teaching strategy; it is a philosophy that empowers learners to think critically, act independently, and engage meaningfully with their world.

2.12 Genius Hour Teaching Strategy in Global Contexts

Genius Hour teaching strategy (GH) has gained international momentum as a student-centered, inquiry-based pedagogical model that nurtures curiosity, creativity, and autonomy across diverse educational contexts. Originating from innovation practices in corporate settings like Google, Genius Hour has been adapted globally to foster personalized learning, particularly within primary and secondary education. For instance, in Brazil, Machado et al. (2020) implemented Genius Hour with 5th-grade students, highlighting how learners successfully engaged in self-directed projects that connected personal passions with real-world problem-solving. Similarly, in North America and Europe, Genius Hour has been reported to enhance students' motivation, critical thinking, and ownership of learning through structured yet flexible frameworks that support exploration and presentation of student-led inquiries (Juliani, 2014; Maiers, 2017). Despite variations in educational systems, Genius Hour consistently promotes 21st-century skills such as collaboration, communication, and innovation, making it a promising instructional strategy in both developed and developing countries. Its adaptability to different curricular goals, cultural contexts, and student needs positions Genius Hour teaching strategy as a globally relevant approach for transforming class engagement and promoting lifelong learning.

2.12.1 Genius Hour Teaching Strategy in Developing Countries

The implementation of the Genius Hour teaching strategy in developing countries is gradually gaining traction, particularly as educators seek innovative methods to enhance student engagement and academic achievement. Genius Hour, which allocates dedicated

time for students to explore topics of personal interest, aligns well with the educational needs of these regions, where traditional pedagogies often dominate.

In Indonesia, for instance, Genius Hour has been explored as a means to counteract learning loss exacerbated by the COVID-19 pandemic. Ramadhan et al. (2023) conducted a literature study highlighting Genius Hour's potential to boost student motivation, creativity, and self-directed learning. Their findings suggest that GH can be integrated into various educational levels, from kindergarten to higher education, presenting a more personalized learning experience.

Similarly, in India, the concept of self-organized learning environments (SOLEs), pioneered by Sugata Mitra, resonates with Genius Hour principles. Mitra's "Hole in the Wall" experiments demonstrated that children could independently acquire knowledge when provided with minimal resources and guidance. This approach has been expanded globally, emphasizing the importance of curiosity-driven learning and minimal teacher intervention.

In Brazil, Genius Hour has been implemented in elementary education to encourage student autonomy and creativity. Machado et al. (2021) reported that fifth-grade students engaged in Genius Hour projects exhibited increased enthusiasm and ownership of their learning, indicating the strategy's effectiveness in cultivating a more engaging classroom environment.

Despite these promising developments, the adoption of Genius Hour in developing countries faces challenges, including limited resources, lack of teacher training, and rigid curricula. However, the positive outcomes observed in various contexts underscore Genius Hours potential as a transformative educational strategy. By promoting student agency, creativity, and engagement, Genius Hour aligns with contemporary educational goals and offers a viable pathway to enhance learning experiences in resource-constrained settings.

Kuhn (2022) explores the implementation of the Genius Hour teaching strategy (GH) approach in Saudi classrooms, framing it as an inquiry-based instructional method that encourages student autonomy, passion-driven learning, and project-based inquiry. Rooted in Google's 20%-time policy, Genius Hour empowers students to explore topics of personal interest during dedicated class periods, with teachers acting as facilitators rather

than direct instructors. The chapter outlines the six key principles of Genius Hour, including purpose-driven learning, student-led exploration, public sharing, and consistent time allocation (Heick, 2019). Drawing from action research by Harrington (2017), which successfully applied Genius Hour with Year 6 boys in Sydney, the author argues that it enhances collaboration and engagement. The study also incorporates qualitative interviews with three American educators, including A.J. Juliani an advocate of inquiry-driven education and two educators from Parkview High School, who shared insights on technology integration, classroom management, and planning strategies for Genius Hour. Additionally, the author conducted a Google Form survey with 140 Saudi teachers. Findings revealed that both Western and Saudi educators recognize Genius Hour's value in enhancing student motivation, ownership of learning, and presentation skills. The chapter concludes that Genius Hour is an adaptable and effective instructional method suitable for fostering 21st-century skills in Saudi classrooms.

Fish (2023) explored how school leaders' attitudes, knowledge, and institutional structures influence the implementation of Genius Hour. Using a case study in a Mid-Atlantic public-school system, the study found that while leaders generally supported Genius Hour, effective implementation required more than positive attitudes it also depended on professional development, flexible scheduling, and systemic support. The research highlights that leadership capacity and school culture play a critical role in sustaining Genius Hour.

Coke (2018) explores how implementing Genius Hour teaching strategy in an English methods course empowered teacher candidate to enhance their digital pedagogical skills and personal well-being. By dedicating regular class time to self-directed passion projects, candidates used blogs to document and showcase their learning doubling as digital portfolios for future employment. The study revealed that this process developed deeper engagement, creativity, and technological confidence. Moreover, pursuing individual passions provided crucial balance and mental health benefits amid the demands of teacher preparation. Coke concludes that Genius Hour teaching strategy effectively enriches both professional competence and emotional resilience in aspiring educators.

Reuer (2017) conducted a two-year, mixed-methods exploratory case study with 136 high school freshmen in a STEM classroom to investigate the effects of Genius Hour teaching strategy on students' science identity and self-efficacy. Quantitative data from pre- and post-intervention surveys showed a statistically significant, though small, increase in students' belief in their scientific capabilities and their use of science practices like questioning, problem definition, and data analysis all aligned with Next Generations Science Standards. Qualitative interviews and group discussions revealed stronger themes: students reported enhanced science identity, greater confidence, and a growing sense of ownership over their learning. Reuer concluded that while quantitative gains were modest, there was substantial qualitative evidence indicating that Genius Hour teaching strategy positively influenced students' self-perception and engagement within science.

For a comprehensive understanding of Genius Hour teaching strategy (GH) implementation across diverse educational settings, the literature review by Ramadhan et al. (2023) offers valuable insights. The study explores GH's theoretical foundations, its integration within various curricula, and the pedagogical shifts required to support inquiry-based learning. It highlights how GH brings up student agency, creativity, and deep engagement when supported by flexible instructional design and teacher facilitation. The review also discusses the challenges educators face, including assessment practices, time constraints, and institutional readiness, thus providing a well-rounded view of GH's potential and practical considerations for effective implementation.

2.12.2 Practices of Genius Hour Teaching Strategy in Developed Countries

In developed countries, the Genius Hour teaching strategy has garnered increasing attention as an innovative approach to encourage student engagement and enhance academic performance. Originating from Google's "20% Time" concept, Genius Hour allows students to dedicate a portion of their instructional time to pursue self-directed, passion-driven projects (Juliani, 2015). This pedagogical shift aligns with constructivist and learner-centered paradigms that prioritize autonomy, creativity, and intrinsic motivation.

Empirical research conducted in the United States demonstrates that Genius Hour implementation can positively influence students' identity formation and self-efficacy,

particularly in science education. A mixed-methods study by Ketterling (2022) found that while quantitative gains in science self-efficacy were modest, qualitative data revealed substantial growth in students' confidence and ownership of learning through Genius Hour projects. Similarly, in Vermont, Genius Hour also referred to as "Passion Projects" or "Brainado" has been embedded into personalized learning plans to empower students to explore topics of interest. Educators report increased student motivation and deeper learning as a result of such practices (Stanton, 2019).

Teacher perceptions of Genius Hour have also been explored in multiple case studies. Tammaro (2021) investigated the experiences of secondary-level educators and found that while Genius Hour promoted higher levels of student engagement, educators often grappled with aligning these activities with standardized curricular expectations and assessment frameworks. Furthermore, the successful implementation of Genius Hour is heavily influenced by school leadership. According to research by Manthey and Irby (2023), supportive school systems, adequate professional development, and administrative encouragement are crucial to sustaining Genius Hour practices in schools.

Collectively, these studies underscore that while Genius Hour is a promising pedagogical strategy in developed countries, its success depends on a supportive infrastructure, informed educators, and flexible curriculum design. These conditions allow Genius Hour to function as a transformative learning model that enhances both academic achievement and study engagement.

2.12.3 Genius Hour Teaching Strategy in Pakistan

The implementation of the Genius Hour teaching strategy in Pakistan is an emerging area of interest, particularly in the context of enhancing academic achievement and study engagement and among prospective teachers. While comprehensive empirical studies specific to Pakistan on Genius Hour teaching strategy are absent, the foundational principles of Genius Hour align well with the educational reforms and pedagogical shifts occurring within the country. As Pakistan continues to move toward student-centered learning and competency-based curricula, Genius Hour offers a promising framework for furthering creativity, autonomy, and critical thinking among students.

This study contributes to the existing literature by providing a localized perspective

on Genius Hour implementation in Pakistan, particularly within the B.Ed. (Hons) Elementary program at the University of Kotli, Azad Jammu and Kashmir., the study aims to bridge a critical research gap and offer insights for scaling innovative teaching strategies in similar educational contexts by examining Genius Hour's effect on academic achievement and study engagement.

2.13 Prospective Teachers

Prospective teachers, often defined as individuals currently enrolled in pre- service teacher education programs, represent a critical population in shaping the future of education. Their beliefs, competencies, and pedagogical preparedness significantly influence the quality of instruction and learning experiences they later provide in classrooms (Darling-Hammond, 2017). Within the context of teacher education, there is a growing emphasis on not only developing subject-specific knowledge and classroom management skills but also fostering critical thinking, reflective practices, and student-centered pedagogies. These competencies are essential in preparing prospective teachers for the complex, diverse, and evolving needs of modern educational settings.

In developing countries, including Pakistan, the preparation of prospective teachers is often challenged by traditional instructional models, overcrowded classrooms, rigid curricula, and limited exposure to innovative pedagogical strategies (UNESCO, 2021). Within the Bachelor of Education (B.Ed. Hons) Elementary program, the School Management course holds particular significance, as it equips prospective teachers with essential knowledge regarding planning, leadership, resource utilization, human resource development, financial management, and policy interpretation in educational institutions. However, conventional lecture-based teaching in this course may not sufficiently engage pre- service teachers or stimulate the types of deep learning and inquiry required for effective school leadership. This gap highlights the need for Genius Hour teaching strategy (GH) model, which promotes autonomy, creativity, and authentic learning experiences.

The Genius Hour teaching strategy is particularly relevant for teacher education programs that seek to enhance prospective teachers' academic achievement and study engagement across its multiple dimensions cognitive, behavioral, emotional, and classroom. By allowing students to explore topics of personal interest within the framework

of the course, Genius Hour teaching strategy supports intrinsic motivation and creates a sense of ownership over learning (Horigan, 2018). This is especially valuable for prospective teachers, who not only need to internalize content knowledge but also develop an appreciation for innovative, student-centered methodologies they can later apply in their own classrooms. As research has shown, prospective teachers are more likely to adopt pedagogies that they have experienced as learners (Wideen et.al., 1998). Therefore, embedding Genius Hour teaching strategy within teacher education directly influences not only current engagement and achievement but also long-term teaching practices.

Furthermore, engaging prospective teachers through innovative instructional models has been linked with enhanced professional identity formation, reflective capacity, and resilience (Beauchamp & Thomas, 2009). When prospective teachers participate in project-based and inquiry-driven activities such as those promoted through Genius Hour, they are encouraged to connect theory with practice, critically analyze educational issues, and engage more deeply with course content. These activities align with constructivist and experiential learning theories, which posit that knowledge is best constructed through active, meaningful engagement.

Moreover, study engagement has emerged as a pivotal construct in understanding the academic experiences of pre-service teachers. Salmela-Aro, et.al., (2016) emphasize that study engagement plays a central role in shaping learners' daily experiences, contributing to motivation, academic persistence, and positive educational outcomes. In the context of prospective teachers, engagement is particularly crucial, as it lays the groundwork for the development of long-term professional competencies and attitudes. The multidimensional model of engagement proposed by Fredricks, Blumenfeld, and Paris (2004), which includes cognitive, behavioral, and emotional dimensions, provides a valuable framework for assessing how teacher candidates interact with course content, instructional strategies, and their learning environments. Recent scholarship has also included class engagement as a distinct and contextually important aspect, particularly relevant in settings where students are preparing to teach in classroom-based environments (Reeve & Tseng, 2011).

In this light, the integration of the Genius Hour teaching strategy in the School Management course serves a dual purpose. First, it enhances academic achievement by aligning learning tasks with students' interests and encouraging in-depth exploration of meaningful educational topics. Second, it elevates study engagement by addressing the cognitive (e.g., sustained attention, deep learning), emotional (e.g., enthusiasm, enjoyment), behavioral (e.g., participation, persistence), and classroom (e.g., collaboration, discourse) dimensions of learning. These outcomes are particularly significant in developing country contexts, where educational reforms often face structural and cultural constraints.

In conclusion, prospective teachers are at a pivotal stage in their professional journey, where experiences within teacher education programs significantly shape their identities, beliefs, and instructional practices. Embedding innovative teaching strategies such as Genius Hour teaching strategy within foundational courses like “School Management” provides a promising pathway for enhancing both academic achievement and multidimensional study engagement. Such approaches not only improve immediate learning outcomes but also prepare future educators to become reflective, creative, and student-centered practitioners an imperative for educational progress in both local and global contexts. As discussed by Andrews et al. (2017) explore how Genius Hour teaching strategy can serve as a powerful inquiry framework for professional learning within a Professional Development School (PDS) partnership. Through case examples involving teacher candidates and practicing middle school educators, the article demonstrates that allowing educators to pursue passion-driven inquiries enhances ownership, reflection, and application of knowledge in practice. Participants generated inquiry questions rooted in daily teaching challenges, gathered evidence, created resources, and shared outcomes via blogs and professional learning events culminating in a Genius Hour teaching strategy Fair that facilitated reciprocal learning. This study found that this approach meets high-impact professional learning standards (Dana & Yendol-Hoppey, 2014) by being teacher-centered, practice- grounded, collaborative, and change-focused. Ultimately, the authors argue that passion-fueled inquiry encourages educators to adopt a sustained “inquiry stance,” contributing to meaningful transformation in teaching and learning.

Moreover, Downes and Figg (2019) integrated Genius Hour teaching strategy into an Ontario- based teacher education technology methods course to enhance preservice

teachers' Technological Pedagogical Content Knowledge (TPACK) and passion for instructional design. Over weekly sessions, 35 teacher candidates selected passion projects, documented their learning through blogs, and created digital portfolios. Qualitative analysis of surveys, reflections, portfolios, and interviews identified three key outcomes: increased engagement and enjoyment, enhanced creativity and well-being, and deeper confidence and competence in technology integration. A notable proportion reported personal gains roughly two-thirds noted improvements in creativity and participation and many planned to apply Genius Hour teaching strategy in their future classrooms. The authors recommend extending project timelines to support more meaningful outcomes and highlight Genius Hour teaching strategy as an effective strategy for building 21st-century skills and preparing educators for technology-rich teaching environments.

In summary, the reviewed literature highlights the growing recognition of learner-centered pedagogies, such as the Genius Hour teaching strategy, as powerful tools for enhancing academic achievement and multidimensional study engagement in teacher education. Horrigan (2018) developed a Genius Hour teaching strategy unit aimed at boosting motivation and engagement among K–2 students. The project guide provides teachers with structured lessons, templates, and reflection strategies to support students in selecting passion-driven topics and completing meaningful projects. By dedicating regular class time to student-led inquiry, the study found that learners exhibited increased ownership, creativity, and intrinsic motivation. The author emphasizes that Genius Hour teaching strategy can address disengagement and enhance classroom vitality, representing a practical and effective approach for elementary educators facing motivation challenges.

While traditional instructional approaches continue to dominate in many developing contexts, innovative strategies that promote autonomy, inquiry, and relevance have promised deeper learning and sustained engagement. Study engagement encompassing cognitive, behavioral, emotional, and classroom dimensions emerges as a critical mediator of educational success, particularly among prospective teachers whose professional identities and instructional philosophies are still forming.

To address this issue, recent national studies and policy analyses (Naveed & Mehmood, 2020; Rehman & Khan, 2018) that highlight how teacher education institutions

in Pakistan continue to rely heavily on conventional instructional methods, with limited incorporation of inquiry-based or student-centered pedagogies. These sources provide evidence-based justification for the assertion that traditional teaching remains the dominant approach in teacher preparation programs in AJ&K.

Although the Genius Hour teaching strategy has been increasingly explored at the primary and secondary school levels in international contexts (Downes & Figg, 2019; Spencer & Juliani, 2017), no empirical studies have examined its use within teacher-education programs in Pakistan. Existing literature on Pakistani teacher education highlights that instructional practices remain predominantly traditional, lecture-based, and content-driven, with limited adoption of innovative, inquiry-oriented pedagogies (Naveed & Mehmood, 2020; Nadeem et al., 2013). Moreover, research in Pakistan has focused primarily on conventional teaching methods, leaving a significant gap regarding how modern, student-centered frameworks such as Genius Hour might influence study engagement or academic achievement among prospective teachers. Therefore, the application of Genius Hour at the preservice teacher-education level remains an unexplored domain, creating a clear empirical gap that necessitates systematic investigation.

The Genius Hour teaching strategy, with its emphasis on choice, creativity, and reflection, aligns closely with these engagement dimensions and offers a compelling model for transforming conventional teacher preparation courses like School Management course offered in semester 8th in the Department of Education at the University of Kotli, Azad Jammu and Kashmir. However, empirical research on its effectiveness in developing country contexts, especially within structured teacher education programs, remains limited. This gap underscores the significance of the present study, which seeks to contribute to the literature by systematically examining the impact of the Genius Hour teaching strategy on both academic achievement and study engagement among prospective teachers in AJ&K teacher education.

CHAPTER 3

RESEARCH METHODOLOGY

Research methodology includes philosophical assumptions, research design, instruments, detail of instruments, population of the study, sample of the study, procedure of experiment, process of data collection and data analysis techniques.

3.1 Philosophical Assumptions

This study primarily adopts a post-positivist worldview, which aligns with its quantitative experimental design aimed at determining the causal impact of the Genius Hour teaching strategy on prospective teachers' academic achievement and study engagement. The post-positivist assumes that reality is objective but imperfectly understood, and can be measured through carefully designed instruments. This worldview supports the use of pre-test and post-test scores to statistically test hypotheses and draw generalizable conclusions. Objectivity, control, and the use of standardized measures guide this aspect of the research, with the belief that knowledge is best generated through systematic observation and analysis of empirical data.

However, to capture participants' lived experiences and perceptions of the Genius Hour teaching strategy, interviews were conducted only with the experimental group. The aim of including interviews is not to generalize findings, but to complement the experimental results by providing contextual depth highlighting the experiences of prospective teachers with Genius Hour. These philosophical underpinnings primarily post-positivist, with limited constructivist orientation provide a coherent foundation for understanding both the measurable effects and the subjective experiences associated with implementing the Genius Hour teaching strategy.

3.2 Research Design

According to McMillan and Schumacher (2006), research design describes the procedures that are used in a study. These procedures include identifying a plan to produce data that are used to answer the research hypothesis. This study employed follows a quantitative experimental research design, specifically employing a pre-test post-test control group design. This approach allows for the comparison of outcomes between an

experimental group exposed to the Genius Hour teaching strategy (GH) and a control group taught through traditional methods.

The primary objective is to determine the effect of Genius Hour teaching strategy on prospective teachers' academic achievement and study engagement. Additionally, interviews were conducted exclusively with participants from the experimental group to gain deeper insight into their experiences with the Genius Hour, thereby enriching the interpretation of quantitative results. A true experimental pre-test post-test control group was designed, with participants randomly assigned to either an experimental group (receiving Genius Hour teaching strategy instruction) or a control group (receiving traditional instruction). Academic achievement was assessed through a teacher made multiple-choice test, while study engagement was measured using a validated engagement scale, encompassing cognitive, behavioral and emotional engagement. After the completion of the intervention, semi-structured interviews were conducted from the experimental group. This aimed to explore participants' perceptions and learning experiences within the Genius Hour teaching strategy framework. The interviews were analyzed using thematic analysis.

At the first step, pretest was conducted of all the 88 students. At second step a matching pair based on the pre-test scores was taken and at the third step one member from each pair was randomly assigned to experimental group and the other one to control group was taken. The experimental group was taught by Genius Hour as it encompasses various aspects, including project planning, implementation, and presentation while the control group was taught by traditional based instructions using lecture method.

The duration of this experiment was four months, sixteen weeks (32 classes). The duration of an educational intervention plays a critical role in determining its effectiveness and the reliability of its outcomes. In educational research, a semester-long period (typically 12 to 16 weeks) is widely regarded as a sufficient timeframe for observing meaningful changes in learning outcomes and engagement behaviors. According to Slavin (2002), experimental studies in educational settings often span a full academic term to ensure that participants have ample time to internalize instructional strategies, engage with content meaningfully, and demonstrate measurable academic and behavioral changes.

Similarly, Belland et al. (2017) emphasized that interventions implemented over the course of a semester allow researchers to assess sustained engagement, deeper cognitive processing, and more reliable academic performance compared to short-term treatments.

Three research instruments were used in the study, a teacher made academic achievement test which was used as pre-test/post-test for the measurement of academic achievement, a study engagement questionnaire developed by researcher to check the level of study engagement before and after the experiment, and an interview protocol for the participants from experimental group.

Genius hour-based instructions were implemented in experimental group. To ensure pedagogical alignment and methodological rigor in the implementation of the Genius Hour, the researcher undertook a certified online professional development course (Appendix-E) titled “*Genius Hour*” offered by CPD College (2024). Drawing on the principles of inquiry-based learning, autonomy, and personalized exploration emphasized in Genius Hour teaching strategy (Kesler, 2018; Spencer & Juliani, 2017), the lesson plans were designed to actively develop study engagement through meaningful student choices, reflective learning, and goal-directed inquiry. The course not only provided instructional models and planning frameworks but also emphasized authentic learning experiences aligned with learners’ interests and academic goals.

After planning units of the course “School Management” for experimental group according to instructional design of the Genius Hour teaching strategy (GH) was grounded in a structured, multi-phase framework that fosters student autonomy, inquiry, and reflective engagement. The Genius Hour teaching strategy (GH) based instructions were implemented through a carefully structured six phase model including, Introduction, Launch, Pitch, Action/Research, Presentation, and Reflection/Assessment adapted to fit the thematic and pedagogical goals. This instructional framework, grounded in inquiry-based learning and student autonomy, provided a scaffolded approach that actively promoted study engagement i.e. cognitive, emotional, and behavioral aspects while boosting academic achievement. Each phase was intentionally integrated into the experimental group's lesson planning and instructional delivery to enhance participants' motivation,

curiosity, and ownership of learning (Juliani, 2014; Ginsberg & Coke, 2019). The detail of all six phases is given here:

The initial phase of the Genius Hour teaching strategy model focused on orienting students to the purpose and process of Genius Hour. It was understood that prospective teachers had no prior experience with this instructional approach. Thus, introductory sessions were dedicated to explaining the philosophy of Genius Hour, emphasizing its emphasis on learner autonomy, creativity, and intrinsic motivation (Brookhouser, 2015; Krebs & Zvi, 2015). Researcher facilitated digital storytelling and multimedia sharing activities, inviting students to reflect on their passions and interests, which later informed their project topics (Ginsberg & Coke, 2019). Brainstorming sessions helped stimulate curiosity and generate potential inquiry questions, while scaffolding support ensured all students could meaningfully participate in idea generation (Juliani, 2014).

During the launch phase, students began to narrow down their interests into specific researchable questions or practical problems relevant to school management. Teachers provided guidelines and project rubrics, ensuring clarity of expectations and academic rigor (Juliani, 2014; Wettrick, 2014). Written action plans were developed collaboratively, encouraging a sense of ownership and planning competency. As recommended in the literature, students were encouraged to access experts or external resources to extend their inquiry beyond the classroom (Coiro et al., 2019). This phase laid the groundwork for deeper investigation by providing structured freedom, where inquiry was guided yet personalized.

