International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(REVIEW ARTICLE)

Check for updates

Holy contributing to the delinquency of minors! using batman '66 villains to inspire problem-based learning

Timothy Sean Hinchman *

Department of Elementary and Special Education, Georgia Southern University, Georgia, US State.

International Journal of Science and Research Archive, 2024, 13(02), 3361-3375

Publication history: Received on 13 November 2024; revised on 24 December 2024; accepted on 26 December 2024

Article DOI: https://doi.org/10.30574/ijsra.2024.13.2.2596

Abstract

Bam! Pow! Kaboom! In this practitioner paper, educators will discover how to craft a captivating STEAM activity using Gotham's Rogue Gallery from the 1960s *Batman* TV show. By tapping into the pretentious personalities and psychological neuroses of these fiendish foes, this article will outline how to devise a dastardly deed designed to deceive the dynamic duo. I will present a playful approach where villains (and their henchmen) are the stars in concocting cunning capers utilizing math, science, and engineering, all while sprinkling in their signature artistic flair. This paper explores how a villain's twisted talents can translate into a skillful STEAM museum heist. From calculating the number of guards needed to secure the priceless Etruscan Snoods to designing elaborate heist gadgets, a framework will be provided to teachers and students to engage in structuring science-packed schemes. But fear not—these bad guys love to leave clues, guiding the Caped Crusaders toward a concluding capture, because as The Penguin says, "What's the point of committing the perfect crime if nobody knows it was you?". This paper will showcase how to use Gotham City's colorful Rogue's Gallery to inspire problem-solving, critical thinking, and creativity in the classroom, making learning villainous and victorious.

Keywords*:* Batman; Problem-Based Learning; Creativity; STEAM Education; Secondary Education

1. Introduction

1.1. The Puzzles Are Coming

This pedagogical caper takes learning beyond curriculum maps and into the realm of possibilities. Centered on the camp of the 1966-1968 *Batman* TV series, this problem-based learning (PBL) activity invites students to embody Gotham's most nefarious villains, devising elaborate heists that demand creative thinking, interdisciplinary problem-solving, and a flair for the dramatic. By stepping into the shoes of characters like The Riddler or Catwoman, students engage in a Batman-themed STEAM (science, technology, engineering, arts, and mathematics) experience. They will design gadgets, solve the art gallery problem, and create detailed narratives integrating scientific methods, engineering principles, and artistic creativity. Through this activity, learners not only navigate complex challenges but also gain a fresh perspective on the practical and relevant applications of STEAM education in the real world.

1.2. Walk the Straight and Narrow

High accountability in the era of content standards has diminished students' capacity to think creatively and generate novel task solutions (Ketsman, 2013; Kim, 2011; Martz et al., 2017; Weinstein et al., 2014). Individuals will develop into their full potential with a classroom learning environment designed to foster their progression into adulthood (Rogers, 1959). This classroom learning environment expedites an individual's journey to thought independence, self-approval, and acceptance, ultimately leading to "unpredictable creativity" (Rogers, 1973, p. 12). Instructional personnel and the

* Timothy Sean Hinchman

overall educational system are vital to a student's odyssey to creativity enhancement during normal school operations (Noddings, 2013; Olivant, 2015). The National Advisory Committee on Creative and Cultural Education (NACCCE, 1999) and the Partnership for 21st Century Learning (P21, 2015) publicly support educational reform that cultivates skills related to creative thinking. Teachers' behavior and receptiveness to novelty are essential in encouraging and maturing creativity in the classroom (Myers & Torrance,1961). This relationship between students and their teachers impacts novelty and the creation of unique solution pathways. Cultivating novel and unique task solutions can only be achieved through a supportive field that advocates creative thought and action.

Narrowing the curriculum to meet federal mandates precipitated an alteration in the teacher's instructional strategies from high variability to low variability (Frawley, 2014; Martin, 2016). The acquisition of skills related to the generation of novel and unique solutions have declined due to test-teaching practices (Frawley, 2014; Jakee & Keller, 2017; Kim, 2011; Noddings, 2013; Olivant, 2015;), while the workforce needs creative and innovative talent is increasing (Corgnet et al., 2016). This process of curriculum narrowing to meet content standards has influenced more than the teacher's instructional strategies (Ashadi & Rice, 2017; Zohar & Agmon, 2018), it also reduced exploratory practices to only focus on the knowledge and skills necessary to pass high-stakes tests (Frawley, 2014; Martin, 2016). Curriculum narrowing provides students with a narrow set of skills that has minimal application in the real world (Martin, 2016).