The pitch phase was designed to develop communication, critical thinking, and collaboration skills. Students presented concise overviews of their project proposals either in whole-class settings seeking peer and teacher feedback to refine their ideas (Juliani, 2014). These "elevator pitch" sessions simulated real-world communication scenarios, encouraging students to articulate their vision convincingly and persuasively. Teachers played a facilitative role, guiding students to align their projects with course objectives while preserving the inquiry's originality and relevance (Brookhouser, 2015).

The action phase represented the core investigative period, where students conducted research, created digital or physical artifacts, and engaged deeply with their self-

selected topics. Students were given independence over their learning paths, but with scheduled check-ins and reflections to ensure accountability and consistency (Krebs & Zvi, 2015; Wettrick, 2014). These reflective practices not only documented their cognitive processes but also helped in reinforcing metacognitive strategies, which serve as a key driver of deep learning. This stage aligned with the “Create and Take Action” step of the Personal Digital Inquiry (PDI) model, reinforcing active learning and self-direction (Coiro et al., 2019).

Sharing learning outcomes was central to the Genius Hour teaching strategy experience. Students delivered presentations modeled after TED-style talks, showcasing their findings, innovations, or products to their peers and they also invited audiences where feasible (Brookhouser, 2015; TED, n.d.). This public demonstration of learning not only bolstered students' confidence and communication skills but also promoted accountability and pride in their work. Peer and teacher feedback were solicited to support further refinement and self-assessment, thus reinforcing a growth mindset (Juliani, 2014).

In the final phase, structured reflection activities were conducted to help students evaluate their learning journey with Genius Hour. Self-assessment tools such as rubrics, sentence starters, and digital journals, helped students to assess their growth in areas such as creativity, problem-solving, and collaboration (Krebs & Zvi, 2015). Teachers also provided feedback, focusing on the process rather than solely the product a practice aligned with formative assessment strategies in inquiry-based education (Juliani, 2014; McNair, 2020). These reflective activities served to internalize learning, promote deeper engagement, and inform future instructional improvements. Recent literature further emphasizes the value of these reflective and metacognitive practices in enhancing engagement and academic performance (Barber & King, 2023; Reeve, 2021). The six-phase Genius Hour model provided a strong structure to the participants in experimental group. The comprehensive view of these six phases for participants in the experimental group is given in the Genius Hour lesson plans pack, which has been attached as (Appendix-F). Lessons were also planned for control group by following lecture method (Appendix-G).

After the implementation of intervention post-test was also given to both the groups under controlled conditions. The students were instructed by monitoring the external threats. The study included three variables i.e., teaching method (Genius Hour), study engagement, and academic achievement. Genius Hour was the independent variable whereas study engagement, and academic achievement were the dependent variables. Interviews were conducted by the fifteen prospective teachers from the experimental group. To analyze these interviews Gay's (2015) model for qualitative analysis was adopted. This model was selected because it provides a systematic and flexible framework for organizing, coding, interpreting, and drawing meaningful themes from qualitative data in educational research contexts. It was deemed most appropriate for this study as it aligns with the exploratory nature of the research and ensures methodological rigor and clarity in theme generation.

Following was systematic description of the said design:

Groups	pre-test	independent variables	post-test
R	O1	T1	O2
R	O3	T2	O4

Where R is randomly selected participants

T1= Experimental Group (Prospective teachers in 8th semester)

T2= Control Group (Prospective teachers in 8th semester)

O1, O3 = pre-test (test before starting experiment)

O2, O4= post- test (test after conduct experiment)

3.3 Population

The population of the study consists of all prospective teachers enrolled in the B.Ed. Hons Elementary program at University of Kotli, Kotli Azad Jammu and Kashmir.

3.4 Sample and Sampling Technique

The sample of the study was 88 prospective teachers from the Department of Education at UOK AJ&K during the Fall 2024 semester and these prospective teachers were from Batch Fall 2024, who were selected as the participants of this experimental study (Total=88, Experimental group=44, Control group = 44). On the basis of pretest scores participants were assigned to control and experimental group randomly.

3.5 Instruments

In the study, three (03) instruments were used to collect data, one of them was in the form of teacher made academic achievement test (Appendix-A) which was used as pre-test post-test to measure academic achievement , second one was a questionnaire on study engagement(Appendix-B) to check the study engagement of the prospective teachers before and after the experiment, and the third one was an interview protocol(Appendix-C) for collecting in-depth responses by the participants after the completion of experiment.

The detail of instruments is given below:

1. Teacher made test (Academic Achievement)
2. Study engagement scale (Cognitive, Behavioral, Emotional engagement)
3. Interview protocol for experimental group (experience of intervention)

3.5.1 Construction of Test Items

- This test consisted of MCQS on school management course.
- The test comprised of 50 marks.
- Detail description of marks division is as follows:

$$50 \text{ Test items} = 1 \times 50 = 50$$

3.5.2 Preparation of Research Instruments

Research instruments of the study were selected and prepared according to the research design and objectives of the study. Instruments were also prepared under the proper guidance of the supervisor and experts to maintain validity and reliability of each instrument. After the selection and construction of instruments, each instrument was

validated through experts' opinions, and pilot testing was done to check the reliability of the instrument.

The pilot study was conducted with a small sample of prospective teachers ($n = 30$) from affiliated colleges to test the clarity, validity, and reliability of the research instruments, including the Study Engagement Scale and the achievement test. Based on the pilot findings, minor revisions were made to improve item wording, remove ambiguities, and ensure alignment with the study objectives. The reliability coefficients (Cronbach's alpha) obtained during the pilot confirmed the internal consistency of the scales. These insights directly informed the refinement of the final instruments and the overall data collection procedure.

Firstly, a teacher made test was constructed to assess students' academic achievement in core topics of the School Management curriculum. This test included multiple-choice items and was administered as both pre-test and post-test to the control and experimental groups.

Secondly, a study engagement scale was developed to assess students' engagement across three dimensions: cognitive, behavioral, and emotional engagement, based on the framework by Fredricks, Blumenfeld, and Paris (2004) and extended through later adaptations (Reeve & Tseng, 2011; Wang et al., 2016). The scale consisted of 37 items, 11 for measuring cognitive engagement, 12 for behavioral engagement and 13 for emotional engagement respectively, all measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Cognitive engagement items measured deep learning strategies, metacognition, and self-regulation (e.g., "I try to connect what I am learning to things I have learned before"). Behavioral engagement items reflected effort, attention, and classroom participation (e.g., "I attend classes willingly"). Emotional engagement items assessed students' interest, enjoyment, and affective responses to classroom activities (e.g., "I feel happy when I enter my class to attend a lecture").

The items were developed by reviewing and adapting previously validated scales including those by Schaufeli et al. (2002) for academic engagement, Fredricks et al. (2004) for multi-dimensional engagement, and Gunuc & Kuzu (2015) for higher education contexts. The scale underwent expert validation for content relevance and was pilot-tested

with a small group of B.Ed. students from affiliated colleges to ensure clarity and internal consistency prior to data collection.

Thirdly, a semi-structured interview protocol was designed to explore the experiences of participants regarding Genius Hour in the experimental group. Interviews were conducted with fifteen selected participants (15 prospective teachers) from the experimental group to gather in-depth insights into their perceptions, experiences, and reflections regarding the Genius Hour teaching strategy. The interviews were conducted in the Department of Education UoK, AJ&K. The duration of the interviews was 25 to 30 minutes approximately.

3.6 Pre-test Post-test Development

A test was developed which was applied as pre-test and post-test by following the process given below:

3.6.1 Preparation of Tables of Specification

The researcher developed a table of specification related to school management course. The assessment for the School Management course (B.Ed. Hons) consists of 50 multiple-choice items designed to evaluate students' understanding across three cognitive levels: Knowledge (K), Comprehension (C), and Application/Analysis (A). This structure ensures balanced measurement of factual recall, conceptual understanding, and critical thinking skills related to school leadership and management practices. Each table of specification is a representation of proportionate test items.

Table 3. 1*Table of Specification*

Unit No.	Content Area	Knowledge	Comprehension	Application	Total Items
01	Introduction	2	3	1	6
02	Role of Head Teacher as Manager	3	3	2	8
03	Planning the Curriculum	2	3	2	7
04	Health, Safety and Co-Curricular Activities	2	2	1	5
05	Management Structure	2	3	2	7
06	Communication in Schools	1	2	1	4
07	Record Keeping in Schools	2	2	2	6
08	Managing Daily Activities	1	2	1	4
09	School Maintenance	1	2	0	3

3.6.2 Validity of Test Items

Following procedures was adopted to improve the test items constructed by the researcher:

- Table of specification.
- Experts' opinions

3.6.3 Scoring Procedure of Test Items

The scoring procedure for the multiple-choice test was straightforward, objective, and consistent across both pre-test and post-test administrations. Each of the 50 items carried one mark, making the total score 50 marks. An answer (Appendix-D) key was developed by the researcher considering nature of the test items. Responses were scored using an answer key, allowing for uniformity in evaluation. No partial credit was awarded; only fully correct responses received a score of one. Incorrect answers and unanswered

questions were scored as zero. To ensure fairness and accuracy, the same scoring criteria were applied to both the experimental and control groups. The total scores were then statistically analyzed to determine the academic achievement levels of the participants and to evaluate the effect of the Genius Hour teaching strategy in comparison to traditional instructional method.

3.7 Validity of the Instruments

Validity refers to the degree to which an instrument accurately measures what it is intended to measure. In this study, the validity of research instruments was essential to ensure the credibility and meaningful interpretation of the collected data. Instruments were also prepared under the proper guidance of the supervisor and experts to maintain validity of each instrument.

3.7.1 Validation of the Academic Achievement Test

A classroom achievement test was developed to assess students' academic performance in the *School Management* course. To ensure content validity, the test was reviewed by three subject experts from the Department of Education. These experts had substantial experience in curriculum development and teaching the relevant content areas. Based on their feedback, the following revisions were made:

- Some test items were rephrased to improve clarity and alignment with students' comprehension levels.
- Redundant or overlapping items were removed, as they were found to repeat similar concepts.
- The sequence of items was reorganized to improve the logical flow and difficulty progression.
- The total marks and time duration for completing the test were finalized in line with expert suggestions and instructional hours.

3.7.2 Validation of the Study Engagement Scale

The study engagement scale, developed to measure cognitive, behavioral, and emotional engagement, underwent expert review for face and content validity. Faculty

members from the Department of Education evaluated the scale for clarity, relevance, and conceptual consistency as a result of which the following actions were taken.

- The Likert scale was revised for better gradation and response clarity.
- Several statements were rephrased based on language-level suitability for B.Ed. (Hons) Elementary students.
- Items that combined multiple constructs in a single statement were split into two for conceptual clarity.
- Irrelevant or ambiguous items were removed to maintain the scale's focus and coherence.

3.7.3 Validation of the Interview Protocol

The semi-structured interview protocol was also subjected to expert review to ensure alignment with the research objectives, particularly the exploration of prospective teachers' perceptions, experiences, and reflections related to the Genius Hour teaching strategy. Experts confirmed the relevance and adequacy of the open-ended questions, and no major changes were required.

3.8 Reliability of the Instruments

To ensure the internal consistency and dependability of the research findings, reliability analyses were conducted for all three research instruments used in this study. The Academic Achievement Test, developed with 50 multiple-choice items aligned with the School Management course content, was pilot-tested with a sample of students similar to the target population. The test items were constructed to represent various cognitive levels as Knowledge, Comprehension, and Application/Analysis ensuring balanced coverage of course objectives. The KR-20 (Kuder-Richardson Formula 20) was applied to measure internal consistency reliability. The reliability coefficient was found to be 0.78, indicating good internal consistency and proving that the test was suitable for assessing academic achievement consistently across participants.

Similarly, the Study Engagement Scale, comprising of 37 items across cognitive, behavioral, and emotional engagement dimensions, was also pilot-tested on the students of affiliated colleges studying in semester 8th and analyzed for internal consistency using

Cronbach's Alpha. The Cronbach's alpha reliability coefficients were 0.82 for cognitive engagement, 0.79 for behavioral engagement, and 0.85 for emotional engagement each demonstrating strong internal consistency. The reliability was 0.82 of study engagement scale.

For the semi-structured interview protocol, reliability was established through inter-rater agreement during the initial pilot interviews. Feedback from field experts ensured clarity and alignment with the research objectives. The interview protocol was tested with a small group of participants from the experimental group to ensure that the questions elicited meaningful, relevant, and consistent responses across cases. Pilot testing was conducted on the students of affiliated colleges studying in B.Ed. Hons Elementary program to check the radiality of the instruments.

3.8.1 Selection of Teacher

The Genius Hour teaching strategy represents a novel approach to education, garnering attention globally for its innovative methods and techniques. Worldwide, educators are recognizing the need for student-centered, creative, and effective teaching strategies that build critical thinking, problem-solving, and academic excellence. In Pakistan, particularly in Azad Jammu and Kashmir (AJ&K), the educational landscape is evolving, with a growing emphasis on introducing modern teaching methodologies that cater to the diverse needs of students. However, its novelty also means that worldwide only a few educators are familiar with its implementation, making it a highly specialized and sought-after skill. A study by Townsend (2018) indicates that less than 1% of students worldwide have had the opportunity to be engaged in Genius Hour teaching strategy learning, attributing this low participation rate to a lack of awareness and resources that is why for this experimental study, the researcher herself served as the teacher for both the control and experimental groups with prospective teachers at University of Kotli AJ&K. To ensure consistency and minimize bias, the researcher underwent an online training course on the Genius Hour teaching strategy by completing a 5-module online course offered under the Continuing Professional Development (CPD) program from Ireland. This training equipped the researcher with the necessary skills and knowledge to effectively implement the Genius Hour teaching strategy in the experimental group. This enriched

training enabled the researcher to effectively integrate this approach, ensuring a high-fidelity implementation in the experimental group.

3.8.2 Lesson Plan

According to Kesler (2018), effective execution of Genius Hour teaching strategy requires that educators are equipped with both theoretical knowledge and practical tools. The CPD course fulfilled this need by offering a comprehensive overview of planning frameworks, classroom strategies, and reflective practices tailored to inquiry-based instruction. Consequently, the lesson plans prepared and utilized were designed based on internationally recognized Genius Hour, ensuring construct validity in lesson design and alignment with the research objectives. The course also emphasized lesson planning as a dynamic process that integrates student voice and choice, critical thinking, and cross-disciplinary inquiry. By grounding lesson plans in formal training and established literature, the researcher ensured that the implementation of GH in this study was both pedagogically sound and replicable.

Table 3. 2

Timeline for Implementation of GH

Weeks	Genius Hour Phase	Focus / Activities	Purpose / Intended Outcome
1	Phase 1: Introduction	Class 1: Introduction to Genius Hour purpose, benefits, real-world examples. Class 2: Digital storytelling and interest mapping.	Build foundational understanding; explore passions related to school management; initiate engagement.
2	Phase 1: Introduction	Class 1: Brainstorming ideas in small groups.	Stimulate cognitive and emotional engagement; support idea

		Class 2: Refining areas of interest into broad questions.	development; foster autonomy.
3	Phase 2: Launch	Class 1: Finalize topic, discuss ground rules, explain rubrics and timeline. Class 2: Written action plans.	Set clear expectations; promote planning and responsibility; align learning with course objectives.
4	Phase 2: Launch	Class 1: How to conduct research and contact experts. Class 2: Discuss potential sources and project feasibility.	Promote behavioral engagement and inquiry skills; prepare for deeper exploration.
5	Phase 3: Pitch	Class 1: Student pitch presentations (small groups). Class 2: Peer and teacher feedback.	Develop public speaking, clarity of thought, and project refinement.
6	Phase 3: Pitch	Class 1: Revise project plan based on feedback. Class 2: Final pitch presentations to class.	Reinforce peer learning and motivation; ensure clarity and feasibility.
7–10	Phase 4: Action	Class 1: Project work and teacher check-ins.	Deepen engagement through project work; enhance creativity,

		Class 2: Individual or group research and documentation.	critical thinking, and perseverance.
11–12	Phase 4: Action	Independent work and weekly documentation with teacher scaffolding as needed.	Maintain momentum; address challenges; monitor progress.
13	Phase 5: Presentation Preparation	Class 1: Training on TED-style presentations. Class 2: Practice rounds in peer groups.	Build presentation confidence; strengthen communication and reflection.
14	Phase 5: Presentation	Class 1–2: Final student presentations.	Showcase learning and innovation; enhance engagement through peer feedback.
15	Phase 6: Reflection	Class 1: Written self-reflection and self-assessment. Class 2: Teacher feedback using rubrics.	Consolidate learning; foster metacognition; assess engagement and creativity.
16	Phase 6: Closure & Evaluation	Class 1: Group reflection circle, lessons learned. Class 2: Course wrap-up and peer appreciation activities.	Encourage community building; internalize learning outcomes; conclude with emotional and cognitive reflection.

Weeks	Genius Hour Phase	Focus / Activities	Purpose / Intended Outcome
1	Phase 1: Introduction	Class 1: Introduction to Genius Hour purpose, benefits, real-world examples. Class 2: Digital storytelling and interest mapping.	Build foundational understanding; explore passions related to school management; initiate engagement.

3.9 Data Collection

Data were collected using a researcher-developed pre-test and post-test comprising 50 multiple-choice items based on the School Management course content. The pre-test was administered to both the control and experimental groups at the beginning of the semester to assess baseline academic achievement. The pre-test and post-test administration have been included, noting that participants completed paper-based surveys in approximately 30 minutes with a 100% response rate. After the intervention, where the experimental group was taught using the Genius Hour teaching strategy and the control group received traditional instruction, the post-test was administered to measure learning outcomes. For the qualitative responses, data were collected through semi-structured interviews with purposely selected students from the experimental group. These interviews explored participants' perceptions of their engagement cognitive, emotional, behavioral, and study engagement during the Genius Hour teaching strategy. All interviews were recorded with consent and later transcribed for thematic analysis. The data collection process ensured consistency, reliability, and alignment with ethical research standards.

3.10 Data Analysis

Collected data was analyzed through descriptive and inferential statistics using SPSS version 20 software. Mean score was calculated by using descriptive statistics for the data collected through a questionnaire, while an independent sample t-test was applied for the analyses of data from the pre-test and post-test.

Table 3. 3*Summary of data Analysis*

Research Objectives	Hypothesis	Instruments	Data Analysis Techniques
1. To find out the effect of Genius Hour teaching strategy on academic achievement of the prospective teachers.	H₀₁: There is no significant effect of Genius Hour teaching strategy on academic achievement of prospective teachers.	Academic Achievement Test (developed as per Table of Specifications)	Descriptive stats (M, SD) Paired sample t-test
2. To find out the effect of traditional teaching strategy on academic achievement of the prospective teachers.	H₀₂: There is no significant effect of traditional teaching strategy on academic achievement of prospective teachers.	Academic Achievement Test (developed as per Table of Specifications)	Descriptive stats (M, SD) Paired sample t-test
3. To compare academic achievement of prospective	H₀₃: There is no significance difference in the mean scores of	Academic Achievement Test (developed	Descriptive stats (M, SD) Paired sample t-test

	teachers in academic as per Table of control and achievements of Specifications) experimental prospective teachers group. taught through Genius Hour teaching strategy and traditional teaching strategy.		
	H₀₄: There is no significant effect of Genius Hour teaching strategy on cognitive engagement of prospective teachers.		
4. To find out the effect of Genius Hour teaching strategy on study engagement of prospective teachers.	H₀₅: There is no significant effect of Genius Hour teaching strategy on behavioral engagement of prospective teachers. H₀₆: There is no significant effect of Genius Hour teaching strategy on emotional engagement of prospective teachers.	Study Engagement Scale (SES)	Descriptive stats (M, SD) Paired sample t-test

	H₀₇: There is no significant effect of Genius Hour teaching strategy on study engagement of prospective teachers.		
	H₀₈: There is no significant effect of traditional teaching strategy on cognitive engagement of prospective teachers.		
5. To find out the effect of traditional teaching strategy on study engagement of prospective teachers.	H₀₉: There is no significant effect of traditional teaching strategy on behavioral engagement of prospective teachers.	Study Engagement Scale (SES)	Descriptive stats (M, SD) Paired sample t-test
	H₀₁₀: There is no significant effect of traditional teaching strategy on emotional engagement of prospective teachers.		
	H₀₁₁: There is no significant effect of traditional teaching		

	strategy on study engagement of prospective teachers.		
6. To compare study engagement of prospective teachers in control and experimental group.	H₀₁₂: There is no significance difference in the mean scores of cognitive engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy. H₀₁₃: There is no significance difference in the mean scores of behavioral engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy. H₀₁₄: There is no significance	Study Engagement Scale (SES)	Independent sample t-test

difference in the
mean scores of
emotional
engagements of
prospective teachers
taught through
Genius Hour
teaching strategy
and traditional
teaching strategy.

H₀₁₅: There is no
significance
difference in the
mean scores of study
engagement of
prospective teachers
taught through
Genius Hour
teaching strategy
and traditional
teaching strategy.

H₀₁₆: There is no
statistically
significant
relationship among
cognitive
engagement,
behavioral
engagement, and
emotional

Study

Engagement

Scale

Covariance

	engagement of prospective teachers in the post- experimental groups		
7. To explore the experiences of the participants in an experimental group.	Interview protocol	Thematic analysis	

3.11 Threats to Internal Validity of the Experiment

The internal threats to the validity of the experiment are as given below:

Table 3. 4

Internal threats to Validity

Threat to Internal Validity	Strategy for Control	Details / Explanation
History	Same learning material and environment for both groups	Both the control and experimental groups received instruction using the same curriculum content, class schedule, and learning conditions to eliminate the influence of external historical events.
Maturation	Match participant age and control experiment duration	Participants in both groups were of approximately the same age. The experiment was limited to one semester to reduce the effect of natural maturation over time.

Threat to Internal Validity	Strategy for Control	Details / Explanation
Testing	Alter the item order in post-test	To minimize testing effects (e.g., familiarity with test format), the same instrument was used in pre- and post-tests, but the sequence of items were altered in the post-test.
Instrumentation	Use consistent tools and conditions	Two validated instruments were used to measure study engagement and academic achievement. For instruments repeated in both tests, only question order will change. The same learning environment were used during both test administrations to maintain uniformity.

Furthermore, pilot testing and validation of the instrument was also considered. A table of specification for the construction of test (pre-test and post- test) was developed by dividing whole course outline of school management course into five sections and ten items from the five sections were selected so there were total 50 items in test.

3.12 Threats to external Validity of the Experiment

The external threats to the validity of the experiment are given below;

Table 3. 5

External threats to validity

Threat to Internal Validity	Strategy for Control	Details / Explanation
Pre-test Treatment Interaction	Pre-test scores were kept confidential	Participants were not informed of their pre-test scores to prevent any influence on their engagement or performance in the treatment.
Treatment Diffusion	Groups were advised not to share information	Participants in both control and experimental groups were requested not to share materials or experiences with members of the opposite group.
Experimenter Effects	Single teacher taught both groups	The researcher personally delivered instruction to both groups to ensure consistency and reduce bias.

3.13 Ethical Consideration

The researcher took permission by the head of the Department of Education to conduct experiment in the classroom. Data collection from participants began once authorization has been obtained from the Department head. The researcher took ethical considerations such as informed permission, confidentiality, anonymity, and conflict of interest into account. There is not any plagiarism in the researcher's work. The researcher conducted experiment personally and considered all ethical issues. Participants were also informed before the pre-test and the purpose of pre-test was also shared with them. Throughout the study the confidentiality of the participants was maintained. Classroom environment was same as in experimental and control groups.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the interpretation and analysis of the data according to the hypotheses of the study. This chapter is divided into two sections as section one is about quantitative data analysis and section two is about analysis of interviews conducted by the participants from experimental group.