Creativity does not consist of a single trait, described as an idea, task-solution or a constructed product that compromises the following: (1) serves a purpose; (2) novel and unique; (3) definitive and valuable; and (4) contextually appropriate consistent with a larger domain (Amabile, 1996; Guilford, 1950; Johnson-Laird, 2002). The literature review of creativity has compartmentalized creativity into the "four P's of creativity": product, process, person, and place (Rhodes, 1961; Runco, 2004). A creative individual can (1) resolve a problem uniquely, (2) create a new and unusual construct or solution pathway, and (3) reshape the problem space to a noticeable degree (Feldman et al., 1994). Encouraging the creation of new ideas and products requires stressing from the field (Nakamura & Csikszentmihalyi, 2001). While there is broad agreement that the creative process is essential in developing a creative product, there needs to be more consensus over whether or not it can be accurately observed and measured (Amabile, 1996; Henriksen et al., 2015).

1.3. It's How You Play the Game

Creativity, in an education setting, focuses on the reciprocal action between the classroom as the field and the student's ability to construct and produce creative task solutions. Creativity's consensual interpretation necessitates that nonpartisan and experienced appraisers agree that a task resolution is creative and on its creative magnitude (Amabile, 1996; Feldman et al., 1994; Henriksen et al., 2015). The 'field' in this context refers to the classroom environment, including the teacher, peers, and resources, that influences and validates the creativity of the student's work. Classroom teachers can assess a student's creativity by acting as the field. This classroom field has critical value in developing novel products and solution pathways through persistent product evaluation (Nakamura & Csikszentmihalyi, 2001). The classroom teacher, acting as a field expert, monitors the creation of creative products through time-sensitive encouragement and discouragement from start to finish (Nakamura & Csikszentmihalyi, 2001). Classroom teachers motivate students to solve tasks in unique and novel ways (Beghetto & Kaufman, 2014).

Cultivating creativity requires a synthesis between intrinsic and extrinsic motivation in all organizational systems (Amabile, 1997), including in the educational setting. Intrinsic and extrinsic motivation synergy catalyzes creative task solutions' development through process validation between creative individuals and a gatekeeper from the existing field (Feldman et al., 1994; Amabile, 1997; Amabile et al., 2005). The field agent encourages an individual to explore multiple solution pathways (Amabile et al., 2005). Individuals react positively when the field perceives their work as novel and unique (Amabile et al., 2005). A supportive classroom environment provides the fundamental framework and assistance for effective problem-solving (Gute et al., 2008).

The organization system in the classroom facilitates the development of novel, unique, and appropriate student products and solution pathways (Amabile et al., 2005; Beghetto & Kaufman, 2014; Gute et al., 2008). As educators and policymakers, you play a crucial role in ensuring a balance between practice and training in the educational curriculum. The classroom field expedites problem space identification through boundary recognition and providing a contextual understanding of the prescribed task (Amabile, 1997). Information and resource gathering is only completed with field assistance in producing creative products (Amabile, 1997). Classroom teachers implement necessary scaffolding-type questions (Ninio & Bruner, 1978) that facilitate an increase in the number of new questions, which leads to the initiation of new avenues (Amabile, 1997). The classroom teachers judge the student's new ideas, task solutions, and constructs and will also validate their products and solutions as novel and unique (Amabile, 1997). Creativity cultivation requires

a delicate balance between practice and training for classroom students to transcend their creative pursuits and passions. Teachers will need the tools necessary to both teach creatively and teach for creativity.

1.4. The Joker Goes to School

The purpose of the curriculum is to provide teachers with a toolkit for building, utilizing, and exchanging expertise in any specified field (Ketsman, 2013). The curriculum planning process identifies information that individuals should learn, who the students are, and the instructional strategies used in this process (Upton & Bernstein, 2011). A curriculum-devised "toolkit" develops a context for the students through meaningful experience and establishing effective habits that can be used in real-world situations (Mitchell & Randolph, 2001). The Common Core State Standards (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) and 21st Century Skills (P21) assimilate cognitive learning and skill acquisition into a curriculum designed to deepen student understanding and assist in deciphering problems and situations in the real world (Alismail & McGuire, 2015). Imagination, fantasy, originality, and creativity are only viewed as extracurricular skills in the modern classroom, and time and space to improve these skills have been thoroughly actualized in classroom pedagogy and methodology (Kleiman, 2008).