4.1 Section one (Quantitative data Analysis)

Here is the analysis based on quantitative data under the section one.

Hypothesis 1

H₀₁: There is no significant effect of Genius Hour teaching strategy instructional method on academic achievement of prospective teachers.

Table 4. 1

Effect of GH on Academic Achievement of prospective teachers

Groups	N	Mean	SD	<i>T</i>	<i>Df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Trad	44	17.26	3.045	-37.603	43	.000
GH	44	28.77	5.076			

Table 4.1 reveals that the calculated t-value (-37.603) with 43 degrees of freedom has a p-value of .000, which is less than the significance level of 0.05. Therefore, H₀₁ was rejected. This indicates a statistically significant difference between the academic achievement scores of prospective teachers taught through the Genius Hour strategy (M = 28.77, SD = 5.076) and those taught through traditional instruction (M = 17.26, SD = 3.045). The results show that the Genius Hour teaching strategy had positive effect on the academic achievement of prospective teachers in the School Management course.

Hypothesis 2

H₀₂: There is no significant effect of traditional teaching strategy on academic achievement of prospective teachers.

Table 4. 2

Effect of traditional on Academic Achievement of prospective teachers

Groups	N	Mean	SD	T	df	P value Sig(2- tailed)
Trad	44	12.09	2.126	-36.025	43	.000
GH	44	17.26	3.045			

Table 4.2 indicates that the calculated t-value (-36.025) with 43 degrees of freedom has a p-value of .000, which is less than the significance level of 0.05. Therefore, H₀₂ was rejected. This result suggests a statistically significant difference in academic achievement scores of prospective teachers taught through the traditional teaching strategy between the pre-test (M = 12.09, SD = 2.126) and the post-test (M = 17.26, SD = 3.045). Although improvement was noted, the increase in scores was less substantial than in the Genius Hour group, implying that while the traditional strategy had some effect, it was not as effective as the Genius Hour approach.

Hypothesis 3

H₀₃: There is no significance difference in the mean scores of academic achievements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.

Table 4. 3

Comparison of GH and Traditional teaching strategy for Academic Achievement

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>Sig</i>
GH	44	28.77	5.076	12.898	86	.001
Trad	44	17.25	3.055		70.537	

Table 4.3 shows that the calculated t-value (12.898) with 86 degrees of freedom is statistically significant at the .001 level. Therefore, H₀₃ was rejected. This indicates a significant difference in the mean scores of academic achievement between prospective teachers taught through the Genius Hour teaching strategy (M = 28.77, SD = 5.076) and those taught using the traditional teaching strategy. The significantly higher mean score of the Genius Hour group demonstrates that this student-centered, inquiry-based approach led to improved academic performance among prospective teachers compared to conventional instruction.

Hypothesis 4

H₀₄: There is no significant effect of Genius Hour teaching strategy on cognitive engagement of prospective teachers.

Table 4. 4

Effect of GH on cognitive Engagement

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Pre test	44	34.86	6.68	1.300	43	0.201
Post test	44	36.82	10.15			

Table 4.4 indicates that the calculated value of t (1.300) with $df = 43$ has a p-value of 0.201, which is greater than the significance level of 0.05. Hence, H₀₄ was accepted. It means that there was no statistically significant difference between the mean scores of the pre-test ($M = 34.86$, $SD = 6.68$) and post-test ($M = 36.82$, $SD = 10.15$) of the experimental group with regard to cognitive engagement after being taught through the Genius Hour teaching strategy.

Hypothesis 5

H₀₅: There is no significant effect of Genius Hour teaching strategy on behavioral engagement of prospective teachers

Table 4. 5

Effect of GH on behavioral engagement

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Pre -Test	44	37.68	7.68	3.245	43	.002
Post -Test	44	43.31	11.603			

Table 4.5 indicates that the calculated value of t (3.245) with $df = 43$ has a p -value of 0.002, which is less than the significance level of 0.05. Hence, H₀₅ was rejected. It means that there was a statistically significant difference between the mean scores of the pre-test ($M = 37.68$, $SD = 7.68$) and post-test ($M = 43.31$, $SD = 11.60$) of the experimental group with regard to behavioral engagement after being taught through the Genius Hour teaching strategy.

Hypothesis 6

H₀₆: There is no significant effect of Genius Hour teaching strategy on emotional engagement of prospective teachers.

Table 4. 6

Effect of GH on Emotional Engagement

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Pre-Test	44	40.40	7.75	2.944	43	.005
Post-Test	44	45.47	11.90			

Table 4.6 indicates that the calculated t-value (2.944) with df = 43 has a p-value of 0.005, which is less than the 0.05 level of significance. Hence, H₀₆ was rejected. This means there was a statistically significant difference between the pre-test (M = 40.40, SD = 7.75) and post-test (M = 45.47, SD = 11.90) mean scores of the experimental group regarding emotional engagement. The results suggest that the Genius Hour teaching strategy had a significant and positive effect on the emotional engagement of prospective teachers.

Hypothesis 7

H₀₇: There is no significant effect of Genius Hour teaching strategy on study engagement of prospective teachers.

Table 4. 7

Effect of GH on study Engagement

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Pre- test	44	112.95	19.65	2.58	43	.007
Post- test	44	125.61	31.39			

Table 4.7 shows that the calculated t-value (2.58) with $df = 43$ has a p-value of 0.007, which is less than the 0.05 level of significance. Therefore, H₀₇ was rejected. This indicates a statistically significant difference between the pre-test ($M = 112.95$, $SD = 19.65$) and post-test ($M = 125.61$, $SD = 31.39$) scores of the experimental group with regard to study engagement. The findings suggest that the Genius Hour teaching strategy had a significant and positive impact on enhancing study engagement among prospective teachers.

Hypothesis 8

H₀₈: There is no significant effect of traditional teaching strategy on cognitive engagement of prospective teachers.

Table 4. 8

Effect of traditional teaching strategy on cognitive Engagement

Groups	N	Mean	SD	<i>t</i>	<i>Df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Pre -test	44	29.18	5.641	6.038	43	.000
Post-test	44	32.81	6.131			

Table 4.8 shows that the calculated t-value (6.038) with df = 43 has a p-value of .000, which is less than the significance level of 0.05. Therefore, H₀₈ was rejected. This indicates that there was a statistically significant difference between the pre-test (M = 29.18, SD = 5.641) and post-test scores of prospective teachers taught through the traditional teaching strategy with regard to cognitive engagement. These results suggest that traditional instructional method had a measurable effect on cognitive engagement.

Hypothesis 9

H₀₉: There is no significant effect of traditional teaching strategy on behavioral engagement of prospective teachers

Table 4. 9

Effect of traditional teaching strategy on behavioral Engagement

Groups	N	Mean	SD	<i>T</i>	<i>Df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Pre- test	44	28.95	4.922	5.686	43	.000
Post- test	44	32.13	5.522			

Table 4.9 reveals that the calculated t-value (5.686) at df = 43 has a p-value of .000, which is less than the standard significance level of 0.05. Therefore, H₀₉ was rejected. This means there was a statistically significant difference between the pre-test (M = 28.95, SD = 4.922) and post-test (M = 32.13, SD = 5.522) scores of prospective teachers in the control group, indicating an improvement in behavioral engagement through the traditional teaching strategy.

Hypothesis 10

H₀₁₀: There is no significant effect of traditional teaching strategy on emotional engagement of prospective teachers.

Table 4. 10

Effect of traditional teaching strategy on emotional Engagement

Groups	N	Mean	SD	T	df	P value Sig(2- tailed)
Post-Test	44	31.90	5.522	6.718	43	.000
Pre -Test	44	27.77	4.589			

Table 4.10 shows that the calculated t-value (6.718) with 43 degrees of freedom has a p-value of .000, which is less than the significance level of 0.05. Therefore, H₀₁₀ was rejected. This indicates that there is a statistically significant difference between the pre-test (M = 27.77, SD = 4.589) and post-test (M = 31.90, SD = 5.522) scores of prospective teachers, suggesting that the traditional teaching strategy had a significant effect on their emotional engagement

Hypothesis 11

H₀₁₁: There is no significant effect of traditional teaching strategy on study engagement of prospective teachers

Table 4. 11

Effect of traditional teaching strategy on study Engagement

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>P value</i> <i>Sig(2-tailed)</i>
Pre- Test	44	85.90	11.28	9.123	43	.000
Post-Test	44	96.86	14.73			

Table 4.11 shows that the calculated t-value (9.123) with 43 degrees of freedom has a p-value of .000, which is less than the significance level of 0.05. Therefore, H₀₁₁ was rejected. This indicates that there is a statistically significant difference between the pre-test (M = 85.90, SD = 11.28) and post-test (M = 96.86, SD = 14.73) scores of prospective teachers, implying that the traditional teaching strategy had a significant effect on study engagement.

Hypothesis 12

H₀₁₂: There is no significance difference in the mean scores of cognitive engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.

Table 4. 12

Difference in the Mean Scores of Cognitive Engagement of Prospective Teachers

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>Sig</i>
GH	44	34.86	10.14	3.246	86	.000
Trad	44	29.18	5.641		67.257	

Table 4.12 shows that the calculated t-value (3.246) with 86 degrees of freedom and a significance value of .000 is less than the standard alpha level of 0.05. Therefore, H₀₁₂ was rejected. This result indicates a statistically significant difference in the mean scores of cognitive engagement between prospective teachers taught through the Genius Hour teaching strategy (M = 34.86, SD = 10.14) and those taught through the traditional teaching strategy (M = 29.18, SD = 5.641). The higher mean score in the experimental group with Genius Hour demonstrates that the strategy was more effective in enhancing cognitive engagement among prospective teachers compared to traditional method.

Hypothesis 13

H₀₁₃: There is no significance difference in the mean scores of behavioral engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy

Table 4. 13

Difference in the Mean Scores of behavioral Engagement of Prospective Teachers

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>Sig</i>
GH	44	37.68	11.60	4.593	86	.000
Trad	44	28.95	4.92		57.99	

Table 4.13 shows that the calculated t-value (4.593) with 86 degrees of freedom and a significance value of .000 is less than the standard alpha level of 0.05. Therefore, H₀₁₃ was rejected. This result indicates that there is a statistically significant difference in the mean scores of behavioral engagements between prospective teachers taught through the Genius Hour teaching strategy (M = 37.68, SD = 11.60) and those taught through the traditional teaching strategy (M = 28.95, SD = 4.92). The higher mean score for the Genius Hour group suggests that this approach was more effective in enhancing behavioral engagement among prospective teachers.

Hypothesis 14

H₀₁₄: There is no significance difference in the mean scores of emotional engagements of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy

Table 4. 14

Comparison of GH and Traditional teaching strategy on emotional engagement

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>Sig</i>
GH	44	40.40	11.90	6.568	86	.000
Trad	44	27.77	4.58		55.500	

Table 4.14 reveals that the calculated t-value (6.568) with 86 degrees of freedom and a significance value of .000 is below the 0.05 threshold. Therefore, H₀₁₄ was rejected. This finding indicates a statistically significant difference in the mean scores of emotional engagement between prospective teachers taught using the Genius Hour teaching strategy (M = 40.40, SD = 11.90) and those taught using the traditional teaching strategy. The higher mean score for the Genius Hour group suggests that this approach was more effective in promoting emotional engagement, which encompasses learners' interest, enthusiasm, and emotional connection with their academic experience.

Hypothesis 15

H₀₁₅: There is no significance difference in the mean scores of study engagement of prospective teachers taught through Genius Hour teaching strategy and traditional teaching strategy.

Table 4. 15

Comparison of Genius Hour and traditional teaching strategy on study engagement.

Groups	N	Mean	SD	<i>T</i>	<i>df</i>	<i>Sig</i>
GH	44	112.95	31.39	5.377	86	.000
Trad	44	85.90	11.28		53.93	

Table 4.15 shows that the calculated t-value (5.377) with 86 degrees of freedom is statistically significant at the .000 level. Therefore, H₀₁₅ was rejected. This result indicates a significant difference in the mean scores of study engagement between prospective teachers taught through the Genius Hour teaching strategy (M = 112.95, SD = 31.39) and those taught using the traditional method. The higher mean score for the Genius Hour group reflects the strategy's effectiveness in fostering greater study engagement, suggesting that students were more actively, cognitively, and emotionally involved in their learning environment when taught through Genius Hour.

Hypothesis 16

H₀₁₆: There is no statistically significant relationship among cognitive engagement, behavioral engagement, and emotional engagement of prospective teachers in the post-experimental group.

Table 4. 16

Correlation and covariance among post experimental study engagement variables

Variable	M	SD	1	2	3
1. Cognitive Engagement (PostExpCE)	34.86	10.15	—	.779**	.711**
2. Behavioral Engagement (PostExpBE)	37.68	11.60	91.77	—	.908**
3. Emotional Engagement (PostExpEE)	40.41	11.91	85.92	125.51	—

Table 4.16 shows the means, standard deviations, correlations, and covariances among post-experimental cognitive, behavioral, and emotional engagement of prospective teachers following the Genius Hour teaching strategy. Emotional engagement recorded the highest mean score (M = 40.41, SD = 11.91), followed by behavioral engagement (M = 37.68, SD = 11.60) and cognitive engagement (M = 34.86, SD = 10.15).

All engagement dimensions were positively and significantly correlated. Cognitive engagement was strongly related to behavioral engagement ($r = .779$, $p < .01$) and

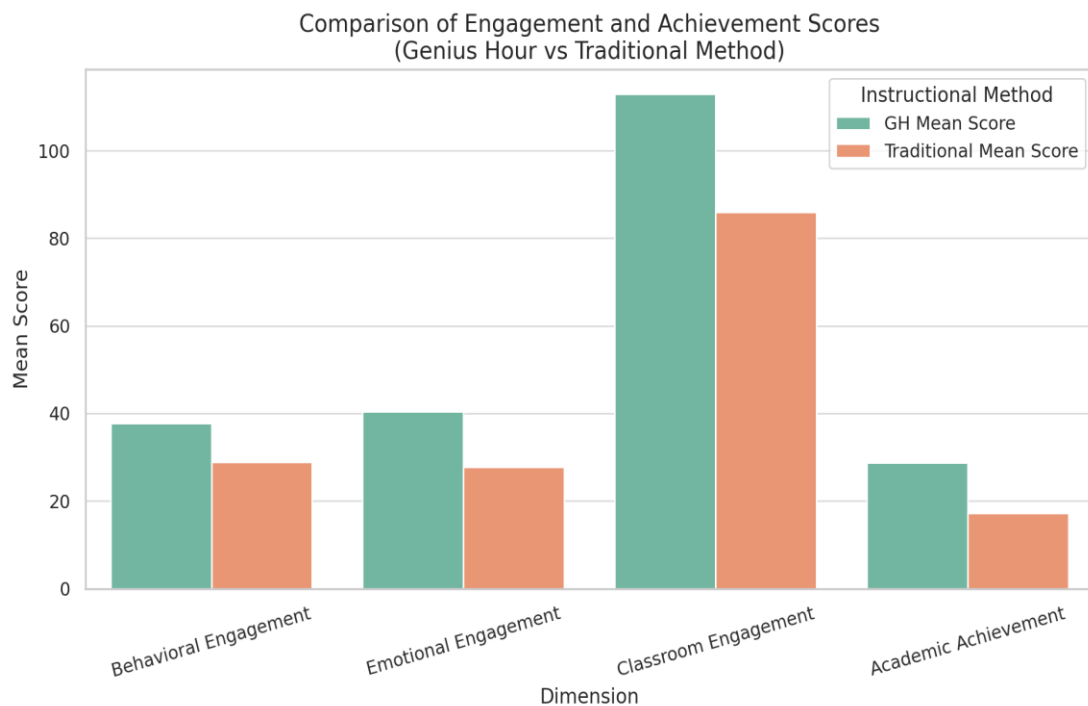
emotional engagement ($r = .711$, $p < .01$). Behavioral engagement showed a very strong positive correlation with emotional engagement ($r = .908$, $p < .01$). Positive covariances among all variables further indicated that increases in one engagement dimension were associated with increases in the others, with the strongest covariance observed between behavioral and emotional engagement ($\text{Cov} = 125.51$). Overall, the findings demonstrate a strong interrelationship among cognitive, behavioral, and emotional engagement in the post-experimental group.

4.2 Graphical Presentation of Analysis

The graphical presentation of the analysis is given below:

Figure 4. 1

Comparison of Genius Hour and Traditional teaching on study engagement and academic achievement



The graph clearly highlights the effect of the Genius Hour teaching strategy on study engagement and academic achievement. The results of the study indicate that prospective teachers in the experimental group, who were taught using the Genius Hour teaching strategy, performed better in terms of academic achievement and study

engagement as compared to those in the control group, who received instruction through traditional method. This improvement is attributed to the distinctive nature of Genius Hour, which empowers learners by offering autonomy, choice, and opportunities for creativity, inquiry, and personalized learning.

In contrast, the relatively lower performance of the control group may be explained by the limitations inherent in traditional teaching strategy. Lecture method typically relies on teacher-centered practices where students passively receive content, often with minimal interaction or collaboration. The instruction they receive is usually rigid, with a focus on rote memorization, constrained communication, and a lack of opportunities for students to explore their own interests.

Conversely, the Genius Hour teaching strategy fosters intrinsic motivation, self-directed learning, and authentic engagement, allowing students to take ownership of their learning experiences. When learners are given the freedom to explore topics of personal relevance within an academic framework, they demonstrate deeper study engagement, enhanced collaboration, and improved learning outcomes.

Furthermore, active engagement in inquiry-driven projects during Genius Hour teaching strategy sessions enabled prospective teachers to meaningful connections between theoretical knowledge and real-world applications. This transition from passive reception to active knowledge construction led to improved academic performance. Genius Hour, by promoting learner autonomy, encourages students to explore topics aligned with their personal interests, thereby enhancing motivation which ultimately enhanced study engagement and academic achievement in prospective teachers.

4.3 Semi Structured Interviews Data Procedure

To gain deeper insights into prospective teachers' lived experiences with the Genius Hour teaching strategy semi-structured interviews (Appendix-H) were conducted with the participants from experimental group. The total number of fifteen (15) interviews were conducted from fifteen participants. The open-ended nature of the questions allowed participants to reflect meaningfully on their learning experiences, emotional responses, and perceptions of Genius Hour.

Gay (2015) outlines a systematic process for qualitative data analysis that involves multiple stages aimed at organizing and making sense of narrative data. The first step is reading, where the researcher immerses themselves in the data by carefully reviewing transcripts to gain a deep understanding of participants' experiences. This is followed by describing, which involves open coding of the data by labelling meaningful units of text with descriptive codes that capture key ideas or phenomena. The final step is classifying, where these codes are grouped into broader categories or themes based on similarities, allowing for the identification of patterns and insights relevant to the research questions. These steps provide a structured yet flexible framework for analysing qualitative data, ensuring that findings are grounded in participants' voices and experiences (Gay et al., 2015).

The first step was reading with the purpose to become thoroughly familiar with the interview data which was taken by prospective teachers regarding their experience with Genius Hour. The researcher transcribed all audio-recorded interviews and written responses by reading each transcript multiple times to gain a holistic understanding of participants' responses. As the researcher read, began making margin notes or analytic memos highlighting initial impressions, especially focusing on: thoughts related to thinking, attention, and cognitive challenge (Cognitive Engagement), comments about participation, effort, and time investment (Behavioral Engagement), emotional expressions like enjoyment, frustration, motivation, or pride (Emotional Engagement), insights on academic performance, real-life relevance, and instructional experiences, looked for recurring terms such as “motivated,” “interested,” “ownership,” “practical application,” or “different from normal classes.”

The second step describing (Initial/Open Coding) was done to assign codes to meaningful data segments that reflect participants' experiences and applied as divided transcripts into meaning units (a sentence, phrase, or paragraph that conveys one idea or experience), assigned descriptive codes to each unit. For example, for the statement “More focused than in normal class,” *code was “increased concentration”, same as for the statement “Chose topic I was passionate about” code was personal interest drives learning* “Spent more time preparing the presentation” *code was extended effort and for the statement “I felt excited presenting my project” code was emotional engagement.*

The Applied codes under main themes were engagement, cognitive (deep thinking, independent learning), behavioral (active participation, persistence), emotional (enjoyment, motivation), academic achievement (improved understanding, real-life relevance), instructional method perception (comparison with traditional methods, freedom of choice), suggestions and reflections (recommendations, improvements, challenges).

In the third step classifying or categorizing and theming to organize codes into categories and developed broader themes that addressed research questions was carried out. Applied as grouped similar codes together to form subcategory codes like focused attention, deep thinking, problem-solving comes under the theme (enhanced cognitive processing same as codes like worked extra hours, participated actively comes under the theme (increased behavioral effort), other codes like felt motivated, enjoyed ownership were the part of theme (Positive emotional response). The main developed themes under each interview protocol section were cognitive engagement (independent thinking, self-driven inquiry), behavioral engagement (increased participation, time commitment), emotional engagement (enthusiasm, personal connection), academic achievement (conceptual clarity, applied learning), instructional perception (student-centered learning, non-traditional innovation) and suggestions and Reflections (Sustainability, practical recommendations).

4.4 Extracted Themes

Thematic analysis of the interviews revealed a rich array of responses highlighting the transformative effect of the Genius Hour teaching strategy on prospective teachers' engagement and academic development within the "School Management" course. Participants articulated their experiences across multiple dimensions of study engagement i.e. cognitive, behavioral, emotional, and study engagement as well as academic achievement, perceptions regarding Genius Hour and lastly also suggestions and reflections by the participants from experimental group. These themes were inductively derived through a coding process and reflect the depth and variety of participant experiences. The following table presents a categorized summary of the extracted themes, offering insight into the ways in which the Genius Hour teaching strategy influenced learners.

Table 4. 17*Extracted themes*

Dimension	Extracted Themes
Cognitive Engagement	Deep thinking and critical analysis
	Interest-driven learning
	Positive comparison with traditional methods
	Ownership of learning
	Increased focus and motivation
	Meaningful learning experience
Behavioral Engagement	Improved critical thinking- Independent learning- Deep research skills
	Consistent participation and initiative
	Increased effort and time investment
	Active participation
Emotional Engagement	Sustained involvement
	Excitement and motivation
	Emotional connection to learning
	Emotional connection with the topic
	Increased motivation through interest-based learning
Study Engagement	Meaningful learning experience
	Freedom and autonomy
	Deeper conceptual understanding

Dimension	Extracted Themes
Academic Achievement	Real-life relevance
	Sense of ownership in learning
	Practical application of concepts
	Improved conceptual clarity
	Development of problem solving and research skills
	Meaningful academic achievement
	Freedom of choice in learning
	Contrast with traditional teaching methods
	Effective learning components
	Supportive and open learning environment
Perceptions on GH	Comparison with traditional teaching
	Cognitive growth and motivation
	Instructional method perception
Suggestions & Reflection	Facilitating factors
	Improved time management skills
	Development of problem solving and self-regulation
	Positive attitude toward Genius Hour teaching strategy
	Positive reflection on learning progress
	Recommendation for wider implementation
	Autonomy and self-directed learning
	Fostering creativity and problem-solving

Theme 1: Cognitive Engagement

The data revealed strong cognitive engagement characterized by deep thinking and critical analysis, interest-driven learning, and ownership of learning. Most respondents emphasized that choosing their own topics heightened their intellectual curiosity and led to a meaningful learning experience as stated by one of the participants that *“Genius Hour teaching strategy allowed me to choose a topic I was genuinely passionate about... This freedom made me excited.”* They reported engaging in independent research, applying critical thinking, and demonstrating enhanced problem-solving skills. One participant stated, that *“I improved my thinking skills through deep research and analysing school-level problems independently.”* The autonomy offered by Genius Hour prompted students to compare it positively with traditional method, where learning is often rigid and assignment-based. Many reflected that they were more mentally invested in Genius Hour due to the freedom to explore areas they found personally relevant, which resulted in increased focus and motivation.

Theme 2: Behavioral Engagement

Behavioral engagement was evident through active and consistent participation, initiative-taking, and increased time investment. Students consistently described going beyond classroom expectations by devoting additional hours to research and project development. One of the participants revealed that *“I spent 5 to 6 extra hours weekly working on my project,”* another participant revealed that *“Each session, I brought new ideas to class,”* illustrate the level of behavioral commitment. Several respondents highlighted their sustained involvement throughout the semester, noting that their engagement grew progressively as they became more invested in their topics. These behaviours reflect a transition toward self-regulated learning and a proactive educational stance.

Theme 3: Emotional Engagement

Students expressed a high degree of emotional connection to their projects, marked by excitement, personal investment, and a sense of pride in their accomplishments. Emotional engagement was largely fuelled by the freedom to select meaningful topics, leading to statements as one of the participants mentioned that, *“It didn’t feel like an*

assignment I felt like I was doing something that mattered to me.” Many participants linked their emotional engagement to increased intrinsic motivation, explaining that interest-based learning made them more enthusiastic and committed. Moreover, they described the experience as emotionally fulfilling, fostering both confidence and self-efficacy. This emotional resonance contributed significantly to their motivation to persist and succeed academically.

Theme 4: Study Engagement

The Genius Hour teaching strategy approach also fostered study engagement through freedom and autonomy, student ownership, and real-life relevance. Participants reported a heightened sense of agency in the classroom, expressing that Genius Hour made them feel responsible for their learning. For example, one respondent noted, *“I felt I had ownership... I wasn’t just listening I was creating.”* Additionally, many emphasized that their understanding of course content deepened when they applied concepts in authentic, real-world settings, such as managing parent-teacher meetings or designing school improvement initiatives. These experiences allowed students to engage more meaningfully with peers and instructors, leading to a more vibrant and interactive classroom environment.

Theme 5: Academic Achievement

Genius Hour teaching strategy gave a measurable effect on academic achievement, as evidenced by the participants’ reports of improved conceptual clarity, practical application of course content, and development of research and problem-solving skills. Several respondents mentioned how Genius Hour helped them bridge theory and practice. As one of the participants said that, *“This project helped me understand management concepts by applying them in real situations.”* In addition to cognitive gains, students developed time management, decision-making, and planning skills, which they considered crucial for their future roles as teachers. Participants often contrasted the effectiveness of Genius Hour with traditional method, noting that the former fostered deeper learning, greater autonomy, and a more supportive learning environment. The Genius Hour student-centered design allowed for flexibility, collaboration, and creativity key components that students viewed as essential for meaningful academic success.

Theme 6: Suggestions and Reflections

Participants offered rich reflections and thoughtful suggestions for enhancing the Genius Hour teaching strategy. All participants recommended the wider implementation of Genius Hour across teacher education courses, citing benefits such as autonomy, self-directed learning, and creativity enhancement. They also emphasized that the Genius Hour promotes cognitive growth and a positive learning attitude, with one respondent stated that *“Genius Hour teaching strategy should be used in all courses because it makes learning exciting and practical.”* Other suggestions included incorporating structured milestones, mini-lessons on research, and ensuring access to necessary resources. Despite facing challenges such as time management and resource limitations, participants viewed these as opportunities for developing self-regulation and professional resilience. Their reflections underscore a strong preference for instructional approaches that prioritize student interests, promote critical thinking, and prepare them for real-world teaching demands.

In summary, the thematic analysis reveals that the Genius Hour teaching strategy deeply engaged prospective teachers across all dimensions cognitive, behavioral, emotional. The autonomy and interest-driven nature of Genius Hour empowered students to take responsibility for their learning, resulting in meaningful academic achievements and personal growth. The overwhelmingly positive reflections and strong recommendations for its continued use affirmed Genius Hour as an effective, student-centered pedagogy within the context of teacher education. These findings, in conjunction with interviews data, offers vital evidence supporting the Genius Hour teaching strategy as a transformative approach for developing skilled, motivated, and reflective educators.

These findings in this study strengthens the credibility and depth of the conclusions regarding the effect of the Genius Hour teaching strategy. Quantitative results showed statistically significant improvements in academic achievement and all dimensions of study engagement cognitive, behavioral, emotional, and classroom among the experimental group. These findings were reinforced by interview data, where participants described enhanced thinking processes, increased motivation, and deeper involvement in learning activities. For instance, students reported that choosing personally meaningful topics boosted their cognitive focus and emotional investment, which aligns with the significant

increase in cognitive and emotional engagement scores. Behavioral engagement was also supported through student narratives highlighting active participation, collaborative work, and time invested beyond classroom hours validating the observed rise in behavioral engagement scores. Similarly, feedback indicated stronger classroom involvement and ownership of learning, confirming the study engagement improvements through Genius Hour.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary

The study employed a true experimental pre-test post-test control group design to investigate the effect of the Genius Hour teaching strategy (GH) on the study engagement (cognitive, behavioral, emotional engagement) and academic achievement of prospective teachers enrolled in the School Management course of the B.Ed. (Hons) Elementary program at the University of Kotli, AJ&K. Participants were randomly assigned to an experimental group (taught through Genius Hour) and a control group (taught through traditional lecture-based method). Data were collected using validated instruments, and pre-test and post-tests were administered to both groups to determine the effect of the intervention. Results indicated that Genius Hour teaching strategy significantly improved all dimensions of engagement and academic achievement when compared to traditional instruction.

To further enrich the understanding of GH's effectiveness, semi-structured interviews were conducted with participants from the experimental group only. These responses were analyzed using thematic analysis. The process involved familiarization with the data, initial coding, and generation of themes related to study engagement including cognitive, behavioral, emotional engagement, as well as instructional perception and academic impact. The thematic analysis conducted on semi-structured interviews provided deeper insight into how Genius Hour teaching strategy encouraged autonomy, creativity, and practical application of knowledge.

5.2 Findings

As per research hypotheses and research questions following were the findings of the study.

1. It was confirmed that the calculated t-value (-37.603) was greater at the 0.05 level of significance; hence, H_{01} was rejected. This indicates that the academic achievement of prospective teachers taught through the Genius Hour teaching

strategy was significantly higher than those taught through the traditional method. The results demonstrate that the Genius Hour strategy had a substantial and positive impact on the academic achievement of prospective teachers in the School Management course. The findings provide strong empirical support for the effectiveness of student-centered, inquiry-driven approaches like Genius Hour teaching strategy in enhancing academic achievement (Table 4.1).

2. It was found that the calculated t-value (12.898) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{02} was rejected. This result indicates a statistically significant difference in the mean scores of academic achievements between prospective teachers taught through the Genius Hour teaching strategy ($M = 28.77$, $SD = 5.076$) and those taught using the traditional teaching strategy. The substantially higher mean score of the Genius Hour group confirms the effectiveness of this inquiry-driven, student-centered instructional method in enhancing academic performance in the School Management course (Table 4.2)
3. It was demonstrated that the calculated t-value (-36.025) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{03} was rejected. This indicates that there was a statistically significant improvement in the academic achievement of prospective teachers taught through the traditional teaching strategy. However, the observed increase in mean scores from pre-test to post-test was less pronounced than that of the Genius Hour group, suggesting that although traditional methods had a positive effect, the Genius Hour approach proved more effective in enhancing academic achievement in the School Management course (Table 4.3).
4. It was found that the calculated value of t (1.300) was less at 0.05 level of significance, hence H_{04} was accepted. It means that there was no statistically significant improvement in the cognitive engagement of the experimental group in the post-test as compared to the pre-test after being taught through the Genius Hour teaching strategy. Although a slight increase was observed in the mean score from pre-test ($M = 34.86$) to post-test ($M = 36.82$), the difference was not significant enough to conclude a substantial effect of the strategy on cognitive engagement during the treatment period. Therefore, the null hypothesis (H_{04}) stating that there

is no significant effect of Genius Hour teaching strategy on cognitive engagement of prospective teachers was accepted (Table 4.4).

5. It was identified that the calculated value of t (3.245) was greater than at 0.05 level of significance, hence H_{05} was rejected. It means that the experimental group performed better in the post-test ($M = 43.31$) than the pre-test ($M = 37.68$) after being taught through the Genius Hour teaching strategy. This indicates a statistically significant improvement in the behavioral engagement of prospective teachers as a result of the Genius Hour. Therefore, the null hypothesis (H_{05}), which stated that there is no significant effect of Genius Hour teaching strategy on behavioral engagement of prospective teachers, failed to be accepted (Table 4.5).
6. It was demonstrated that the calculated value of t (2.944) was greater at 0.05 level of significance, hence H_{06} was rejected. It means that the experimental group performed better in the post-test ($M = 45.47$) than in the pre-test ($M = 40.40$) after being taught through the Genius Hour teaching strategy. This indicates a statistically significant improvement in the emotional engagement of prospective teachers as a result of the intervention. Therefore, the null hypothesis (H_{06}), which stated that there is no significant effect of the Genius Hour teaching strategy on emotional engagement of prospective teachers, was rejected (Table 4.6).
7. It was confirmed that the calculated value of t (2.58) was greater at the 0.05 level of significance, hence H_{07} was rejected. It means that the experimental group showed better performance in the post-test ($M = 125.61$) compared to the pre-test ($M = 112.95$) after being taught through the Genius Hour teaching strategy. This indicates a statistically significant improvement in study engagement of prospective teachers due to the intervention. Therefore, the null hypothesis (H_{07}), which stated that there is no significant effect of the Genius Hour teaching strategy on study engagement of prospective teachers, was rejected (Table 4.7).
8. It was found that the calculated value of t (6.038) was greater than the table value (1.96) at the 0.05 level of significance, hence H_{08} was rejected. It means that the control group performed better in the post-test than in the pre-test after being treated with the traditional teaching strategy. This indicates a statistically significant

improvement in cognitive engagement among prospective teachers taught through the traditional instructional method (Table 4.8)

9. It was confirmed that the calculated value of t (5.686) was greater at the 0.05 level of significance, hence H_{09} was rejected. It means that the control group performed better in the post-test ($M = 32.13$) than in the pre-test ($M = 28.95$) after being taught through the traditional teaching strategy. This indicates a statistically significant improvement in behavioral engagement among prospective teachers in the control group. These findings suggest that while the traditional method can facilitate behavioral engagement gains over time, they may differ in nature and depth compared to the experiential learning promoted through Genius Hour teaching strategy (Table 4.9).
10. It was demonstrated that the calculated value of t (6.718) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{010} was rejected. This means that the control group performed better in the post-test than in the pre-test after being taught through the traditional teaching strategy. The findings suggest that the traditional teaching method had a statistically significant and positive effect on the emotional engagement of prospective teachers. Therefore, the null hypothesis (H_{010}), which stated that there is no significant effect of the traditional teaching strategy on emotional engagement of prospective teachers, was rejected (Table 4.10).
11. It was found that the calculated value of t (9.123) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{011} was rejected. This indicates that the control group performed better in the post-test than in the pre-test after being instructed through the traditional teaching strategy. The results suggest that the traditional instructional method had a statistically significant and positive effect on the study engagement of prospective teachers (Table 4.11).
12. It was demonstrated that the calculated t -value (6.568) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{012} was rejected. This indicates that there was a statistically significant difference in the mean scores of emotional engagements between prospective teachers taught through the Genius Hour teaching strategy and those taught through the traditional method. The higher

mean score of the Genius Hour group ($M = 40.40$, $SD = 11.90$) reflects that this instructional approach was more effective in enhancing emotional engagement evidenced by increased interest, enthusiasm, and emotional investment in learning. These findings provide evidence to reject the null hypothesis (H_{012}), affirming that Genius Hour teaching strategy has a positive effect on the emotional engagement of prospective teachers (Table 4.12).

13. It was found that the calculated t-value (5.377) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{013} was rejected. This indicates that there was a statistically significant difference in the mean scores of study engagement between prospective teachers taught through the Genius Hour teaching strategy and those taught through the traditional method. The higher mean score of the Genius Hour group ($M = 112.95$, $SD = 31.39$) demonstrates the effectiveness of this instructional approach in enhancing study engagement, as it actively involved students cognitively, behaviorally, and emotionally in the learning process (Table 4.13).
14. It was identified that the calculated t-value (3.246) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{014} was rejected. This indicates that there was a statistically significant difference in the mean scores of cognitive engagements between prospective teachers taught through the Genius Hour teaching strategy and those taught through the traditional teaching method. The higher mean score of the Genius Hour group ($M = 34.86$, $SD = 10.14$) compared to the traditional group ($M = 29.18$, $SD = 5.641$) suggests that the Genius Hour strategy was more effective in enhancing cognitive engagement (Table 4.14).
15. It was found that the calculated t-value (4.593) was greater than the table value (1.96) at the 0.05 level of significance; hence, H_{015} was rejected. This means there was a statistically significant difference in the mean scores of behavioral engagements between prospective teachers taught through the Genius Hour teaching strategy and those taught through the traditional teaching strategy. The higher mean score of the Genius Hour group ($M = 37.68$, $SD = 11.60$) compared to the traditional group ($M = 28.95$, $SD = 4.92$) indicates that the Genius Hour strategy

was more effective in improving behavioral engagement among prospective teachers (Table 4.15).

16. It was found that the calculated Pearson correlation values among post-experimental cognitive, behavioral, and emotional engagement were statistically significant at the 0.01 level of significance; hence, H_{016} was rejected. This result indicates a statistically significant positive relationship among cognitive engagement, behavioral engagement, and emotional engagement of prospective teachers taught through the Genius Hour teaching strategy. The strong correlations between cognitive and behavioral engagement ($r = .779$), cognitive and emotional engagement ($r = .711$), and behavioral and emotional engagement ($r = .908$), along with positive covariance values, confirm that the Genius Hour teaching strategy raised a highly interconnected pattern of student engagement. These findings affirm the effect of genius hour teaching strategy in promoting multidimensional engagement in the school management course (4.16).
17. The findings of the interviews conducted during the study revealed that the implementation of the Genius Hour teaching strategy significantly enhanced cognitive, behavioral, emotional, and study engagement among prospective teachers enrolled in the School Management course. Participants reported that the opportunity to choose and explore personally chosen meaningful topics enhanced deeper thinking, critical analysis, and a stronger connection between theory and practice, thereby enriching their cognitive engagement. In terms of behavioral engagement, students described increased participation, responsibility, and sustained effort throughout their project work, often investing time beyond scheduled class hours. Emotionally, the Genius Hour teaching strategy created an atmosphere of excitement, enjoyment, and pride, as students felt valued and motivated by the autonomy granted to them. Furthermore, study engagement improved through collaborative learning, peer feedback, and technology-enhanced presentations, which boosted an exciting, interactive learning environment. Overall, students perceived the Genius Hour teaching strategy as a refreshing departure from routine instructional practices and as a platform for authentic learning, creativity, and professional growth.

5.3 Discussions

The study investigated the effect of the Genius Hour teaching strategy (GH) teaching strategy on prospective teachers' study engagement (cognitive, behavioral, emotional and study engagement), and academic achievement in the School Management course of a B.Ed. (Hons) Elementary program at the University of Kotli Azad Jammu and Kashmir (AJ&K). The findings, complemented by rich interviews insights, demonstrate the effect of Genius Hour as a transformative pedagogical approach that increases deep learning and multidimensional engagement including cognitive, behavioral and emotional engagement.

The data revealed a statistically significant improvement in behavioral, emotional, and study engagement, while cognitive engagement showed a positive, statistically non-significant effect. These findings support the broader educational discourse that positions learner autonomy, interest-driven inquiry, and active participation as key contributors to effect engagement (Fredricks et al., 2004). Although traditional instruction was found to improve engagement levels to some extent but the Genius Hour strategy outperformed it across study engagement (cognitive, behavioral and emotional), confirming that student-centered teaching strategy (Genius Hour) yield stronger educational outcomes as Wood (2020) highlights that Genius Hour enhances student creativity, ownership, and engagement.

The experimental group's with Genius Hour teaching strategy improved significantly with respect to behavioral engagement, indicating that when students are granted autonomy over their learning topics, they exhibit greater persistence, effort, and self-direction. These outcomes are aligned with the work of (Lee et al., 2023), who found that student-led learning environments promote task commitment and sustained academic behaviours. Similarly, Graf (2025) emphasized that inquiry-based strategies nurture intrinsic motivation, leading to increased behavioral involvement. Moreover, Horrigan (2018) added that by dedicating regular class time to student-led inquiry, the study found that learners exhibited increased ownership, creativity, and intrinsic motivation. Overall, Woolford (2022) concluded that free-choice inquiry projects effectively promote

meaningful engagement and empower students to take ownership of their learning through authentic inquiry processes.

Emotional engagement was also significantly elevated among Genius Hour participants. The positive emotional responses such as excitement, pride, and curiosity reported in findings underscore the importance of relevance and personal connection in learning. These findings mirror those of Salmela-Aro and Upadaya (2012), who argue that emotionally invested students are more resilient and motivated, traits that are critical in professional teacher development.

Study engagement, viewed as a synthesis of cognitive, behavioral, and emotional elements, exhibited the highest gain among Genius Hour participants. This result aligns with Wang and Eccles' (2012) assertion that integrated engagement leads to deeper learning and higher achievement. Genius Hour's collaborative and presentation-based components likely contributed to this increase by developing an inclusive, interactive classroom culture. For instance, LeGeros et al. (2022) reported that when students present their passion projects publicly, it strengthens classroom community and engagement because pupils become more devoted when sharing their learning journey with peers. Similarly, Educators on Edutopia noted that Genius Hour encourages enthusiasm and critical thinking as students take ownership and collaborate freely.

Although the cognitive engagement improvement in the GH group was not statistically significant, the qualitative data suggest enhanced critical thinking, creative problem-solving, and metacognitive awareness skills often overlooked in conventional assessments. Prior research Schuitema et al. (2016) and Reeve (2012) argued that deeper cognitive skills such as reflection and self-regulation emerge gradually, often not captured in short-term assessments. Similarly, longitudinal studies for instance, Salanova et al. (2010) highlighted that growth in metacognition and critical thinking may develop more slowly. Thus, while immediate statistical gains in cognitive engagement were modest, the thematic analysis of interviews from the participants of experimental group indicated that Genius Hour effectively builds enduring higher-order cognitive capacities.

In terms of academic achievement, the Genius Hour group significantly outperformed as compared to the control group. The finding is consistent with Bell (2010)

and Hmelo-Silver et al. (2007), who found that project-based and inquiry-based learning enhance academic performance by encouraging active learning, knowledge application, and deep content understanding. The structure of Genius Hour allowing learners to explore real-world problems, conduct independent research, and present findings supports the development of transferable skills that are essential for future educators. As mentioned by (LeGeros et al., 2022) Genius Hour instructional model enables autonomy, critical thinking, collaboration, and self-directed learning by engaging students in authentic, inquiry-based experiences. As learners take ownership of their projects, they develop competencies such as research literacy, creativity, problem-solving, and effective communication mentioned by (Spencer et al., 2020). These outcomes resonate with the principles of Self-Determination Theory (Deci & Ryan, 2000), which emphasize autonomy, competence, and relatedness as a foundation for optimal learning. Genius Hour teaching strategy supports these needs by enabling students to direct their own learning, demonstrate mastery through project work, and connect their learning to authentic, meaningful contexts.

Moreover, this study contributes to the limited but growing body of literature in the South Asian context, where teacher education has traditionally emphasized lecture-based instruction. In the context of AJ&K, where innovative pedagogies are still emerging, the findings underscore the potential of Genius Hour to modernize teaching practices. Quinn (2021) highlighted the adaptability of Genius Hour in various educational settings and emphasized the need for institutional support to realize its full potential. Similarly, Horrigan (2018) illustrated how Genius Hour can enhance motivation and deepen inquiry when coupled with teacher facilitation and community engagement.

The analysis of interviews supports the results of the study, revealing that students valued the autonomy, creativity, and real-world relevance of Genius Hour. The reflections of participants from experimental group indicated a strong sense of ownership, professional preparation, and increased cognitive, behavioral, and emotional engagement in the learning process outcomes that are often difficult to achieve through traditional methods.

Summing up, the study provides empirical evidence that Genius Hour teaching strategy is not only an effective instructional strategy for increasing academic achievement

but also a catalyst for promoting multidimensional cognitive, emotional and behavioral engagement. It supports a pedagogical shift towards learner-centered, inquiry-based approaches in teacher education, AJ&K where traditional practices still dominate. Hence by integrating students' voice, choice, and real-world application, Genius Hour offers a powerful model for equipping future educators with the skills, motivation, and reflective practices needed for 21st-century teaching.

5.4 Conclusions

1. The study found strong empirical evidence that Genius Hour teaching strategy had a profound and statistically significant impact on the academic achievement of prospective teachers. Both within-group and between-group comparisons showed a substantial improvement in post-test scores for the experimental group. Participants exposed to Genius Hour teaching strategy not only demonstrated greater content mastery but also exhibited the ability to apply theoretical concepts to real-world educational contexts, thereby enhancing both performance and professional preparedness.
2. The implementation of the Genius Hour teaching strategy significantly enhanced cognitive, behavioral, emotional, and study engagement among prospective teachers. These improvements were statistically significant, as evidenced by higher post-test mean scores and supported by students' qualitative reflections. Participants demonstrated increased initiative, sustained participation, deeper emotional connection, and more active collaboration within the classroom setting. Although cognitive engagement improved slightly in the post-test, the gain was not statistically significant within the experimental group alone. However, when compared with the control group, the Genius Hour teaching strategy participants showed significantly higher cognitive engagement, indicating the superior effectiveness of Genius Hour over traditional methods in fostering critical thinking, creativity, and learner autonomy.
3. While traditional lecture-based teaching also showed statistically significant gains across all dimensions of engagement, the Genius Hour teaching strategy group consistently outperformed the control group in terms of mean scores. The

experimental group showed notably higher levels of behavioral, emotional, and study engagement, highlighting that while both methods can enhance engagement, the depth, authenticity, and learner-driven nature of Genius Hour teaching strategy produces more meaningful and sustained engagement.

4. The analysis of interviews aligned closely with the results of the study, reinforcing the conclusion that Genius Hour teaching strategy promotes student-centered, inquiry-driven learning environment. Participants appreciated the autonomy, relevance, and creativity embedded in the Genius Hour strategy. They reported increased motivation, personal investment, and deeper understanding of school management concepts. Participants reported that Genius Hour increased their cognitive, behavioral and emotional engagement. The integration of technology, real-life application, and collaborative projects created an interactive and professionally enriching classroom culture.
5. The findings of the study confirm that Genius Hour teaching strategy is a pedagogically sound and effective instructional approach for prospective teachers, particularly in developing regions where innovation and student agency are still emerging. By enhancing multiple dimensions of engagement and significantly improving academic achievement, Genius Hour teaching strategy offers a powerful alternative to traditional teaching. Genius Hour not only nurtures 21st-century skills such as critical and creative thinking, self-regulation, and collaboration but also prepares future educators to adopt more reflective and learner-centered practices in their own classrooms.

5.5 Recommendations

In light of the findings of the study, the following recommendations are proposed for teacher education institutions, curriculum developers, and educational practitioners.

1. The study demonstrated that the Genius Hour teaching strategy significantly improved academic achievement and study engagement of prospective teachers. Therefore, it is recommended that teacher education programs at the University level may integrate Genius Hour teaching strategy as regular instructional strategy.