A standardized curriculum prevents an authentic education by disconnecting the prescribed content from that of the natural world (Noddings, 2013). Teachers view creativity as an essential component of the educational process; however, preparation for standardized testing and the associated stress imposed by student performance prohibit teachers from creative teaching practices (Olivant, 2015). The standardized educational curriculum is economical as it provides the same curriculum to all students, ignoring student diversity, varying interests, and individual goals. This curriculum type forces all students into college preparatory courses while reducing student opportunities to pursue their interests. A standardized curriculum promotes ranking and labeling students with ease and deprives their students of creative endeavors (Noddings, 2013). Standardization diminishes teacher's autonomy and devalues their professionalism through a narrow scope that prohibits them from being active in such curriculum's development and reform processes (Olivant, 2015).

Teachers know current curriculum policies erode their autonomy and professionalism (Olivant, 2015). High accountability testing is counter-intuitive to the learning process and reduces teacher's responsibility for meeting the diverse needs of their students (Olivant, 2015). Standardized curriculum policies encourage teachers to dedicate valuable class time to test preparation (Ashadi & Rice, 2016; Erskine, 2014; Frawley, 2014; Martin, 2016 Olivant, 2015; Polesel et al., 2014;). These "drill and kill" exercises neglect the process-based thinking skills and disengage students from learning (Frawley, 2014; Martin, 2016; Olivant, 2015). District-wide pacing calendars and charts reduce the classroom teacher's ability for in-depth content exploration while failing to provide time to address individual student needs and impeding the maturation of their highest-performing students. Standardized curriculum in the era of content standards disconnects teachers from the teaching process and diminishes their capacity to teach creatively and to teach for creativity (Olivant, 2015).

1.5. Shoot a Crooked Arrow

A classroom that advocates creativity is symbolized by the reciprocal admiration of teachers and students (Beghetto & Kaufman, 2013; Webb & Rule, 2013). This learning environment allows discussion and establishes a co-constructive method for creative acts (Beghetto & Kaufman, 2013; Pang, 2015; Russo, 2013; Webb & Rule, 2013). When teachers control the curriculum and promote originality and risk-taking, students generate more creative solutions and products. The progressive relationship between teacher, student, and curriculum impacts knowledge acquisition and creative performance (Webb & Rule, 2013).

The National Advisory Committee on Creative and Cultural Education (NACCCE) (1999) differentiates teaching for creativity and teaching creatively. Teaching creatively is teachers practice "imaginative approaches to make learning more interesting, exciting and effective" (p. 102). Teaching for creativity compels a classroom instructor to teach creatively, which includes the following conventions: (a) encouraging a belief in one's creative potential, (b) guiding students to maximize and identify their creative strengths, and (c) fostering individual creative development during the traditional school day (NACCCE, 1999). The practical applications include the following: (1) inquiry-based constructivist activities; (2) activities that engage a student's imagination; (3) student evaluation of their ideas and products without negativity; (4) encourage students to express themselves and take risks; (5) provide structure and support throughout the creative process; (6) allot time for free play in the classroom; and (7) model and promote the novel and unique task solutions (NACCCE, 1999). Creating an educational and curricular policy on teaching for creativity improves students in preparation for future success (Grinell & Rabin, 2013; Jakee & Keller, 2017; Noddings, 2013; Morgan, 2016; Olivant, 2015: Polson, 2017; Sánchez & Patel, 2017; Weinstein et al, 2014; Zohar & Agmon, 2018).

This official policy on teaching for creativity requires a formal definition of creativity and the implementation of content standards that structure creativity education (Hui & Lau, 2010).

Creativity, as an exclusive term, is used twice as often in arts/enrichment programming than in the traditional subject matter of reading, writing, and arithmetic (Wyse & Ferrari, 2015). The use of creativity as an exclusive term was statistically significantly lower in the social sciences, absent in English-language arts, void in the mathematics and science thinking skills matrix, and rarely stated explicitly in the elementary school curriculum (Wyse & Ferrari, 2015). College and university curriculum emphasizes creativity's importance and students' creative skills usage due to economic demands that are in constant flux (Rampersad & Patel, 2014; Schmidt et al., 2013). Educational leaders in entrepreneur programs rate creativity as very important, and many have created separate courses in their degree plans that focus on creativity skills to meet economic demands (Schmidt et al., 2013). Teachers need time and space that provide opportunities to understand the creative process and practice creativity simultaneously with learning educational pedagogical practices and content methodologies (Noddings, 2013; Olivant, 2015).