2. As the Genius Hour teaching strategy was found to enhance study engagement, teacher educators may be trained to design and facilitate interest-driven, inquiry-based learning environments that allow students to explore real-world problems and present solutions through creative projects.
3. Given the strong emotional and motivational responses revealed by the prospective teachers in the experimental group, it is suggested that educational institutions provide autonomy and choice in learning through project-based pedagogies to foster deeper engagement and professional relevance.
4. To support the successful implementation of Genius Hour, capacity-building workshops and professional development programs may be organized for teacher educators to equip them with the necessary skills to plan, facilitate, and assess Genius Hour teaching strategy projects effectively.
5. As prospective teachers in the experimental group demonstrated higher performance in project presentations, critical thinking, and collaborative learning, it is recommended that lesson planning and assessment frameworks in teacher education incorporate creative outputs, multimedia use, and peer sharing activities aligned with Genius Hour teaching strategy principles.
6. Institutions may revise the structure of traditional classroom practices in teacher education by adopting flexible and student-centered strategies as Genius Hour teaching strategy that promote self-direction, reflective practice, and lifelong learning.
7. Teacher education institutions may formally integrate the Genius Hour teaching strategy into professional courses such as School Management through a structured implementation framework. This may include clearly defined phases, alignment with course learning outcomes, scheduled instructional time, and standardized assessment rubrics to ensure that student autonomy is balanced with academic rigor and curricular coherence.
8. Targeted professional development may be provided to teacher educators to strengthen their capacity to facilitate inquiry-based learning effectively. Training may focus on mentoring student-led projects, managing diverse learning interests, and using formative feedback and reflection strategies, thereby ensuring consistent

and effective implementation of the Genius Hour teaching strategy across teacher education programs.

9. Teachers in Pakistani schools may integrate Genius Hour within existing subject periods by allocating limited but regular time and aligning student projects with prescribed curriculum objectives to ensure feasibility within tight academic schedules. Teachers may provide clear scaffolding through guided topic selection, simple research templates, and transparent assessment rubrics, enabling effective Genius Hour implementation despite resource constraints.

5.6 Recommendations for Future Research

1. The study was limited to prospective teachers from the B.Ed. (Hons) Elementary program at one university. Future research may expand the scope by including multiple teacher education institutions across different provinces or regions for broader generalizability.
2. While the study focused on the School Management course, future studies could explore the implementation of Genius Hour teaching strategy in other pedagogical or subject-specific courses such as Curriculum Development, Educational Psychology, or Classroom Assessment.
3. Further research may employ longitudinal designs to examine the long-term impact of Genius Hour teaching strategy on prospective teachers' instructional practices and professional identity during teaching internships or early in-service teaching.
4. It is also recommended that future research may examine students' engagement using observational and digital analytics (e.g., video analysis and engagement tracking tools) in Genius Hour teaching strategy settings to strengthen the understanding of real-time behavioral and emotional engagement.

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Academic Achievement Test

Guidelines for Students

Note: Students are supposed to follow following instructions:

- This test is designed to assess your understanding of key concepts covered in the *School Management* course.
- It consists of 50 multiple-choice questions, each carrying 1 mark, total 50 marks. You are required to select the most appropriate answer from the four options provided for each question.
- The questions span across all units of the course, including topics such as educational leadership, curriculum planning, communication, record keeping, and school maintenance.
- You will be given 60 minutes to complete the test. Please read each question carefully before answering, and do not spend too much time on a single item.
- There is no negative marking, so it is advisable to attempt all questions.

Academic Achievement Test

School Management

Course Instructor: Ms. Sobia Yaseen

Total Questions: 50

Total Marks: 50

Type: Multiple Choice Questions

Time Allowed: 60 Minutes

Cognitive Levels Included:

- **Knowledge (K):** Recall of facts, terms, definitions
- **Comprehension (C):** Understanding, explanation, interpretation
- **Application (A):** Use of knowledge in school-based situations

1. The primary function of school management is to:
 - A. Teach all subjects
 - B. Organize and coordinate school activities
 - C. Enforce punishment
 - D. Frame national education policy
2. Management in education refers to:
 - A. Personal authority
 - B. Systematic coordination of human and material resources
 - C. Individual decision-making
 - D. Classroom discipline only
3. Which of the following is a core function of management?
 - A. Planning
 - B. Complaining
 - C. Competing
 - D. Punishing
4. The head teacher is mainly responsible for:
 - A. Decorating the school
 - B. Achieving institutional goals
 - C. Teaching one class only
 - D. Managing examinations only
5. Organizing in school management means:
 - A. Ignoring staff roles
 - B. Structuring duties and responsibilities
 - C. Increasing workload
 - D. Avoiding teamwork
6. Which is NOT an element of management?
 - A. Planning
 - B. Organizing

- C. Directing
- D. Gossiping
- 7. Leadership in schools primarily focuses on:
 - A. Authority
 - B. Influence and guidance
 - C. Control
 - D. Punishment
- 8. Curriculum planning refers to:
 - A. Writing textbooks
 - B. Selecting and organizing learning experiences
 - C. Conducting exams
 - D. Hiring teachers
- 9. A school calendar helps in:
 - A. Decorating notice boards
 - B. Organizing academic and co-curricular activities
 - C. Reducing teaching hours
 - D. Increasing holidays
- 10. Delegation means:
 - A. Avoiding responsibility
 - B. Sharing authority with accountability
 - C. Losing control
 - D. Ignoring staff
- 11. Co-curricular activities mainly support:
 - A. Only physical fitness
 - B. Holistic development of students
 - C. Examination results only
 - D. Discipline enforcement
- 12. Communication in school management is essential for:
 - A. Creating rumors
 - B. Coordination and understanding
 - C. Delaying decisions
 - D. Increasing conflict
- 13. Which record shows students' presence?
 - A. Stock register
 - B. Attendance register
 - C. Fee register
 - D. Inventory file
- 14. Financial management in schools deals with:
 - A. Timetables
 - B. Fees, salaries, and expenditures
 - C. Lesson plans
 - D. Student discipline
- 15. A stock register records:
 - A. Examination marks
 - B. School assets and materials

- C. Student enrollment
- D. Teacher attendance
- 16. Time management helps schools to:
 - A. Waste time
 - B. Achieve tasks efficiently
 - C. Reduce accountability
 - D. Increase confusion
- 17. School supervision mainly focuses on:
 - A. Monitoring teaching–learning processes
 - B. Controlling students
 - C. Managing finance
 - D. Hiring staff
- 18. Which document records meeting decisions?
 - A. Lesson plan
 - B. Minutes of meeting
 - C. Attendance sheet
 - D. Circular
- 19. A school register is important because it:
 - A. Is decorative
 - B. Ensures accountability and transparency
 - C. Is optional
 - D. Creates workload
- 20. Maintenance of school buildings ensures:
 - A. Increased workload
 - B. Safe and conducive learning environment
 - C. Financial loss
 - D. Reduced enrollment
- 21. Effective school management leads to:
 - A. Confusion
 - B. Achievement of institutional objectives
 - C. Isolation of staff
 - D. Delayed decisions
- 22. Participative leadership improves school performance because it:
 - A. Reduces authority
 - B. Encourages teamwork and ownership
 - C. Delays action
 - D. Avoids responsibility
- 23. Assigning duties according to teachers' expertise results in:
 - A. Conflict
 - B. Clear accountability and efficiency
 - C. Power struggles
 - D. Work overload
- 24. Collaboration with parents supports schools by:
 - A. Increasing interference
 - B. Strengthening community–school relations

- C. Creating discipline issues
 - D. Reducing autonomy
25. Curriculum revision is necessary to:
- A. Remove activities
 - B. Meet changing educational needs
 - C. Delay learning
 - D. Increase workload
26. A structured co-curricular program helps students to:
- A. Waste time
 - B. Develop leadership and social skills
 - C. Avoid academics
 - D. Create noise
27. Delegation builds trust in schools because it:
- A. Removes authority
 - B. Encourages responsibility among staff
 - C. Creates confusion
 - D. Weakens leadership
28. Clear communication in schools minimizes:
- A. Participation
 - B. Misunderstanding and conflict
 - C. Decision-making
 - D. Accountability
29. Keeping accurate records helps school administration by:
- A. Increasing paperwork
 - B. Supporting planning and decision-making
 - C. Limiting transparency
 - D. Reducing efficiency
30. Daily time management ensures:
- A. Late class starts
 - B. Smooth execution of school routines
 - C. Reduced learning
 - D. Conflicts
31. Teacher appraisal helps schools to:
- A. Punish staff
 - B. Improve professional performance
 - C. Create fear
 - D. Increase workload
32. Health and safety planning in schools focuses on:
- A. Discipline only
 - B. Well-being of students and staff
 - C. Decoration
 - D. Attendance
33. Effective supervision supports teaching by:
- A. Creating pressure
 - B. Improving instructional quality

- C. Avoiding feedback
 - D. Increasing control
34. Maintaining school facilities contributes to:
- A. Student absenteeism
 - B. Positive learning environment
 - C. Teacher stress
 - D. Financial loss
35. A school meeting with a clear agenda results in:
- A. Confusion
 - B. Productive discussion and outcomes
 - C. Delay
 - D. Conflict
36. A head teacher assigns duties based on teachers' skills. This reflects which management principle?
- A. Favoritism
 - B. Division of work
 - C. Centralization
 - D. Punishment
37. If a school faces frequent timetable clashes, which action should the administrator take?
- A. Ignore the issue
 - B. Review and reorganize scheduling
 - C. Increase class duration
 - D. Reduce subjects
38. A decline in student participation suggests the need to improve:
- A. Infrastructure only
 - B. Co-curricular planning
 - C. Financial management
 - D. Record keeping
39. When conflicts arise among staff, the head teacher should use:
- A. Avoidance
 - B. Mediation and fairness
 - C. Blame
 - D. Isolation
40. To improve punctuality, a school should strengthen:
- A. Discipline registers
 - B. Time management practices
 - C. Examination rules
 - D. Financial records
41. If parents are disengaged, the school should:
- A. Reduce meetings
 - B. Increase communication and involvement
 - C. Ignore feedback
 - D. Enforce rules
42. A damaged playground affects students' development. The best administrative response is to:

- A. Close it permanently
 - B. Plan timely maintenance
 - C. Ignore complaints
 - D. Assign punishment
43. When instructional quality is weak, school management should prioritize:
- A. Curriculum supervision
 - B. Decoration
 - C. Financial audits
 - D. Enrollment drives
44. If records are poorly maintained, the school may face:
- A. Better performance
 - B. Administrative inefficiency
 - C. Increased trust
 - D. Improved discipline
45. To ensure transparency in finance, the school should:
- A. Avoid documentation
 - B. Maintain updated financial records
 - C. Limit access
 - D. Delay audits
46. A newly appointed teacher needs guidance. The best approach is:
- A. Leave them alone
 - B. Provide mentoring and support
 - C. Assign heavy workload
 - D. Ignore needs
47. To implement a new policy effectively, school leaders should:
- A. Enforce it suddenly
 - B. Communicate clearly with stakeholders
 - C. Avoid discussion
 - D. Delay action
48. Poor examination results indicate the need for:
- A. Punishment
 - B. Instructional improvement strategies
 - C. Reduced syllabus
 - D. More holidays
49. If staff feel overburdened, management should:
- A. Ignore complaints
 - B. Review workload distribution
 - C. Increase pressure
 - D. Reduce collaboration
50. A well-managed library supports learning by:
- A. Locking resources
 - B. Providing updated and accessible materials
 - C. Limiting access
 - D. Ignoring damaged books

Student Engagement Questionnaire for B. Ed Hons Elementary Students

To what extent do the following behaviors, thoughts, and feelings describe you, in this course. Please rate each of them on the following scale:

- 5= Very characteristic of me
- 4= characteristic of me
- 3= moderately characteristics of me
- 2= not really characteristic of me
- 1= not at all characteristic of me

Sr#	Items	1	2	3	4	5
	Cognitive Eengagement					
1.	I try to connect what I am learning the things I have learned before.					
2.	I try to understand my mistakes when I make something wrong.					
3.	I would rather be told the answer than have to do the work.					
4.	I only study the easy parts when work is hard.					
5.	When I study, I figure out how the information might be useful in the real world.					
6.	I reflect on difficult tasks only superficially.					
7.	While studying, I try to relate my learnings to real life scenarios.					
8.	Besides doing my lessons, I further study for my lessons.					
9.	When I do class work, I check to see whether I understand what I'm doing.					
10.	I create my own illustrations and mnemonics to aid in my understanding of the crucial ideas I discover in class.					
11.	If I have trouble understanding a topic, I go over it again until I understand it.					
	Behavioural Eengagement					
12.	I am an active student in class.					

13.	I attend classes willingly.					
14.	I complete my homework on time.					
15.	I make eye contact with the teacher in class.					
16.	I contribute in class discussion by giving my opinions regarding the topic of discussion.					
17.	I pay full attention in the class.					
18.	In class, I do other things when I am supposed to pay attention.					
19.	I ask questions during lectures and all other teaching sessions					
20.	When I'm in class, I just act like I'm working.					
21.	I listen care-fully in class.					
22.	I can continue working for very long periods at a time.					
23.	I try to do my best regarding my responsibilities in group work.					
	Emotional Eengagement					
24.	I enjoy learning new things.					
25.	I feel happy when I entered my class to attend a lecture.					
26.	I'm interested in what I'm studying in class.					
27.	I feel good when I am in class.					
29.	Sometimes, I feel overburdened by my studies.					

30.	I feel benefited from my teachers during lectures.					
31.	Learning is fun because I get better at things.					
32.	When I become confused about something, I'm reading for this class, I go back and try to figure it out.					
33.	I feel good while working for any assigned task as a team member					
34.	My classes are entertaining.					
35.	I try to think about a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course.					
36.	I attend class by getting prepared in advance.					

INTERVIEW PROTOCOL

Q#1 How did the Genius Hour experience affect your thinking and learning processes?

Q#2 Were you more focused or interested in the content compared to traditional lessons? How?

Q#3 Describe your level of participation during Genius Hour sessions.

Q#4 Did you find yourself putting more effort or spending more time on tasks than usual? Can you give an example?

Q#5 How did you feel while working on your Genius Hour project?

Q#6 Did the process of choosing your own topic/project influence your motivation or emotional involvement?

Q#7 How did the Genius Hour project affect your understanding and performance in the School Management course?

Q#8 In what ways did it help you relate academic concepts to real-life or future professional situations?

Q#9 How did the Genius Hour teaching strategy differ from your previous learning experiences?

Q#10 What aspects of Genius Hour do you think contributed to your learning the most?

Q#11 Were there any challenges you faced during the Genius Hour sessions?

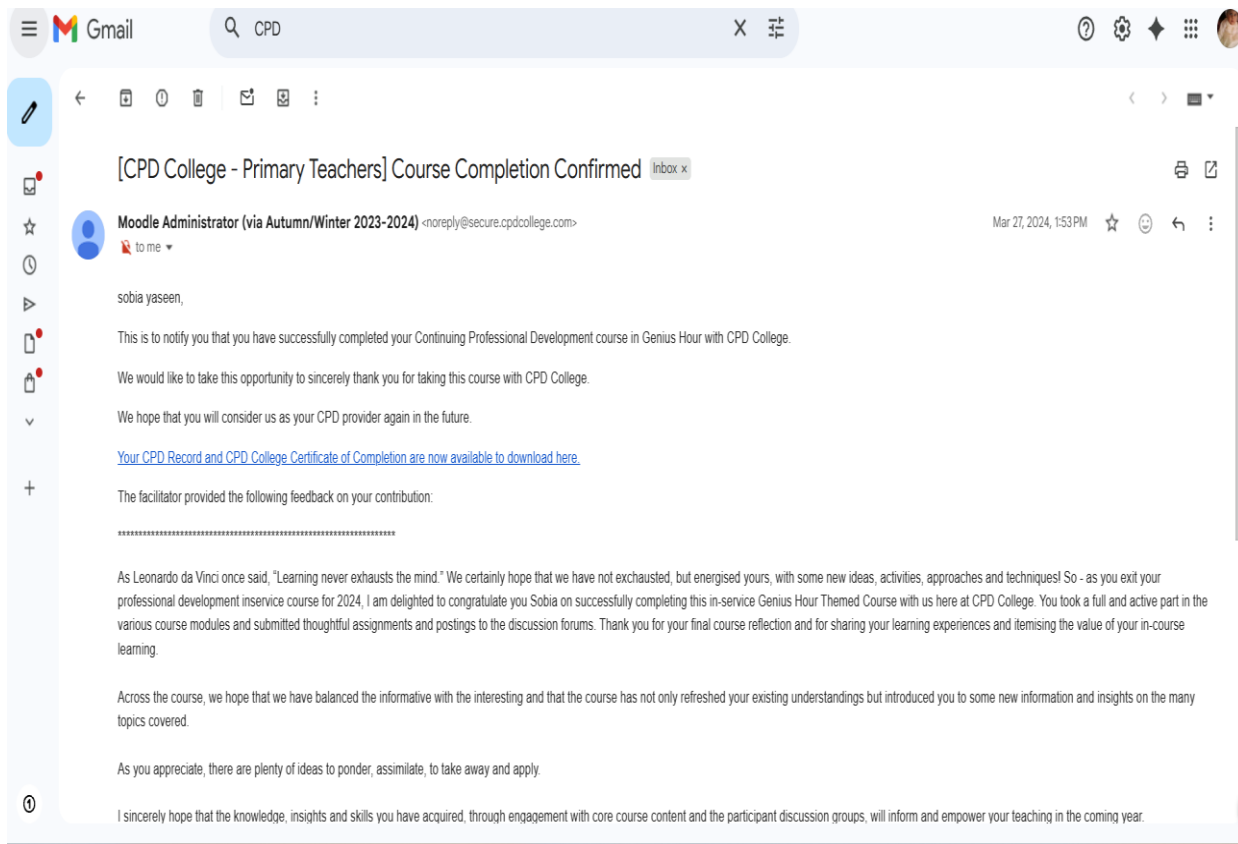
Q#12 If given the chance, would you recommend Genius Hour to be used in other courses? Why or why not?

Answer key

Q. No. Ans Q. No. Ans Q. No. Ans Q. No. Ans Q. No. Ans

1	B	11	B	21	C	31	B	41	B
2	B	12	B	22	A	32	B	42	B
3	B	13	B	23	B	33	B	43	B
4	C	14	B	24	B	34	B	44	B
5	B	15	B	25	B	35	B	45	B
6	B	16	B	26	B	36	B	46	B
7	B	17	B	27	B	37	B	47	B
8	C	18	B	28	B	38	B	48	B
9	B	19	B	29	B	39	B	49	B
10	B	20	B	30	B	40	B	50	B





As you appreciate, there are plenty of ideas to ponder, assimilate, to take away and apply.

I sincerely hope that the knowledge, insights and skills you have acquired, through engagement with core course content and the participant discussion groups, will inform and empower your teaching in the coming year.

With that thought, let me wish you every success in your usage and application of the information and ideas from this course and its associated resources, and we look forward to you studying with us again at CPD College.

CPD College Facilitator

Congratulations.

Frank McNamee, Director CPD College, Enniscorthy Enterprise and Technology Centre, Milehouse Road, Enniscorthy. Co. Wexford <http://www.cpdcollege.com> 053 - 923 0344

Genius Hour Lesson Plans (A complete pack)

A semester containing 32 classes and 16 weeks (two classes of a course per week) in which 40 minutes in a week or 20, 20 minutes in two days of week (students preferred 40 minutes per week), the total number of minutes will be 640 for the completion of task inside the classroom moreover students can also work on their project outside the classroom. Students will take 20% of class time over a period of weeks (16) to pursue a passion (topic of interest selected by the course outline of “School Management. Students dig deeply into a topic that interests them, and create a product or presentation that displays their passion. They have benchmarks to achieve and checkpoints to provide and ways to measure evidence of success. Guidelines for every step are given in this Genius Hour pack for the students of B.Ed. Hons Elementary semester 8th.

Course: School Management (B.Ed. Hons Elementary)

Teaching Strategy: Genius Hour (GH)

Duration: One Semester (14–16 weeks)

Experimental Group: Prospective Teachers

Phase 1: Introduction (Week 1)

Objectives

- To orient prospective teachers to the concept, purpose, and expectations of Genius Hour.
- To build initial motivation and curiosity about Genius Hour in School Management.

Teacher Activities

- Introduce Genius Hour using real-world educational leadership and school improvement examples.
- Explain how GH aligns with teacher professionalism, reflective practice, and lifelong learning.
- Discuss assessment criteria and semester timeline.

Student Activities

- Participate in guided discussion on challenges in school management (leadership, planning, HR, finance, policy).
- Reflect on personal interests and prior knowledge related to school management issues.

Resources

- PowerPoint slides, short videos on inquiry-based learning, course outline.

Assessment

- Informal questioning and reflection notes.

Teacher Preparation

Be prepared with an opening video to get students thinking about their passions (like Daniel Pink's (like Daniel Pink's [Science of Motivation](http://www.ted.com/talks/dan_pink_on_motivation.html) http://www.ted.com/talks/dan_pink_on_motivation.html).

See list at <http://geniushour.wikispaces.com/Student+Resources>.

Scaffold class time to specific benchmarks. Remind students of time constraints: Each benchmark uses only 20% of time (Benchmark 3 and 6 the two presentations are not included in total). Students must budget labour, productivity, and time to fit temporal schedule:

Benchmark 1: Find your passion – 20% of one class

Benchmark 2: Come up with a project – 20% of one class

Benchmark 3: Project Pitch day to class –will likely take entire class

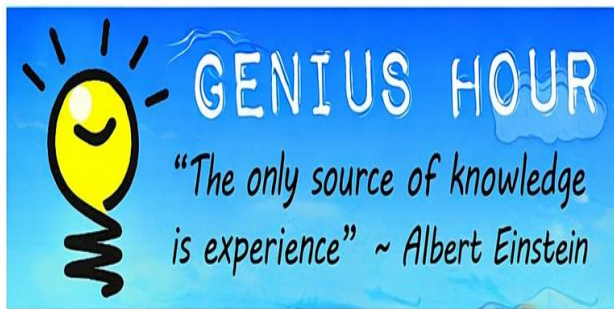
Benchmark 4: Workday on Projects (video record your work) – 20% of ??? classes

Benchmark 5: Share project with a peer. What is needed? – 20% of one class

Benchmark 6: Class presentations—This will likely take entire class—or more

Benchmark 7: Assessment, evidence of learning, summative—20% of one class

If students have trouble finding passions 1) watch previous student projects at <http://theglobalgeniushourproject.wikispaces.com/> or 2) read “Six simple strategies to find their passion”: <http://ajjuliani.com/6-simple-strategies-to-help-find-yourpassion/>.



10 PRINCIPLES of GENIUS HOUR

FOR THE SCHOOL MANAGEMENT COURSE

1) Start with a management-related problem or question

Focus on real issues such as school leadership, planning, discipline, finance, or community relations.

2) Go beyond textbook knowledge

Explore practical solutions, policies, case studies, and real school contexts than relying only on Google or notes.

3) Work toward a practical school management project

Develop action plans, policy drafts, improvement models, or management tools relevant to schools.

4) Share your learning professionally

Projects should contribute to improving school effectiveness, student wellbeing or administrative efficiency.

6) Present and document learning digitally

Use digital tools such as PowerPoint, infographics, videos, or e-portfolios to capture and present



7) Include proper references and bibliography

Support ideas with educational management theories, research articles, and official policy docs.

8) Focus on learning and growth, not just marks

Emphasize skill development, reflective learning, and professional competence over grades.

9) Manage time responsibly

Engage in Genius Hour tasks after completing regular course requirements, reflecting professional time management skills.

Genius Hour



Students Need To:

1

Get the project approved by the teacher.

2

Research their project.

3

Present and share what they have learned.



Let the
Passion Projects
Begin!

The students of B.Ed. Hons Elementary, semester 8th, will have 16 weeks of a semester to work under Genius Hour. Students will be allotted 20 minutes work sessions in each class and there will be total 32 classes. The total number of minutes will be 640 for the completion of task inside the classroom moreover students can also work on their project outside the classroom.

Students will be introduced about Genius Hour teaching strategy in their first-class during week one:

GENIUS HOUR PLANNING AND PREPARATION

What is it?

20% model: students spend 20% of class time (in my case it will be forty minutes each week)

Project based: focused on an area of interest.

Long Term: project can last whole semester.

Gradual Release of Guidance: Start very structured and the more they are exposed to it, the more refined their work becomes.

Collaborative: Students can work in groups of 2-3 or independently.

Creative: Students develop creative product to reflect learning

Vertical Collaboration: It's a great project to do vertically with your GATE team, and would make a perfect collaboration topic to work on guidelines grade to grade

Passion Project: encourages students to pursue a creative interest they would otherwise not experience in core academic program.

Teacher moving from “sage on the stage” to “guide on the side.”

Students play an active role in how the content and knowledge is acquired.

Teachers provide resources, ask questions, and suggest projects for students to explore their content.

Student-centered project rather than a teacher-centered project.

Introduce Genius Hour with these videos

<https://www.youtube.com/watch?v=NMFQUtHsWhc>

<https://www.youtube.com/watch?v=2n7EelMbzG0>

[Genius Hour | FREE Resources and Tips - YouTube](#)

https://www.youtube.com/watch?v=COF-bqZuE-I&ab_channel=JohnSpencer

Genius Hour Introduction:

- Introduction: Watch Kid President Video “Be Awesome” to inspire.
- Students will watch a Genius Hour Introduction video (3-minutes).
- Review and Discuss the 3 Rules for Genius Hour:
- You have to research something
- You have to create something
- You have to present something
- Using the following questions, ask students:
- What are your passions outside of schools?
- What subjects are you interested in?
- What is something you would like to know more about?
- What do you like to do for fun?
- What questions do you “wonder” about?
- Students will brainstorm things they are interested in and passionate about (interests and hobbies) and write ideas on a notebook, laptop or any other material which is feasible for students. Teacher will provide guiding topics for students to consider.

We watched a few different Kid President videos and Ted Talks to get started. Here are a few links:

Four inspiring kids imagine the future of learning: <http://blog.ted.com/4-inspiring-kids-imagine-the-future-of-learning/>

Kid President: How to Change the World:

<https://www.youtube.com/watch?v=4z7gDsSKUmU>

Kid President Has A Dream: <https://www.youtube.com/watch?v=pIUOdrWl-ts>

Ted Talk Making Peace with the Lions:

http://www.ted.com/talks/richard_turere_a_peace_treaty_with_the_lions

Ted Talk: 30 Day Challenge

http://www.ted.com/talks/matt_cutts_try_something_new_for_30_days.html#

Here's some suggestions:

https://docs.google.com/a/acsd.k12.ca.us/document/d/1DMKfi_c0drGqFRL1Ylt5eWqkKTqthnl7LzbCitrGkZg/edit

A great resource for successful projects:

<https://www.youtube.com/watch?v=xupHuEk8p7g>

Genius Hour in School Management



1. Explore Topic



3. Research Question



4. Investigate



5. Take Action



5. Take Action



6. Present Findings

School Management for B.Ed. Hons (Elementary)

Phase 2: Launch (Week 2)

Objectives

To help students identify meaningful, authentic problems related to school management.

To encourage ownership and autonomy in learning.

Teacher Activities

Facilitate brainstorming sessions using prompts such as: *“What problems do schools face today?”*

Guide students in narrowing topics aligned with course objectives.

Student Activities

Generate inquiry questions individually or in small groups.

Select one focus problem (e.g., instructional leadership, school planning, teacher motivation).

Resources

Brainstorming worksheets, concept maps.

Assessment

Review of preliminary inquiry questions.

Topic Ideas



What You Should Not Have:

- Homework Policies
- School Budget
- Discipline Problems
- Classroom Displays
- Parent Meetings
- Staff Motivation

*All topics need to be in form of a researchable question and relate to school management.

What You Should Have:

- 💡 How do different homework policies impact student performance?
- 💡 How can schools better utilize limited budgets?
- 💡 What strategies can reduce student discipline issues?
- 💡 How effective are visual displays in enhancing classroom learning?
- 💡 How can schools increase parent involvement in school activities?
- 💡 What methods can improve teacher motivation and job satisfaction?
- 💡 What methods can improve teacher motivation and job satisfaction?



School Management for School Management

Students worked on their own selected topics by getting ideas about Genius Hour. These examples added more knowledge in students. To ensure focus and depth in student inquiry during the Genius Hour project, topic selection was guided by a structured framework. Students were encouraged to avoid overly broad themes like "library," "school environment," or "leadership" and instead reformulate these into specific, researchable questions. For example, instead of simply selecting "library maintenance" as a topic, students framed it as: "How can the library space be better organized to support active student learning?" Similarly, a broad area like "school clubs" became: "What impact do student-led school clubs have on peer collaboration and leadership skills?" This question-driven approach fostered critical thinking and personalized engagement, aligning with the Genius Hour philosophy of student-centered inquiry. It also allowed prospective teachers to apply course concepts in meaningful, real-world contexts within their educational institutions.



Genius Hour Ideas

Here is a list of what students around the world have researched and done for genius hour:

1. Do babies dream?
2. What changes can I make in our classroom so that everyone enjoys learning?
3. How can people remember things better?
4. Can I make a better seating arrangement in the classroom?
5. How can I help to make a playground safer?
6. What new playground equipment would students enjoy?
7. What can I learn from Albert Einstein? Steve Jobs?
8. Ditch those textbooks, now what?
9. What is the most important thing I can volunteer to do?
10. How many phone numbers can the average person memorize?
11. What is the world's biggest problem?
12. What's the cheapest and nutritious meal a family of 4 could have?
13. Does everyone blink the same amount of blinks in a minute?
14. How many Genius Hour ideas can you brainstorm?
15. What do most students waste time doing?
16. Why do cats like Catnip?
17. Do all kids need the same amount of sleep? Adults?
18. Why is my computer slow sometimes?
19. Can you sneeze with your eyes open?
20. Who invented Pizza?
21. Why don't school buses have seat belts?

©<http://worksheetplace.com>

Students can blog about possible ideas

Genius Hour Project Ideas for the School Management Course

- Create a podcast discussing school leadership challenges, effective principals' practices, or school improvement strategies.
- Write a poem, play, song, story, or blog highlighting issues such as teacher motivation, inclusive education, or ethical school leadership.

- Learn basic educational management terminology used in another language (e.g., English or Urdu policy terms) or create a glossary for school management.
- Teach a younger student or peer a school-related skill such as classroom rules, time management, or student leadership.
- Build a simple website or digital page presenting a school vision, mission, or improvement plan.
- Create an educational cartoon or animated video explaining school rules, discipline policies, or student responsibilities.
- Learn basic coding or digital tools to design attendance systems, simple school databases, or planning tools.
- Investigate careers in education management, such as school principal, coordinator, supervisor, or education officer.
- Use photography or art to document school facilities, learning environments, or inclusive classroom practices.
- Design a 3D model of an ideal school building showing classrooms, staff rooms, and resource allocation.
- Create a board game based on school leadership decisions, budgeting, or problem-solving in schools.
- Design a school-based physical activity or sport that promotes teamwork, discipline, and student engagement.
- Watch TED Talks on leadership and education and create a short TED-style talk on a school management issue.
- Investigate a historical development in education, such as the evolution of school leadership or education policies.
- Design a professional dress code or uniform policy for teachers or students and justify it using management principles.
- Explore child behavior or student needs by studying developmental or inclusive education practices.
- Learn a practical skill (e.g., preparing teaching aids) and link it to efficient classroom and resource management.
- Design, market, and ‘sell’ a school-related product, such as a learning kit, timetable planner, or classroom resource.
- Conduct a small educational experiment, such as comparing classroom management techniques or motivation strategies.
- Create a sculpture, model, or visual display representing effective school leadership, teamwork, or organizational structure.
- Students are supposed to keep in mind these questions for answer

In this proposal, students will answer the following questions. This can be completed on a Google Form, in a presentation, on a paper, or even a post-it!

- What is your project?
- Who will work with you on this project?
- Who is the audience / user base / client base for this project?

- Why is this project worthwhile?
- What is your essential question that you will be focusing on?
- What do you expect to learn from this project?
- What PRODUCT will you have to show at the end of the time?
- What sort of expenses will be involved and how will you cover them?
- What sort of equipment will you need and where will you get it?
- What is your timeline for completing (or launching) your project?
- How will you know you have succeeded.

If students have trouble finding passions 1) watch previous student projects at <http://theglobalgeniushourproject.wikispaces.com/> or 2) read “Six simple strategies to find their passion”: <http://ajjuliani.com/6-simple-strategies-to-help-find-yourpassion/>.

Students will select any topic of their interest from the course outline of “School management” and bring ideas for Genius Hour project on selected topic.

The outline or topics are given below:

Course outline:

Unit 01 Introduction

- 1.1 Definition and concept of organization, administration and management
- 1.2 Importance and impact of effective management
- 1.3 Elements of management

Unit 02 Role of Head teacher as Manager

- 2.1 Head teacher and children
- 2.2 The head teacher and teachers
- 2.3 Working with parents

2.4 Head teacher and supporting staff

2.5 Qualities of a school leader

Unit 03 Planning the curriculum

3.1 Developing and planning yearly calendar for school activities

3.2 Assigning roles to staff

3.3 Monitoring and supervising curriculum

3.4 Curriculum revision

Unit 04 Health, Safety and Co-Curricular Activities

4.1 Planning activities to promote health and safety measures

4.2 Planning and aligning co-curricular

activities with yearly calendar

Unit 05 Management Structure

5.1 Management arrangement

5.2 Collective responsibility

5.3 Senior management team

5.4 The art of delegation

5.5 Appraisal criteria

5.6 Time management

Unit 06 Communication in Schools

6.1 Concept and types of communication

6.2 Meetings in school (preparation, conduct and recording the proceedings)

6.3 Establishing a communication network

Unit 07 Record Keeping in Schools

7.1 Attendance record

7.2 Enrolment record

7.3 Examination record

7.4 Financial records

7.5 Maintaining stock registers

7.6 School registers

Unit 08 Managing Daily Activities

8.1 Time management

8.2 School day activities

8.3 Arranging the classes

8.4 Staffing arrangement

8.5 In time directions to address day needs

8.5 Conflict management

Unit 09 School Maintenance

9.1 maintenance of building

9.2 maintenance of Library

9.3 Laboratories

9.4 maintenance of play ground

9.5 maintenance of horticulture

Genius Hour

Project Proposal

1. What is your proposed topic? _____
2. What are the top 3 inquiry-based questions you brainstormed about your topic?
 - 1.
 - 2.
 - 3.
3. Why are these questions important to you?
4. What do you hope to learn?
5. How do you plan to share your project with others?
6. What materials will you need?
7. On the back, list some ways that I can support you and your project.

Resources:

Drive: The Surprising Truth About what Motivates Us by Daniel Pink.

Video: <http://www.youtube.com/watch?v=rrkrvAUbU9Y>

Genius Hour LiveBinder: <http://www.livebinders.com/play/play?id=829279>

<https://www.slideshare.net/slideshow/introduction-to-genius-hour/238325335>

<https://truthforteachers.com/truth-for-teachers-podcast/how-to-use-genius-hour-to-transform-student-motivation-and-ignite-creativity/>

Students will fill this sheet.

My Topic Idea

Name: _____

Date:

Passionate Project Idea

You need a thoughtful question that you want answered. It can't be something you can simply "Google" and find the answer easily.

Question:

Preliminary Research (*Is there information on this topic?*)

Teacher Approval

☐ You have been approved.

☐ You have not been approved because: _____

Phase 3: Pitch (Week 3)

Objectives

- To develop communication and justification skills.
- To refine inquiry questions through peer and teacher feedback.

Teacher Activities

- Explain pitch format and evaluation rubric.
- Provide constructive feedback on feasibility and relevance.

Student Activities

- Present inquiry idea (problem, purpose, expected outcome).
- Engage in peer questioning and discussion.

Resources

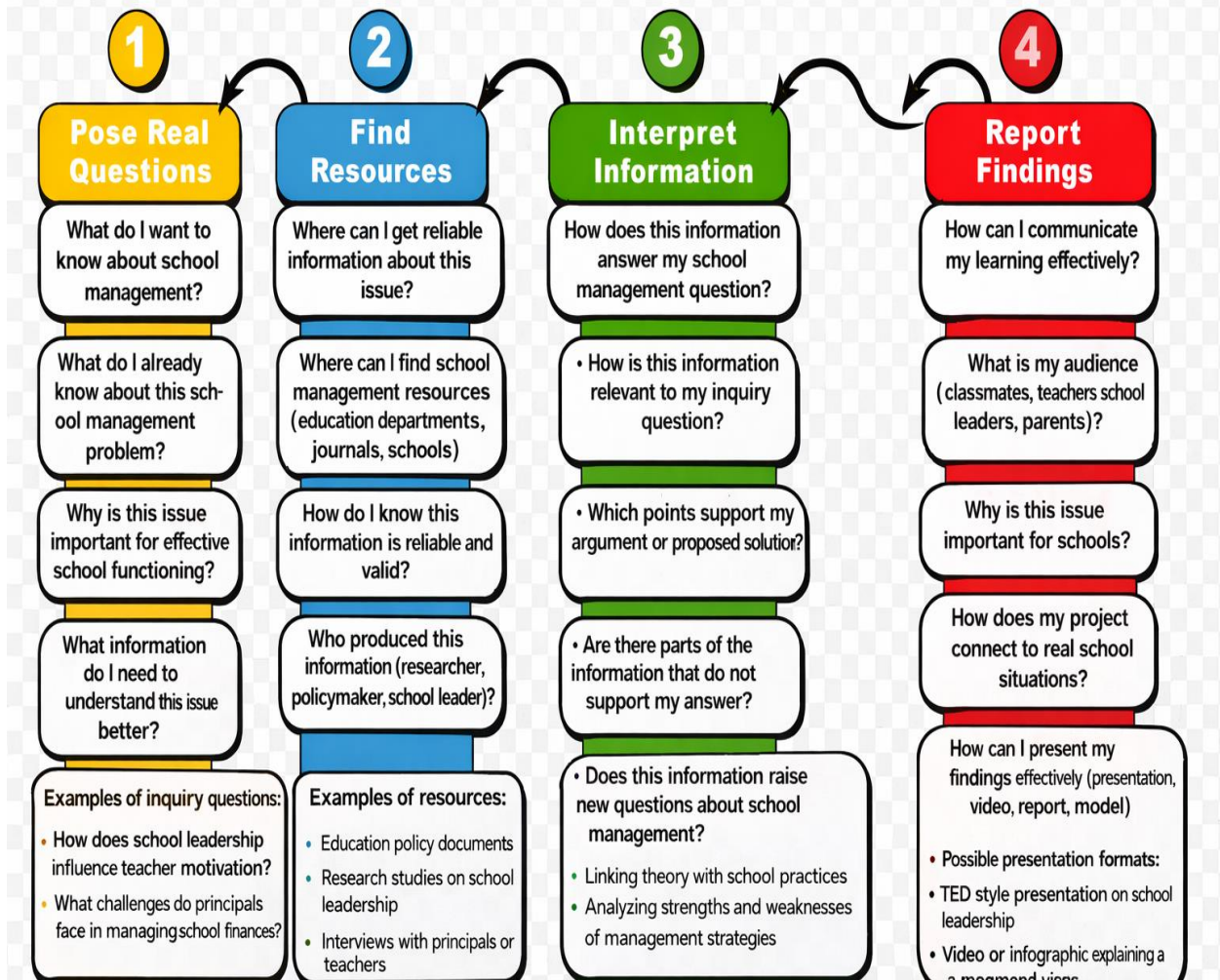
- Pitch templates, rubric.

Assessment

- Formative assessment using pitch rubric.

The Inquiry Process

for the School Management Course (Genius Hour)



Students will follow Thin question vs. Thick questions skills for getting more clarity about their topic of interest.

Thin Questions vs. Thick Questions

The title of your passion project is going to be in question form, in a THICK-QUESTION format.

Thin Questions

- *Can be answered very easily
- *Usually can be answered with one word
- *There is not much discussion needed to answer a thin question
- *The answer can be easily found-It is "Googleable"
- *Answers are on the surface

Examples of Thin Questions

Ex. Who is the main character?

Ex. Where does the setting take place?

Thin Questions start with:

Who...

What...

Where...

When...

Rough Idea of Your Thick Question

Thick Questions

- *Harder to answer
- *Needs evidence to help answer the question
- *There might be many answers
- *Answers have depth
- *Need background knowledge to help answer the question
- *Answers might be open-ended
- *"Non-Googleable"

Question Starters for THICK Questions

What is the impact...

What is the influence...

What is the relationship...

What if...

What would happen...

What could happen...

What is the result...

How can you use...

What is the cause...

What is the effect...

How can you change or modify...

What could be done to improve...

Why... How...

Thin Questions

~ Right There ~

- Who?
- What?
- Where?
- When
- How many...?

Thick Questions

~ Think and Search ~

- What if...?
- How did...?
- Why did...?
- What would happen if...?
- What might...?
- How would you feel if...?
- What do you think...?

Free Inquiry Proposal

By: @trev.mackenzie



1. What is your essential question?
Please share why it is meaningful to you.



2. What is your authentic piece?
How will you make your learning public? ..



3. What will you read, research and study to help explore your essential question?



4. What are your goals for your free inquiry?



5. What learning evidence will you gather to capture everything you are learning about your essential question?



6. What is your plan? Create a calendar and day-to-day plan to help your free inquiry unit to be a successful learning experience.



@bathursthurl

Project Chart



Quick glance of who is doing what project.

Names

Projects



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Students have to get an idea from the above sheet and will mention the topic of their choice for Genius Hour accordingly as mentioned below:

Sr. No	Regd. No.	Name	Project
1	2022-UOK-01329	Abrash Maliha	Library Maintenance
2	2022-UOK-01330	Rehana sultan	Planning activities to promote health and safety for school going kids
3	2022-UOK-01336	Bushra Ilyas	Planning and Aligning co-Curricular activities yearly calendar
4	2022-UOK-01314	Sana Misry	Arranging the classes
5	2022-UOK-01322	Fakhira Maroof	Maintenance of play ground
6	2022-UOK-01305	Sidra Ashraf	Working with Parents
7	2022-UOK-01308	Asma Tariq	Staff Arrangements
8	2022-UOK-01347	Nayab Naeem	Maintenance of library
9	2022-Uok-01303	Roba guldad	maintenance of play ground
10	2020- UOK-AGPKR(C)- 00544	Muqaddas Ejaz	Co-Curricular activities
11	2022-UOK-00779	Iqra Bibi	Staff Arranging
12	2022-UOK-011324	Mahnoor Altaf	Arranging the classes
13	2022_UOK_01331	Benish Bananas	School Register

14	2020-UKT-AGPKR(C)-00551	Nighat Nisar	Arranging the classes
15	2022-UOK-01301	Arooj Kaleem	School day Activities
16	2022-UOK-01345	Amra Shafaqat	Relationship between Head teacher and Students
17	2022-UOK-01344	Qurat ul Ain	A survey on students' ability to handle stress
18	2022-UOK-01335	Fozia Fazal	Maintenance of School Building
19	2022-UOK-01325	Sunainan Jahangir	Environmental club
20	2022-UOK-01349	Um-ul-kheair	School day activities
21	2022-UOK-01316	Ahsan Ali	Role of Head Teacher as a Manager/Head Teacher and Students
22	2022-UOK-01341	Qirat Zahid	Head teacher with children Main idea: social skills
23	2022-UOK-01321	Tanzeela Fatima	Examination record
24	2022-UOK-01315	Aniqa Lal	Maintenance of horticulture
25	2022-UOK-01307	ifza Shabbir	Health and safety measures
26	2022-UOK-01310	Nafisa Riyaz	Environmental club
27	2022-UOK_01350	Naila Zafar	Information and Learning resources through technology

28	2020- UKT- AGPKR(C)- 00552	Rimsha Qayyum	School day activities
29	2022.UOK_01327	Sobia Latif	Developing and planning yearly calander for school activities
30	2022-UOK-01346	Abdul Ghafar	Maintenance of horticulture
31	2022-UOK-01337	Ghazala Javad	Staff Arranging
32	2022-UOK-01323	Sidra Kouser	Arranging the classes
33	2022-UOK-01327	Sobia Lateef	School Register
34	2022-UOK-01320	Natasha Rayaz	Arranging the classes
35	2022-UOK-01309	Aleeza Munavar	School day Activities
36	2022-UOK-01307	Ifza Shabeer	Relationship between Head teacher and Students
37	2022-UOK-01306	Saba razaq	A survey on students' ability to handle stress
38	2022-UOK-01304	Hadia sajjad	Health and safety measures
39	2022-UOK-01303	Roba guldad	Environmental club
40	2022-UOK-01346	M. Zubair	Information and Learning resources through technology
41	2022-UOK-01348	Saman Zaheer	School day activities
42	2022-UOK-01350	Momina Nazeer	Working with Parents

43	2022-UOK-01351	Hina Qadeer	Planning activities to promote health and safety for school going kids
44	2022-UOK-01352	Mahnoor Altaf	Planning and Aligning co-Curricular activities yearly calendar

Students were instructed to fill this sheet for the progress of their project whenever discussing with teacher.

Conferencing 	
Date: _____ Students: _____ _____	Discussed: _____ _____ _____ _____
Date: _____ Students: _____ _____	Discussed: _____ _____ _____ _____
Date: _____ Students: _____ _____	Discussed: _____ _____ _____ _____
Date: _____ Students: _____ _____	Discussed: _____ _____ _____ _____

 The goal is to meet with four groups a week.

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Note Taking



Name: _____ Date: _____

Resource:

Facts and information:



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Types of Research



- Internet using reliable sources
- Educational books and textbooks
- Reports and school documents



- Interviews with school leaders
- Surveys and questionnaires



- Articles from education journals
- Case studies on school issues
- Observation in school settings



- Case studies on school issues
- Observation in school settings



* Remember, use sources that are trustworthy. You may need to check several different resources to make sure the information is reliable.



Students will work according to this pitch sheet on their projects.

Pitch Checklist

Directions: Please include the following information when completing this form. You must include.

Project Title (the issue you will focus on)

KWH

K – What do you already know about this issue?

W – What do you want to know about this issue?

H – How are you going to find out what you would like to know about this issue?

Why did you choose this issue?

How can your peers support you as you work on your project?

What do you hope to create as a product to represent your project?

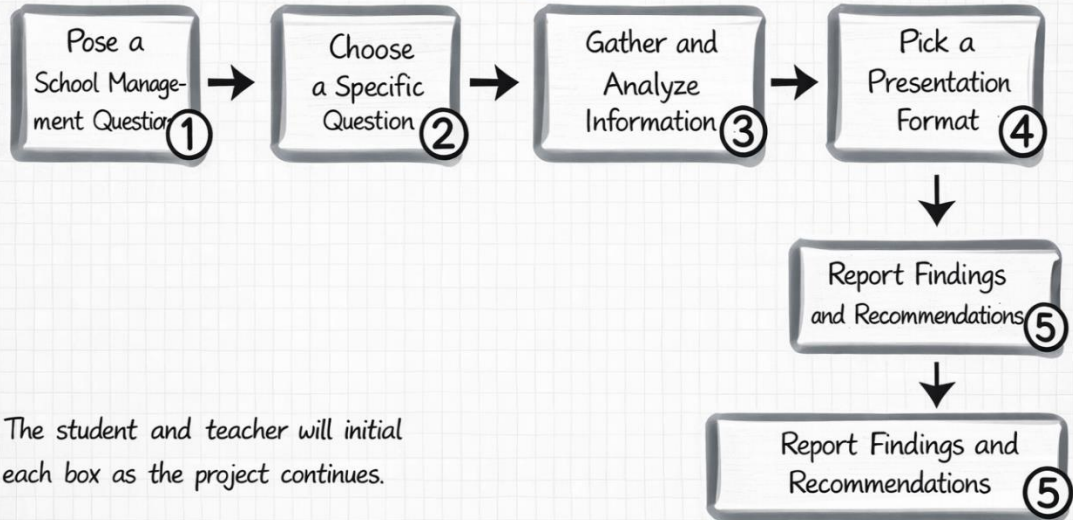
Genius Hour Project Time

Discuss progress so far and timeline for completion.