A caring value system that appreciates novelty, hands-on experiential activities and the use of flexible lesson structures is necessary to teach creatively (Akcanca & Ozseveg, 2017; Beghetto & Kaufman, 2014; Myers & Torrance, 1961; Noddings, 2013). The cultivation of creativity must include both the recognition of the creative process and the content knowledge that allows for creative expression (Ketsman, 2013; Noddings, 2013; Pang, 2015; Tan, 2015; Tom, 2015; Webb & Rule, 2013). Active encouragement, co-participative pedagogy, and transparency through the educational process assist in teaching creatively (Jeffrey & Craft, 2004). Classroom environments that respect and inspire their students (1) to ask regular questions, (2) to identify and explore problems, and (3) engage their students to defend choices demonstrate an increase in creativity compared to environments that do not (Jeffrey & Craft, 2004). Classroom environments that ensure student ownership of knowledge acquisition with the reassurance and adaptability from the classroom teacher increase their student's creative development (Jeffrey & Craft, 2004; Russo, 2013). A student-centered learning environment allows students to be the curriculum co-creators and increase their critical and creative thinking skills and abilities to solve future real-world problems (Beghetto & Kaufman, 2014; Jeffrey & Craft, 2004). The relationship between teachers and their students is essential in developing strategies to increase creative exploration and products. Problem-based learning can be utilized in STEM education to foster critical and creative thinking skills (Birgili, 2015; Hanif et al., 2019).

2. The Purr-fect Crime

The Heinous Hall Heist is an interdisciplinary problem-based learning STEAM activity that combines science, technology, engineering, mathematics, critical/creative thinking, and a little deviousness to assume the role of Batman and Robin's counterparts. Figure 2 aligns this assignment with the project approach (Katz et al., 2014) to encourage curiosity and encourage authentic learning. Students will research the characters and actors that plagued Adam West's Gotham City and plan a harmless heist using their dramatic style, tools, gadgets, and psychological flair. Students will first design a 3-D' tool of the trade,' design a heist strategy aligned with their chosen character's style, and solve the infamous art gallery math problem, calculating the number of guards needed to secure the museum. Students will partner up and, in 1960s television fashion, provide a detailed narrative outlining all aspects of the heist. This narrative presentation is a chance for students to unleash their creativity and storytelling skills, explaining the heist in an expository narrative that covers what, when, why, and how.

The first task involves students researching the colorful characters that disrupt the dynamic duo (Appendix A). Research can be conducted by watching video clips available online or on broadcast television or by introducing learners to the Batman '66 comic book series that began in 2013, running sporadically for the past decade. Students should be encouraged to choose a relatable character as the 1960s cast provides a rich tapestry of diverse ethnic, racial, physical, and psychological diversity. After choosing their new persona, students will begin designing their 'tool of the trade' inspired by the tools used in TV shows and comic books. Tinkercad and Sketchup are sample design programs that allow students to begin their 3-D design studies. The tools will then be 3-D printed for experimental testing. Students will follow science and engineering models to test their 3-D printed devices, providing them with the real-work opportunity to apply their knowledge and skills.

Students will begin the heist planning phase once their device has adequately been field tested. They will partner with another member of Gotham's underworld to devise a detailed heist strategy that aligns with their character's persona. For example, Catwoman's crimes always include a feline factor, like stealing a rare jeweled cat statue, and the Riddler will leave cryptic clues before committing crimes. The detailed plan utilizes an AI-generated floor plan of the Gotham Museum of Antiquities (Figure 1), where each persona must address the entrance and escape route to their respective lairs- ensuring that the heist is harmless and nobody is injured. The group will analyze the Gotham Museum of

Antiquities' floor plan to determine the minimum number of guards required to secure the space employing the art-gallery math problem (Petruzelli, 2022). Groups will divide the museum's floor plan into triangles and identify the vertices where guards would be stationed to maximize surveillance, creating a comprehensive depiction explaining the guard placement.

Figure 1 Museum floor plan (Microsoft Co-Pilot, 2024)

The next task challenges groups to design a Rube Goldberg machine inspired by the cliffhangers at the end of each episode and comic panel. The groups will use these iconic traps as the inspiration to explore engineering principles and simple machines. Each trap will incorporate at least three simple machines in the design, aligning it with the aesthetic of the villain's persona. The trap must include at least three simple machines (e.g., levers, pulleys, inclined planes) in their design, aligning the trap's aesthetic and mechanics with the villain's persona. To capture the Caped Crusaders, student groups will sketch and label a blueprint illustrating how each step logically progresses in duping the dynamic duo. The problem-based STEAM activity culminates with an interactive presentation. Students will don their prospective thematic costumes and showcase their heist narrative, present their mathematical findings, demonstrate their 3-D printed device, explain their Rube Goldberg trap, and reflect on the knowledge gained from this thematic problem-based learning experience.

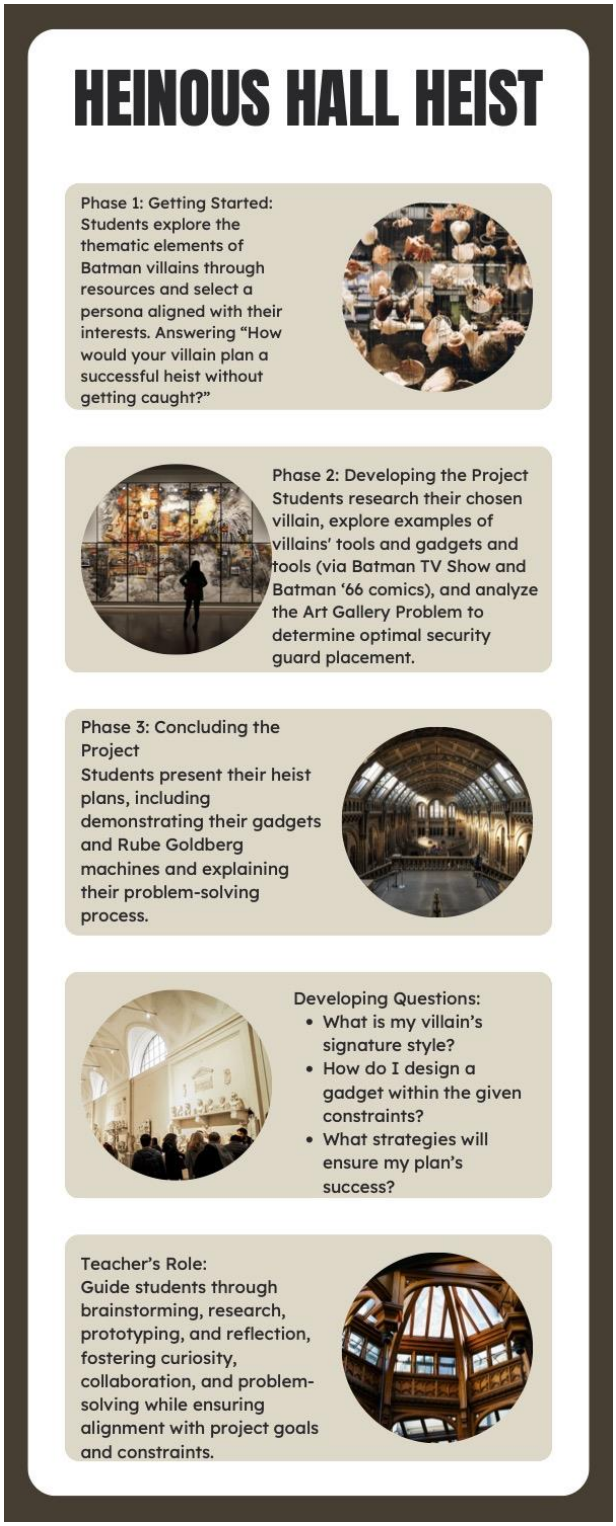

Figure 2 Heinous Hall Heist alignment with project approach (Katz et al., 2014).