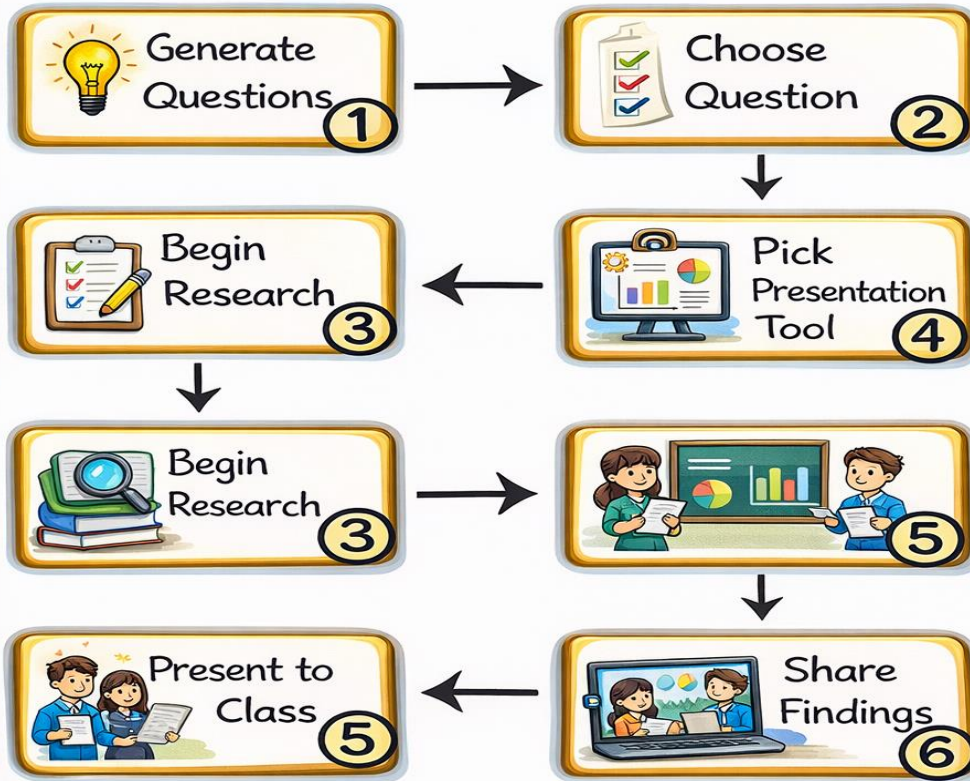
Students will work on research for individual projects

Students will blog about progress with project

'Name's Genius Hour School Management Project Timeline



School Management Project Timeline



The student and teacher will initial each box as the project continues.

School Management for B.Ed. Hons (Elementary)

Genius Hour

What are you **PASSIONATE** about?

Reflection Sheet

Week #.....

What did you learn about today? How did you complete your research?

Did you make any changes to your passion project? If so, what were they? If not, why not?

What questions do you have after today? How could you find some of these answers?

What took up the majority of your time today? Was this a success or do you need to rethink your ideas?

What do you need to do / get before our next genius hour?

"You can't spell Genius without US!"

Genius Hour Project Time

Students will meet with teacher for Project Check-In during assigned conference time

Students will blog about progress with project.

Students will work on Genius Hour Projects on the topic of their interest which was selected by the students from their course school management.

Students will meet with teacher for Project Check-In during assigned conference time
students will blog about progress with project.

At this stage teacher will give continuous feedback on student's projects for a wonderful
accomplishment of the project.

Check-in Sheet



Name: _____ Date: _____

Where I am in my Passion Project:

Questions I have at this time:

What is going well with my project:

When do I think I will be ready to
present:



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Phase 4: Action (Weeks 4–10)

Objectives

- To promote deep cognitive, behavioral, and emotional engagement.
- To apply theory to practice through self-directed research.

Teacher Activities

- Act as facilitator and mentor.
- Conduct progress check-ins and mini-workshops (research skills, data collection, reflection).

Student Activities

- Collect data (literature review, interviews, surveys, observations).
- Analyze findings and relate them to school management theories.

Resources

- Library access, online databases, fieldwork tools.

Assessment

- Progress logs, reflective journals.

Final Product: While brainstorming, students were asked to make the project “Product Focused.” At the end of the designated time they needed to have made a completed product.

Product Ideas:

Physical Products: graphic novel, community garden, balloon that takes photos from the stratosphere, composting program.

Organizations: a tutoring pool, a recycling drive, a craft club at recess.

Digital Projects: a short film, video game.

What it is NOT: Students should be able to quickly move from the idea phase of this project to the producing phase. ***If you can “google” the idea and come up with a quick answer, it’s NOT a Genius Hour Project.***

Students from school management course did it as given below:

Category	Example Products	Contextual Relevance
Physical Products	- Renovated school library layout- Horticulture plan for school garden- Creative wall displays for school clubs- Waste management bins	These products involve practical changes in school infrastructure and promote environmental responsibility.
Organizations	- Peer-led mentoring or tutoring club- Eco-friendly committee for reducing school waste- Reading club for elementary students	Encourages leadership, planning, and community involvement aligned with school management practices.
Digital Projects	- Video documentary on library maintenance- Presentation on leadership qualities in school heads- YouTube vlog on students' club experiences	Students use technology to showcase management practices, encouraging ICT integration in education.

Category	Example Products	Contextual Relevance
What It Is NOT	Projects that can be completed by just gathering surface-level facts from the internet, such as “What is a school?” or “What does a principal do?”	Genius Hour projects must involve original thought, problem-solving, and hands-on implementation.

Phase 5: Presentation (Weeks 11–13)

Objectives

- To enhance communication, confidence, and professional presentation skills.
- To share knowledge and practical solutions.

Teacher Activities

- Organize presentation schedule and criteria.
- Facilitate peer feedback sessions.

Student Activities

- Present findings using posters, PowerPoint, or models.
- Respond to questions and critiques.

Resources

- Multimedia tools, presentation rubric.

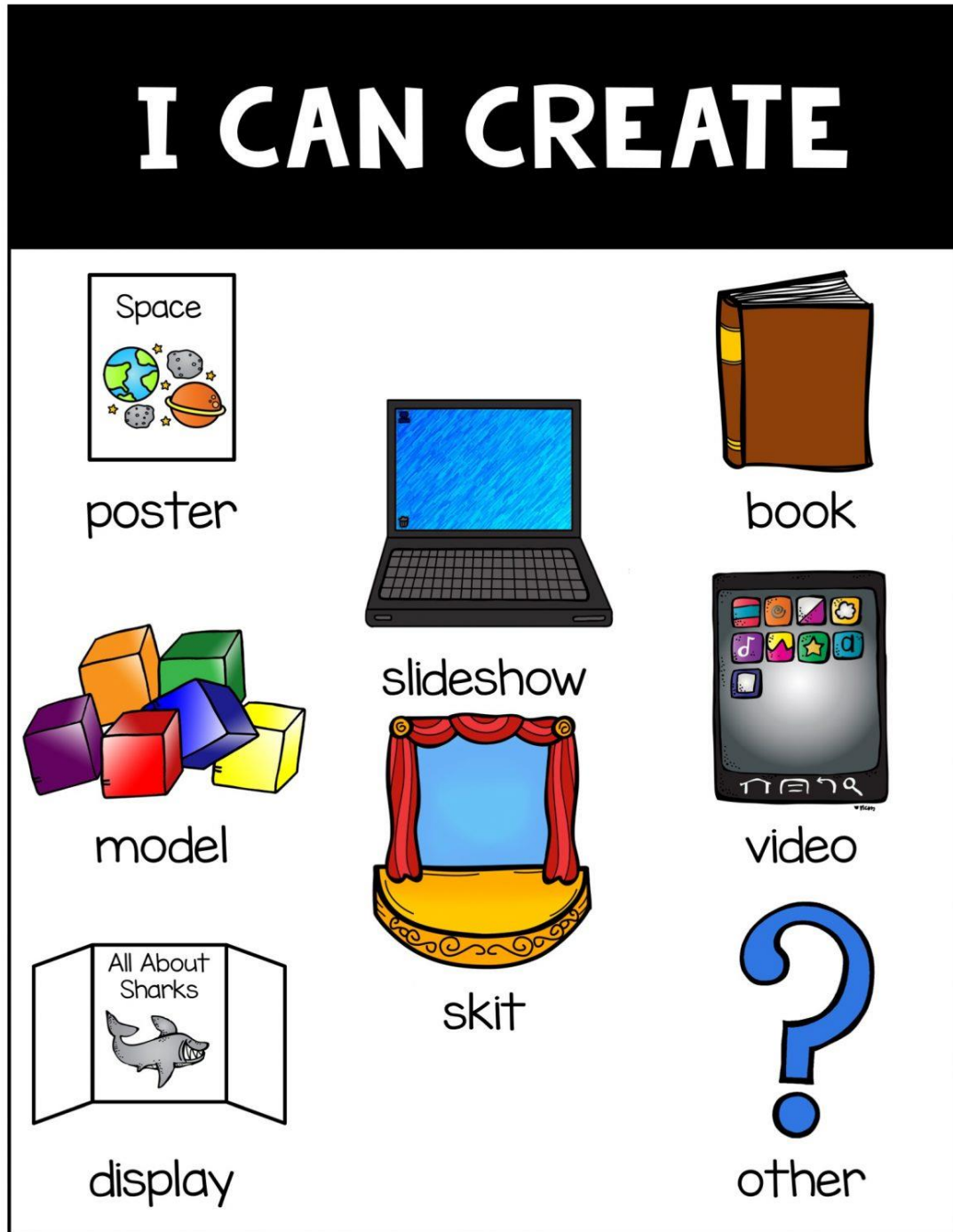
Assessment

- Summative assessment of presentations.

Project Rubric and Examples

Discuss presentation format for presentations.

Review Draft Rubric for student feedback & potential changes



Showcasing Learning at the End of the Genius Hour: School Management Course

At the conclusion of the Genius Hour process, prospective teachers in the School Management course are expected to create a tangible product that demonstrates their learning, understanding, and application of school management concepts. It is essential to provide structured opportunities for students to present and showcase their learning outcomes. In many cases, the product itself serves as evidence of learning; however, students may also use various creative and academic media to communicate their findings, reflections, and recommendations.

The following are suggested Genius Hour project outputs, specifically aligned with the School Management course:

- Create a poster illustrating key school management concepts such as leadership styles, school governance, or organizational structure (digital or handmade).
- Develop a shoebox diorama representing a model school environment or administrative structure.
- Create an illustrated timeline showing the evolution of educational administration or education policies.
- Produce a video demonstrating understanding of a school management issue (e.g., effective leadership, staff motivation, school safety, budgeting, or community involvement). Videos may include role plays, interviews with school heads, documentaries, or animations.
- Prepare a PowerPoint or Prezi presentation explaining a school management concept such as strategic planning, decision-making, or supervision.
- Design a model of a school (physical or digital) highlighting administrative units and management functions.
- Use a three-panel display board to present a school improvement plan or management framework.
- Create a board game based on school management challenges and decision-making scenarios.
- Write a poem reflecting the role of leadership or ethical responsibilities of school administrators.
- Write and perform a skit depicting real-life school management issues and solutions.
- Develop a TV or radio commercial promoting quality education, school discipline, or leadership effectiveness.
- Make a collage representing effective school leadership and organizational culture.
- Create a mobile showing relationship among school management functions (planning, organizing, directing, controlling).

- Design a test related to school management concepts with an answer key.
- Create a word search using key school management terminology.
- Develop a crossword puzzle based on leadership, supervision, or policy concepts.
- Write a formal report on a school management problem with proposed solutions.
- Create a flowchart or diagram illustrating decision-making processes or administrative procedures.
- Write an interview script with a school head, administrator, or education officer.
- Develop analytical questions with answer keys related to school management cases.
- Write reflective journal entries on learning experiences during Genius Hour.
- Write a formal letter or correspondence between school administration and stakeholders.
- Create a scrapbook documenting school management practices or reforms.
- Prepare a photo album highlighting effective school environments and leadership practices.
- Produce an instructional video on classroom supervision or school administration techniques.
- Deliver a formal presentation on a selected school management topic.
- Create an interactive notebook documenting concepts, reflections, and resources.
- Develop a set of task cards focusing on school management roles and responsibilities.
- Design a pamphlet or brochure explaining school rules, leadership roles, or management policies.
- Write a newspaper article on a contemporary school management issue.
- Perform a puppet show illustrating leadership challenges in schools.
- Organize a debate on school management issues (e.g., centralized vs. decentralized management).
- Conduct a mock court case related to school discipline or policy violations.
- Create a reality show episode based on real-life school leadership challenges.
- Design a game show testing knowledge of school management concepts.
- Use graphic organizers (concept maps, mind maps, Venn diagrams) to explain relationships among management functions.

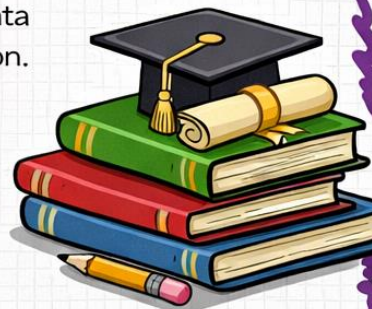
Ways to Showcase Learning

School Management Course



Suggested ways prospective teachers can share their Genius Hour project findings in the School Management course:

- ✓ Deliver a PowerPoint, Prezi, or similar multimedia presentation on school leadership, strategic planning, or resource management.
- ✓ Design a poster explaining a school improvement plan, leadership style, or administrative function.
- ✓ Produce a video simulating school meetings, policy discussions, or educational initiatives.
- ✓ Develop a physical or digital model of a school structure, showcasing administrative units and leadership roles.
- ✓ Make a three-panel display board to present school improvement strategies or management principles.
- ✓ Write and act out a skit demonstrating staff supervision, problem-solving, or parent engagement in schools.
- ✓ Write a formal report analyzing a school management issue with recommendations for improvement.
- ✓ Create charts or graphs illustrating school data such as student performance, budget distribution.
- ✓ Prepare a pamphlet, brochure, or newsletter explaining school policies or management procer.
- ✓ Organize a panel discussion with roles such principal, education officer, and school counselor to explore a key management issue.



Remember to balance informative content with visual appeal and clarity.

You're Invited

School Management Course



Suggested ways prospective teachers can share their Genius Hour project findings in the School Management Course on:

☒ Dear _____

I am inviting you to my Genius Hour Presentation in the School Management Course on _____.



Hope to see you there,

You're Invited



Dear _____,

I am inviting you to my Genius Hour Presentation in the School Management Course on _____.



Hope to see you there,

Remember to balance informative content with visual appeal and clarity.

Phase 6: Reflection & Assessment (Weeks 14–15)

Objectives

- To encourage metacognitive reflection and professional growth.
- To evaluate academic learning and engagement.

Teacher Activities

- Guide reflective discussions linking GH experience to future teaching roles.
- Administer post-test and engagement scale.

Student Activities

- Submit reflective reports on learning, challenges, and engagement.
- Participate in group reflection discussions.

Resources

- Reflection prompts, assessment tools.

Assessment

- Reflective reports, post-test, engagement scale.

Expected Outcomes

- Improved academic achievement in School Management.
- Enhanced cognitive, behavioral, emotional, and classroom engagement.
- Development of inquiry, leadership, and reflective teaching skills.

My Presentation



Remember:

- Speak clearly and loud enough for all to hear.
- Show your presentation so all can see.
- Share what you have learned about your topic.
- Answer questions at end of presentation.

Self-evaluation

Name: _____

What things went well with your presentation?

What things do you think you could improved on?

Did the research of this topic encourage you to want to learn more on this topic? Explain.

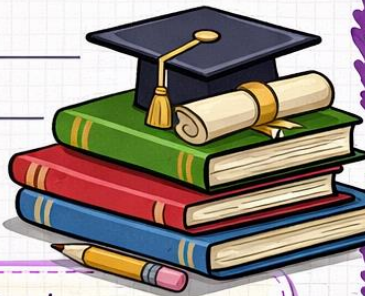
What grade would you give yourself?

Why? _____



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Students will reflect on the Genius Hour Project using the GH Wrap Up Exit Slip.

Presentation Rubric 	Presentation Rubric 
Presentation Rubric Name: _____ Content: ☒ Addressed school management question ☒ Information was accurate and relevant ☒ Analysis was clear and thorough ☒ Solutions were practical and feasible. ☒ Demonstrated critical thinking Presentation: ☒ Spoke clearly and confidently ☒ Used visuals like charts/slides effectively ☒ Answered questions knowledgeably ☒ Stuck to the time limit Comments: _____ _____	Presentation Rubric Name: _____ Content: ☒ Spoke clearly and confidently ☒ Used visuals like charts/slides effectively ☒ Answered questions knowledgeably ☒ Stuck to the time limit Overall Grade: _____ _____ _____ _____ Overall Grade: _____ _____ 
Remember to balance informative content with visual appeal and clarity.	

Genius Hour Reflection Prompts

- Engagement & Learning Experience
- Today, I experienced meaningful engagement in Genius Hour when ...
- What specific task or activity did you complete today during Genius Hour?
- What new concept, idea, or skill related to school management did you learn today?
- How do you know that learning occurred? Provide evidence (e.g., discussion, product, presentation, decision-making).
- What factors (resources, peers, guidance, autonomy) supported your learning today?
- What did you do well during today's Genius Hour session? What aspects need improvement?
- Describe your progress toward your Genius Hour project goals.
- How can the knowledge or skills learned today be applied in real school settings?
- Conceptual Understanding
- What were the main school management ideas addressed in today's session?
- Which concept did you understand best and why?
- What prior knowledge or skills did you apply during today's Genius Hour activity?
- Which academic or practical resources helped you understand the topic better?
- Time, Effort & Use of Technology
- This week, I managed my time effectively during Genius Hour when ...
- Did ICT or digital tools support your learning today? If yes, how?
- During this Genius Hour session, I experienced a breakthrough when ...
- Critical Thinking & Inquiry
- Why do you think what you learned today is important for future school leaders or teachers?
- What questions did you ask or answer during today's session? What questions do you still have?
- What feedback did you receive, and how will you use it to improve your work?
- What aspect of today's learning did you find most interesting or meaningful?
- Is there a question related to school management that you would like to discuss further with your instructor?
- Reflection on Prior Knowledge & Assessment
- What did you already know about this school management topic before today's session?
- How can you demonstrate that learning has occurred? (e.g., explanation, model, plan, reflection)
- If you were designing an assessment or quiz based on today's topic, what questions would you include?
- Creativity, Problem-Solving & Growth
- Did you engage in creative or innovative thinking during today's Genius Hour? Explain.

- Did you experience any “aha” or WOW moments related to school management?
- What was your favorite activity this week, and why?
- Is there an area where you feel you need further support or clarification?
- What do you consider your greatest achievement in Genius Hour this week?
- Collaboration & Professional Skills
- Is there a piece of learning or insight you would like to share with your peers?
- One way I supported or collaborated with a peer today was ...
- One way I demonstrated initiative or resourcefulness was ...
- How would you rate your participation during Genius Hour? What does excellent participation look like?
- Challenges, Reflection & Improvement
- What aspect of today’s learning was challenging or confusing?
- One example of effective time management during Genius Hour was ...
- Describe one learning challenge or mistake you encountered and what you learned from it.
- What do you need to explore further, and how will you do so?
- What did you learn about yourself as a learner or future teacher?
- What did you learn about the process of learning itself?
- Creativity, Emotions & Future Application
- When were you most creative during Genius Hour? Why?
- Describe a frustration you experienced and how you addressed it.
- Describe one unexpected learning outcome from this week’s Genius Hour.
- If you were to redesign this project, how would you improve it?
- How did feedback help you understand your strengths and areas for improvement?
- What learning from this Genius Hour can you apply to future teaching or leadership roles?

<https://youtu.be/I49pvNBRhBc>

https://youtu.be/YYl_aJx5k4A

<https://youtu.be/4XzJVGR2GXc>

Genius Hour Class Progress Tracker

Name of Student	Inquiry question has been established.	Success criteria have been identified.	Research has been completed and compiled.	Presentation mode has been selected.	Final project has been presented.	Self-reflection has been completed.

The Final Presentation

At the end of the designated time, each student/team will give a brief three to five-minute presentation to students, teachers, and community members where they will show off their work. This will be carefully written, choreographed, and rehearsed to produce the best presentation they’ve ever given. These TED-style presentations will be delivered and recorded for students’ portfolios.

Here is a two-minute video of highlights from another teacher’s projects: <http://www.youtube.com/watch?v=XbUkkJ-8hNU>

Genius Hour Double-Entry Journal

What did you learn?

What did you make/create?

Epic Failures 😊

Goal For Next Time

Did you accomplish last week's goal? Why/why not?

A glimpse of the work done by students in school management course during Genius Hour is given below:

<https://youtu.be/cFCV2G0rkg0?si=TwUmAUwm8PnxUfNU>

<https://youtube.com/watch?v=roSZdUemmso&feature=shared>

<https://youtube.com/shorts/dWjzQDTAdAU?si=eFvn2v69sAzAXR5g>

https://youtu.be/KLhhuw-cEJQ?si=l_CwzJ8X-23L0kKA

<https://youtu.be/RhjcvX40FO4?si=TTQTeQOznWXwCqps>

https://youtube.com/shorts/gG0LaGAv78Y?si=KYXS8OAK6Yib0n_y

<https://youtu.be/6nkQJFST698?si=u0p64eJBjF6Eskrb>

Digital note book was also done by a student, the link of the notebook is given below:

<https://www.canva.com/design/DAGpIMBaS->

[E/FfE8509XWbWwVSx4MM6JXQ/edit?utm_content=DAGpIMBaS-](https://www.canva.com/design/DAGpIMBaS-E/FfE8509XWbWwVSx4MM6JXQ/edit?utm_content=DAGpIMBaS-)

[E&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton](https://www.canva.com/design/DAGpIMBaS-E/FfE8509XWbWwVSx4MM6JXQ/edit?utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton)

Assessment

A portion of their grade will be dependent on the following elements with rubrics.

- The Proposal (Is the proposal on-time, and does it address the required questions appropriately?)
- The Blog/Edmodo (Does the post meet the required length, address the required topic, and submitted to the form on-time? Do you post regularly?)
- The Product (Did you successfully move from idea phase to production phase, and do you have something to show at the end of the project?)
- Productivity (Are you spending your 20% time by actively and passionately working on your project? If not, we need to quickly adjust the project so you are working on something that is intrinsically motivating. This is less objective, but if I see students not being productive, I will intervene.)
- Final Presentation (Does your presentation meet all of the required elements?)

Self Assessment (See the planning form for students to self-assess)

45. What did you learn that you can apply to your future projects?

<https://youtu.be/I49pvNBRhBc>

https://youtu.be/YYl_aJx5k4A

<https://youtu.be/4XzJVGR2GXc>

Lesson Plan for Control Group

Subject: School Management
Program: B.Ed. (Hons) Elementary
Topic: Role of Head Teachers as Managers
Teaching Method: Traditional Lecture Method
Class Duration: 1 hour 30 minutes = 90 minutes
Class Size: 44 students
Instructor: Ms. Sobia Yaseen

1. Learning Objectives

By the end of the lesson, students will be able to:

- Define the managerial role of head teachers.
- Identify key responsibilities and functions of head teachers as managers.
- Explain how head teachers manage relationships with students, teachers, parents, and support staff.
- Recognize the qualities of effective school leadership.