2.1. Hi Diddle Riddle

Problem-based learning (PBL) is a student-centered instructional practice where learners develop critical knowledge and skills by solving complex, real-world problems. Students are presented with real-world scenarios in which they identify the central issue, determine the skills and resources needed to investigate it, and propose potential solutions (Duch et al., 2001). PBL emphasizes practicality, directly relating instructional activities to real-world scenarios and situations. Dolmans et al. (2005) established four basic tenets for effective PBL: constructive, self-directed, collaborative, and contextual learning. PBL enriches the educational experience, promoting the importance of teamwork

as learners construct new knowledge and assume responsibility for their learning while working in small groups to solve real-world problems (Dolmans et al., 2005; Duch et al., 2001).

Discovery is at the center of PBL, where learners achieve content proficiency through active involvement in the problem-solving process (Albanese & Mitchell, 1993). Open-ended tasks promote intrinsic motivation, improve learning quality, increase critical thinking, and empower life-long learning (Albanese & Mitchell, 1993; Ghani et al., 2021; Khoiriyah et al., 2015). The discovery process requires learners to think creatively (Dawilai et al., 2018), apply their newly gained knowledge (Ghani et al., 2021), conduct meaningful work (Arana-Arexolaleiba & Zubizarreta, 2015), build upon the expertise of others (Asmi et al., 2019), and effectively communicate their findings (Rakhudu, 2015), thus instilling the value of continuous education in them.

PBL allows teachers to integrate research and education by developing scientific habits. Helfand (2016) emphasizes teaching learners specific habits designed to provide them with tools to understand and apply scientific principles to combat misinformation. Scientific literacy is critical for students to make informed decisions when surrounded by misinformation. Learners must develop specific habits (cognitive practices and attitudes) to navigate the modern information landscape. These habits stress using evidence from scientific investigations and experimentation (predicting, testing, and reasoning). Learning environments will need to foster curiosity and encourage skepticism throughout the process. Scientific habits promote open-mindedness by relying on evidence and logic instead of anecdotal feelings or opinions and focusing on statistical analysis, pattern recognition, and calculations to validate conclusions. Future decision-making becomes more critical by reducing complete problems into their components, making future decisions based on valid arguments supported by evidence, and identifying bias and logical fallacies. These habits will also translate into more effective communication, where learners can transmit their ideas and conclusions into easily consumed methodologies (clear writing, visual representations, and constructive dialogue).

Problem-based learning has as its organizing center the ill-structured problem, which is messy and complex, requires inquiry, information gathering, and reflection, is ever-evolving, and has no one simple/fixed solution (Gallagher, 2023). Simon (1973) explored how the general problem solver deals with problems identified as either well-structured or ill-structured. The well-structured problem includes (1) definite criterion; (2) consists of a minimum of one problem space; (3) achievable and sequential stages; (4) noticeable transition phases; and (5) a new acquisition of knowledge constructed by problem resolution (Simon, 1973). A solvable problem contains at least one pathway that establishes process states, is altered in this procedure, and has transitional connections at all stages in the problem space (Simon, 1973). All problems encountered by individuals initially start as ill-structured problems but are then categorized through the resolution process as well-structured problems. A strategic division process within the problem space allows the individual problem-solver to manipulate the problem effort to develop novel, unique products and solution pathways. A problem space with total and complete freedom without constraints is detrimental to the problem-solving process. The overwhelming number of possibilities obscures the appropriate solution pathways of the problem solver, which hinders task resolution (Simon, 1973). Individuals reconstruct constraints within the problem space to alter the initial ill-structured problem into a more feasible problem that is now well-structured. Two complementary, interrelated processes are required for PBL: effective curriculum design and facilitation (Gallagher, 2023). Teachers create an ill-structured problem that aligns with state standards and specific learning objectives that reflect problematic situations. They develop templates that guide learning and ensure students access resources. While the students transition from an ill-structured problem to a well-structured one, the teacher models, coaches, and incrementally reduces support to ensure that learning is student-centered (Gallagher, 2023).

2.2. The Cat and the Fiddle

A thematic approach to teaching, as facilitated by educators, involves presenting content through unified motifs instead of singular, isolated topics (Barnes, 1987). Teaching thematically, educators play a crucial role in improving student academic engagement, performance, and critical thinking skills (Syahrul et al., 2023). Research findings indicate that when teachers utilize interdisciplinary thematic teaching, they contribute significantly to developing the 4C skills: critical thinking, communication, collaboration, and creativity (Ye & Xu, 2023). These 4C skills (Partnership for 21st Century Skills, 2009) are critical for preparing students for success in the 21st century (Soulé & Warrick, 2015).