2. Teaching Materials

- Whiteboard and markers
- Lecture slides
- Handouts summarizing roles and responsibilities
- Classroom projector

3. Lesson Content Structure

Time	Component	Teacher's Activities	Students' Activities
10 mins	Introduction & Motivation	Welcome students, state topic and objectives. Ask a warm-up question: "What comes to mind when you hear the word <i>head teacher</i> ?"	Participate in the discussion.
20 mins	Definition and Scope of Head Teacher as Manager	Explain the meaning of management in school context. Introduce core functions: planning, organizing, leading, and controlling.	Listen attentively and take notes.
20 mins	Relationships with Stakeholders	Describe how head teachers manage relationships with:	Observe, ask questions, and

Time	Component	Teacher's Activities	Students' Activities
		• Students • Teachers • Parents • Support Staff	relate to practical examples.
10 mins	Qualities of an Effective School Leader	Discuss leadership traits such as communication, empathy, decisiveness, delegation, and vision.	Note down qualities and provide examples.
10 mins	Case Example / Mini Scenario	Present a real-life or hypothetical case of a head teacher managing a school situation (e.g., conflict resolution or staff coordination).	Listen and reflect on the leadership strategies used.
05 mins	Summary & Recap	Summarize key roles and functions. List key takeaways on board or slide.	Ask clarification questions and participate in summary.
10 mins	Question & Answer / Informal Assessment	Ask oral questions covering major lesson points. Clarify misunderstandings.	Respond to questions and complete quick review.
05 min	Assessment	• Oral questioning and observation during the lecture • End-of-lesson recap to gauge understanding • Class participation	

INTERVIEWS

Respondent 1

The first respondent described a profoundly positive experience with the Genius Hour teaching strategy, reflecting enhanced engagement across cognitive, behavioral, and emotional domains. In terms of cognitive engagement, the participant highlighted autonomy and ownership of learning as key drivers of motivation, stating, *“Genius Hour teaching strategy allowed me to choose a topic I was genuinely passionate about... This freedom made me excited.”* This sense of agency led to greater focus and investment in the learning process compared to traditional assignment-based instruction. From a behavioral perspective, the respondent noted active and consistent participation, as well as initiative-taking throughout the project: *“I took the initiative... each session I came up with ideas.”* The student emphasized that the meaningful nature of the project resulted in more effort and sustained involvement. Emotionally, the respondent expressed excitement and curiosity, indicating a strong personal connection to the learning experience: *“It didn’t feel like just another assignment.”* These feelings of enthusiasm were sustained throughout the project due to the alignment between personal interest and academic work. Regarding academic achievement, the respondent shared that Genius Hour teaching strategy enhanced their understanding of course concepts by allowing for practical application: *“Positively affected my understanding... by helping me apply key concepts in a real and personal way.”* When reflecting on instructional differences, the participant contrasted Genius Hour teaching strategy with traditional teaching methods, praising its creativity, student-centeredness, and flexible structure: *“It emphasized student choice and creativity.”* The respondent appreciated components such as independent research and time management skills. Challenges were minimal; a supportive school environment was highlighted as a facilitating factor: *“I have not faced any problem... school teachers were co-operative.”* Finally, the respondent strongly recommended the broader use of Genius Hour teaching strategy in other courses, suggesting further refinement through clearer topic selection guidance, structured project milestones, and opportunities for collaboration:

“Provide clear guidance... set milestones... encourage collaboration.” This narrative reveals how the Genius Hour teaching strategy not only supported academic understanding but also empowered the learner through autonomy, relevance, and emotional engagement demonstrating its potential as a transformative approach in teacher education.

Respondent 2

Respondent Two emphasized that the Genius Hour teaching strategy (GH) teaching strategy fostered multifaceted engagement, particularly through creative and autonomous learning experiences. In terms of cognitive engagement, the participant reported improvements in problem-solving and creative thinking by approaching challenges from diverse perspectives: *“Taught me to approach problems from different angles...”* The autonomy in choosing their own topic significantly deepened their focus and interest: *“Autonomy to choose a topic that genuinely interested me...”* From a behavioral engagement standpoint, the respondent described themselves as highly participative, self-directed, and collaborative throughout the process: *“Highly engaged... self-directed... collaborative...”* and *“Analyzed project requirements... allocated resources...”* This illustrates an active involvement in planning, executing, and managing the project.

Emotional engagement was equally prominent, with the participant expressing excitement, motivation, and a strong sense of accomplishment: *“Excited and motivated by the freedom...”* and *“Proud of my accomplishments.”* This emotional connection contributed to sustained enthusiasm and a deeper bond with the learning material. Regarding academic achievement, the respondent highlighted meaningful improvements in time management and conceptual understanding, particularly as applied to real-world and professional contexts: *“Enhanced my understanding... addressing practical challenges...”* and *“Improved time management...”* They noted that GH helped them *“solve practical problems... informed professional practice...”* demonstrating the instructional relevance of the approach. Instructionally, GH was described as a departure from conventional methods due to its student-led, curiosity-driven structure: *“Learning driven by curiosity... ownership of process...”* The participant found the greatest benefit in the freedom to select

topics and conduct deep inquiry: *“Choosing my own topic sparked interest...”* Despite these advantages, the respondent acknowledged several challenges, including time constraints, self-motivation, and limited access to necessary resources: *“Faced challenges like time management, self-motivation, and lack of resources...”* Nonetheless, they strongly recommended the wider adoption of GH, noting its power to *“foster autonomy... promote deep learning... and increase engagement.”* This reflection underscores the transformative potential of the Genius Hour teaching strategy in cultivating critical thinking, emotional investment, and academic growth among future educators.

Respondent 3

Respondent Three described the Genius Hour teaching strategy (GH) experience as a catalyst for increased engagement and meaningful learning. Regarding cognitive engagement, the participant emphasized the development of independent thinking, critical analysis, and deep research abilities, noting that GH *“encouraged me to think independently and creatively”* and *“improved critical thinking skills through deep research.”* The freedom to choose a personally relevant topic helped maintain focus and sustained mental investment: *“I was more focused because I chose a topic, I was passionate about.”*

In terms of behavioral engagement, the respondent actively participated both individually and collaboratively. They demonstrated initiative and dedication, frequently investing additional time to enhance the quality of their work: *“I spent extra hours outside class preparing my project.”* This behavior indicated a shift from compliance to ownership of learning tasks. Emotional engagement was also evident, as the respondent reported experiencing a mix of emotional responses ranging from exhaustion to excitement and high motivation. The learner attributed this emotional intensity to the autonomy embedded in the GH process: *“Choosing the topic influenced my motivation and emotional connection.”* Concerning academic achievement, the participant reflected on GH's role in helping to bridge the gap between theoretical knowledge and practical application: *“It enhanced my understanding by applying theoretical concepts practically.”* They also acknowledged improvements in time management and the effective use of learning resources, which

contributed to academic skill development. From an instructional perspective, the participant viewed GH as significantly different from conventional classroom practices. They characterized it as *“a student-centered approach that improved critical thinking and decision-making.”* However, they did report facing challenges, particularly related to time management when balancing multiple academic responsibilities. Despite these difficulties, the respondent strongly recommended wider implementation of GH, citing its effectiveness in promoting *“engagement and creativity.”* This feedback underscores the potential of the Genius Hour teaching strategy to inspire intrinsic motivation, support personalized learning, and enhance the academic experience of prospective teachers.

Respondent 4

Respondent Four’s reflections on the Genius Hour teaching strategy (GH) teaching strategy highlighted significant gains in both engagement and academic growth. In terms of cognitive engagement, the participant stressed the development of independent and creative thinking, stating that GH *“encouraged me to think independently and creatively”* and involved *“deep research and exploring solutions on my own.”* The ability to choose a topic of personal interest appeared to enhance concentration and intrinsic motivation: *“I was more focused because I chose a topic I was passionate about.”* For behavioral engagement, the respondent actively participated in learning activities and collaborated with peers. They demonstrated initiative and perseverance by devoting additional time to project work: *“I spent extra hours outside class preparing my project.”* This indicates a transition from routine task compliance to self-directed learning behavior. Emotional engagement was marked by both positive and taxing emotions. The participant experienced excitement and motivation alongside moments of fatigue, attributing this emotional intensity to the autonomous nature of the learning process: *“Choosing the topic influenced my motivation and emotional involvement.”* With regard to academic achievement, the respondent acknowledged that GH facilitated the practical application of theoretical knowledge: *“It allowed me to apply theoretical concepts in practical context.”* They also reported improvement in essential academic skills, including time management and resource utilization, which are crucial for future professional success. From an instructional standpoint, the participant viewed GH as a clear departure from traditional teacher-led

methods. They appreciated its student-centered approach, which fostered critical thinking, although time management was identified as a recurring challenge. Nevertheless, the respondent strongly endorsed the broader implementation of Genius Hour, citing its role in enhancing both engagement and creativity.

Respondent 5

The participant's reflections on the Genius Hour teaching strategy (GH) experience revealed strong cognitive, behavioral, and emotional engagement, alongside positive academic outcomes and perceptions of the instructional approach. Cognitively, the participant emphasized ownership of learning, critical and creative thinking, and active involvement in problem-solving and research, noting, "*Genius Hour teaching strategy allows us to take ownership of our learning*" and that it "*encourages us to think critically and solve problems creatively.*" Behaviorally, the participant described growth in participation over time and increased time investment, stating, "*When I joined Genius Hour, my level of participation was low, but at the end... it was very high,*" and "*spent more time researching my topic in detail.*" Emotionally, positive feelings such as excitement and motivation were prominent, with comments like "*I felt very excited to work with the Genius Hour teaching strategy project*" and "*Emotional involvement and motivation helped me in selecting my Genius Hour teaching strategy topic.*"

In terms of academic achievement, the participant explained that the project deepened their understanding through critical thinking and prepared them for real-world competencies such as time management and independent work. From an instructional perspective, Genius Hour teaching strategy was perceived as a highly engaging and student-centered alternative to traditional teaching, characterized by autonomy, inquiry-based learning, and a supportive classroom environment that enabled meaningful learning. While challenges related to time management were acknowledged, the participant strongly endorsed the Genius Hour teaching strategy for its ability to foster engagement, promote autonomy, and equip learners with skills relevant to both academic and professional contexts.

Respondent 6

The participant's responses highlighted the multifaceted impact of the Genius Hour teaching strategy (GH) teaching strategy on engagement and academic achievement. Regarding cognitive engagement, the participant reported enhanced problem-solving and critical thinking skills, explaining, "*Genius Hour teaching strategy helped me think better and learn new things... tried new ways of solving problems,*" along with increased independent research and sustained focus driven by personal topic selection. Behavioral engagement was demonstrated through elevated effort and active class participation. The participant described exceeding typical classroom expectations, noting, "*Spent more time on this project than usual... did extra research at home.*" Emotional engagement was characterized by positive emotions, particularly happiness and excitement, fueled by the autonomy to pursue a personally meaningful project. This autonomy fostered a strong emotional connection to learning, as expressed in the comment, "*It was my project... I put my heart into it.*" In terms of academic achievement, the participant perceived a deeper and more practical understanding of course content, specifically stating, "*Genius Hour teaching strategy made me understand my School Management course better.*" Collectively, these reflections suggest that Genius Hour teaching strategy supports comprehensive student engagement and facilitates meaningful, self-directed learning through the integration of autonomy, intrinsic motivation, and practical application of academic knowledge.

Respondent 7

The participant's reflections revealed significant engagement and academic growth through the Genius Hour teaching strategy (GH) project, which focused on parental involvement. In terms of cognitive engagement, the participant described a notable increase in understanding of parent-teacher dynamics, stating, "*It increased my knowledge about how to interact with parents about student learning process,*" which in turn enhanced both interest and motivation: "*Yes, I was interested more and more.*" Behaviorally, the participant demonstrated initiative and effort by organizing parent-teacher meetings (PTMs) during teaching practice, explaining, "*Found more effort than usual in contacting*

students' parents so that they come." Emotional engagement was marked by pride and enjoyment, particularly in the context of real-world interactions: *"I felt very proud during my project working,"* and *"Very interesting to interact with the parents... give them suggestions to improve their learning."* In terms of academic achievement, the Genius Hour teaching strategy project enabled the participant to apply theoretical concepts in a practical school setting, contributing to professional growth: *"Increased my knowledge about how to manage everything at school level,"* and *"My project work will make me perfect when I enter teaching profession in future."* Instructionally, the respondent highlighted the value of student autonomy and real-world application, sharing, *"I implemented my ideas... made me more perfect in interacting with parents during PTM."* These insights emphasize the potential of Genius Hour teaching strategy to foster deep engagement, practical competence, and professional readiness among prospective teachers.

Respondent 8

Participants' responses revealed multifaceted engagement and academic growth through the implementation of the Genius Hour teaching strategy (GH) teaching strategy, particularly within the context of the School Management course. Cognitive engagement was prominently reflected in enhanced critical thinking, independent learning, and deep research skills. One participant explained, "Genius Hour teaching strategy enhanced my thinking abilities", highlighting the impact of autonomy and creative problem-solving. Students reported ownership of learning through the ability to select meaningful topics, which fostered sustained intellectual investment. Behavioral engagement was demonstrated through consistent, self-initiated participation both inside and outside the classroom. Students often dedicated additional time to their projects, stating, "I worked both at home and in class", and reported high levels of peer collaboration and initiative. Emotional engagement emerged as a powerful dimension, with participants expressing feelings of excitement, pride, and motivation. Statements such as *"It felt very good"* and *"I felt motivated that I was doing something special"* revealed strong personal connections to their learning experiences, largely facilitated by the autonomy inherent in GH.

In terms of academic achievement, participants shared that the Genius Hour teaching strategy approach enhanced their understanding of school management concepts especially in areas like health and safety by enabling practical application. One participant shared, “applied things in real life that I had never thought about before”, emphasizing the value of experiential learning in preparing them for future professional roles.

Instructionally, GH was perceived as student-centered and distinct from traditional methods, offering greater flexibility, creativity, and inquiry-based learning. As one participant noted, “Genius Hour teaching strategy was completely different from my previous experience”. However, some students acknowledged challenges such as managing time alongside regular university classes and accessing sufficient resources: “*It was difficult to manage time with university classes*”. Participants strongly advocated for the wider implementation of GH, citing improvements in student interest, critical thinking, and study engagement. One participant emphasized, “It improves students’ thinking skills... brings interest in study”. Suggestions for improvement included structured guidance, mini-lessons on research planning, and increased real-world exposure. Collectively, these findings affirm the Genius Hour’s potential to transform educational experiences through autonomy, meaningful engagement, and personalized learning pathways.

Respondent 9

The implementation of the Genius Hour teaching strategy (GH) teaching strategy significantly enhanced prospective teachers’ engagement and academic achievement in the School Management course. Cognitive engagement emerged strongly through students’ ownership of learning and passion-driven topic selection, which increased focus and intrinsic motivation. One participant reflected, “*Genius Hour teaching strategy allowed me to choose a topic I was genuinely passionate about. This freedom made me excited.*” Behavioral engagement was evident in students’ active and consistent involvement, with participants frequently taking initiative and self-directing their learning processes. As one student explained, “*I took the initiative... each session I came up with ideas,*” highlighting increased effort and motivation driven by personal interest.

Emotional engagement was equally notable, marked by excitement, curiosity, and a deep personal connection to the learning process. Students reported that they did not perceive their projects as routine tasks but as meaningful work: *“Felt a mix of excitement and curiosity.”* In terms of academic achievement, participants shared that GH promoted a deeper understanding and practical application of course concepts. One remarked, *“Positively affected my understanding... by helping me apply key concepts in a real and personal way,”* while another noted, *“Helped me relate academic concepts to real-life and future student situations,”* suggesting enhanced preparedness for professional teaching roles. From an instructional perspective, Genius Hour teaching strategy was described as a student-centered, creative departure from traditional methods. It was valued for emphasizing learner autonomy, creativity, and choice: *“Emphasized student choice and creativity.”* Students highlighted key benefits such as freedom in topic selection, opportunities for independent research, and improved time management skills. Few challenges were reported, and participants appreciated the supportive environment: *“No, I have not faced any problem... school teachers were co-operative.”* Finally, there was a strong recommendation for the wider adoption of Genius Hour teaching strategy in other courses due to its evident impact on engagement, critical thinking, and professional development: *“Yes, I would definitely recommend using Genius Hour.”*

Respondent 10

The Genius Hour teaching strategy notably enhanced prospective teachers' engagement across cognitive, behavioral, and emotional domains. Cognitively, students reported improved creative thinking, problem-solving abilities, and a greater sense of ownership over their learning. This was largely attributed to the autonomy provided in selecting personally meaningful topics, which heightened their focus and curiosity. Behaviorally, participants demonstrated active involvement, consistent participation, collaboration with peers, and a willingness to invest additional time and effort into their projects. Emotionally, students expressed feelings of motivation, excitement, and pride in their achievements. In terms of academic impact, Genius Hour teaching strategy contributed to the development of practical skills such as problem-solving and time management, while also enabling a deeper connection

between theoretical knowledge and real-world applications effectively preparing them for future teaching roles. When compared to traditional teaching methods, Genius Hour teaching strategy was perceived as more student-centered, engaging, and flexible. However, participants acknowledged challenges including time constraints, self-motivation, and limited access to resources. Despite these, the overall experience was positive, and participants strongly recommended the broader implementation of Genius Hour teaching strategy in teacher education programs.

Respondent 11

Participant reported that the Genius Hour teaching strategy approach significantly enhanced their cognitive engagement by fostering critical thinking, independent learning, and deep research skills. The autonomy to select personally meaningful topics was consistently noted as a motivating factor that increased focus and sustained interest. Behaviorally, student demonstrated high levels of active participation both within and beyond classroom settings, often dedicating additional time and effort to ensure the success of their projects. Emotionally, participants expressed positive sentiments such as excitement, confidence, and a strong personal connection to their work, which contributed to a more meaningful learning experience. Academically, the Genius Hour teaching strategy enabled students to deepen their understanding of key course concepts, particularly in school management and safety, by bridging the gap between theoretical knowledge and practical application. Compared to traditional, teacher-centered methods, participants valued the creative, student-centered, and flexible nature of the Genius Hour teaching strategy approach, further supported by the use of multimedia tools such as videos and seminars, as well as encouraging guidance from instructors. Although challenges such as time management and limited access to resources were noted, participants overwhelmingly endorsed the strategy and strongly recommended its wider implementation in teacher education programs.

Respondent 12

Respondent 12 described the Genius Hour teaching strategy experience as highly impactful on their cognitive, behavioral, and emotional engagement. They reported enhanced critical thinking, creativity, and independent learning, fueled by the autonomy to select personally meaningful topics, which increased their focus and motivation. Behaviorally, they actively participated by asking questions, collaborating with peers, and investing extra effort especially when managing staffing arrangements. Emotionally, they felt proud, motivated, and emotionally connected to their project, which further boosted their productivity. Academically, the project deepened their understanding by linking theory to practical scenarios, improving their confidence and problem-solving skills relevant to future professional roles. They viewed Genius Hour teaching strategy as distinctly different from traditional learning due to its student-led, passion-driven approach, although they faced challenges like communication issues, resource limitations, and managing diverse viewpoints. Despite these, they recognized these difficulties as opportunities for growth in leadership and problem-solving. They strongly recommended the strategy's wider use.

Respondent 13

Respondent 13 described the Genius Hour teaching strategy experience as highly impactful across cognitive, behavioral, and emotional domains of engagement. Cognitively, the participant noted improvements in critical thinking, creativity, and independent learning. The freedom to choose a personally meaningful topic enhanced both focus and intrinsic motivation: *"I was more focused because I selected the topic myself and had a deep interest in it."* Behaviourally, the respondent actively engaged by asking questions, collaborating with peers, and putting in additional effort, especially when managing staffing-related arrangements during their project: *"I tried to manage the team and took the responsibility for arrangements, which made me work harder."*

Emotionally, the participant expressed a strong connection to their project, which fostered feelings of pride, motivation, and productivity: *"I felt emotionally attached to my topic... and that gave me energy to work more and do better."* In terms of academic

achievement, they highlighted how the Genius Hour teaching strategy approach deepened their understanding by connecting theory to practice, while simultaneously building confidence and leadership skills: *“It helped me apply theoretical knowledge in real school situations and gave me confidence for my future teaching.”* Instructionally, the student viewed Genius Hour teaching strategy as a distinctive, student-centered alternative to conventional teaching, noting its flexible and passion-driven nature. Despite encountering challenges such as communication barriers, resource constraints, and differing peer perspectives, they acknowledged these as opportunities to strengthen leadership and problem-solving competencies: *“These challenges taught me how to listen, lead, and find middle-ground solutions.”* Ultimately, the respondent strongly recommended wider implementation of the Genius Hour teaching strategy in teacher education due to its capacity to foster deep engagement and prepare students for real-world teaching demands.

Respondent 14

Respondent 14 reflected that the Genius Hour teaching strategy experience had a significant impact on their cognitive engagement by enabling the selection of a topic that resonated personally. The participant noted, *“The Genius Hour teaching strategy experience had a strong impact on my cognitive engagement by allowing me to choose a topic I was genuinely passionate about, which made me more focused, motivated, and emotionally connected to my learning.”* This sense of ownership distinguished Genius Hour teaching strategy from traditional lessons and fostered deeper intellectual investment and motivation. Behaviorally, the participant described a high level of activity and self-direction, stating, *“I was highly active and self-directed, consistently contributing ideas and putting in extra time and effort to ensure quality work because I cared deeply about my project.”* Emotional engagement was marked by excitement and curiosity, with each session being more meaningful due to the autonomy offered in exploring a personally relevant topic. Academically, Genius Hour teaching strategy enhanced understanding and performance in the School Management course by allowing for the practical application of theoretical content. The respondent shared, *“Genius Hour teaching strategy improved my understanding and performance... by allowing me to apply theoretical concepts to real-world contexts,”* emphasizing the strategy’s role in preparing for future teaching scenarios.

Instructionally, Genius Hour teaching strategy stood in contrast to previous methods by fostering creativity, autonomy, and learner-driven inquiry. Key benefits identified included topic selection freedom, independent research opportunities, and strengthened time management skills. The participant did not encounter significant challenges during implementation, attributing this to a cooperative and supportive school environment. Overall, the respondent strongly recommended broader application of the Genius Hour teaching strategy, citing its ability to enhance engagement and support meaningful learning.

Respondent 15

Respondent 15 described the Genius Hour teaching strategy experience as having a distinctly positive impact on both cognitive engagement and academic learning. The respondent reflected, *“The Genius Hour teaching strategy experience positively affected my thinking and learning process, as I was more focused and interested compared to traditional lessons.”* The autonomy to select a personally meaningful topic fostered sustained focus and intrinsic motivation: *“Choosing a topic based on my personal interest helped me stay engaged, and I spent around 5 to 6 hours deeply involved in my project.”*

Emotionally, the participant reported consistent excitement and motivation throughout the process, attributing this emotional connection to the freedom of topic selection: *“The freedom to select my own topic increased my emotional connection and made the experience more meaningful.”* Behaviorally, the respondent demonstrated high levels of participation and effort, emphasizing, *“I actively participated in the sessions and dedicated extra time and effort to complete my project because I was genuinely interested.”* “From an academic perspective, Genius Hour teaching strategy was noted to significantly improve understanding and performance in the School Management course through practical application of course concepts: *“Genius Hour teaching strategy significantly improved my understanding... by giving me opportunities to apply concepts practically.”* The respondent further highlighted gains in essential skills such as problem-solving and project planning, and expressed that the experience helped bridge academic learning with future professional responsibilities: *“This experience also helped me connect academic*

content to real-life and future professional situations.” Instructionally, Genius Hour teaching strategy was perceived as a substantial departure from traditional teaching methods. The respondent noted the strategy’s strength in promoting independent work and student choice: *“Genius Hour teaching strategy was different from traditional methods by allowing students to choose their own topics and work independently, which increased my interest and improved my thinking abilities.”* These reflections reinforce the value of student-centered, inquiry-based approaches in teacher education settings.