Critical thinking flourishes when students are encouraged to ask questions and consistently analyze and critique ideas (Mufarrid et al., 2023; Rusdi et al., 2023; Ye & Xu, 2023). Creativity is nurtured through exploring open-ended problems and crafting innovative solutions (Asrizal et al., 2022; Ye & Xu, 2023). Communication skills are notably enhanced through dynamic discussions in both small and large group settings (Asrizal et al., 2022; Mufarrid et al., 2023; Ye & Xu, 2023), while collaboration is promoted as students engage in cooperative tasks, working together to achieve shared goals (Asrizal et al., 2022; Ye & Xu, 2023).

2.3. Batman Makes the Scenes

Popular culture, with its unique ability to demystify complex concepts, make the abstract tangible, engage diverse students, and enhance critical thinking, is a potent tool for educators. Teachers can use well-known characters and television shows to make learning more enjoyable and relatable. Characters from popular culture, especially those from comic books, can bridge students' experiences and academic content (Krusemark, 2016; Spector-Mersel, 2010). Popular culture icons like Batman and his cast of supporting characters are utilized to teach leadership (Krusemark, 2016) and communication theory (Hammonds & Anderson-Lain, 2018) at the university level. Popular cultural characters from comic books can assist educators in connecting literature to the personal human experience in a complex society (Cassidy & Kehler, 2018). The Batman universe allows teachers and students to critically discuss complex social issues and promote reflective thinking skills (Hammonds & Anderson-Lain, 2018).

The episodic structure of comic books (and television series spawned from the source material) allows for continuous character development and rebirth. The comic book framework allows consumers to explore new dimensions of Batman characters' personalities and interpersonal relationships in digestible narratives that build over time. This serialization enables the writers to develop complex characters- continually introducing new villains responding to modern moral dilemmas. Batman and his Rogue Gallery are constantly developing, keeping them fresh and relevant, enabling the consumer to explore the complex facets of their personalities (Weldon, 2017). The Batman universe can shed light on the relationship between teachers and their students, providing opportunities to engage in discussions about the complex world, empowering young learners to become independent thinkers, provoke students into self-learning through shared governance (Corson et al., 2020).

A child's initial literary interaction is often rooted in the popular culture industry, creating new and fascinating worlds. These fictional worlds, filled with immersive storylines, can spark a child's imagination and, through repeated exposure, shape their interactions with literature. This intimacy supports early literacy skills by providing early exposure to character development and storytelling techniques (Hilton, 2012). Introducing young learners to characters from the Batman universe not only engages them but also promotes critical literacy. Children repeat and recite familiar tales, where they learn the language and structural patterns and use narratives to develop imaginative play, helping them connect to real-world scenarios. Students can better understand the world by analyzing the characters and their stories, enhancing their critical thinking skills. Incorporating popular culture into classrooms can increase disenfranchised populations in the literacy curriculum (Marsh, 1999).

2.4. When the Rat's Away the Mice Will Play

Thematic PBL activities provide challenges that detract from their everyday usage. The main challenge involves aligning the activities with the state content standards. PBL effectiveness is reduced when the activities are not in alignment with the curriculum standards and may result further conceptual misunderstandings (Chian et al., 2019). Since PBL is student-centered and fosters self-directed learning, aligning the curriculum becomes a critical design element. This alignment bridges the gap between conceptual knowledge and real-world application while nurturing inquiry, reflective habits, and a foundation for lifelong learning (Bridges, 1992; Bridges et al., 2016). Although this assignment could be utilized in elementary school, some might not be cognitive equipped to deal with moral ambiguity portrayed by the villains, such as the Joker (Liu, 2022). Imaginative performances can be utilized as educational tools to reshape societal structure, through critical examination of norms and power dynamics (Schechner, 2003). With that in mind, this PBL activity was aligned to Georgia, USA middle and high school educational standards (Georgia Department of Education, 2021*)* as shown in Table 1:

Table 1 Heinous Hall Heist GSE Alignment

Content Area	GSE	Alignment
Science	S8P3, SPS5, SPS7, SPS8, SP1, SP2, SP3, SP4, SP5, SP6, SC3, SC4, SC6	Students design gadgets, tools, and traps incorporating physics and engineering principles. Students apply principles of force and motion in their trap designs, using simple machines to demonstrate concepts.
Technology	CSS.IDC.6-8.18, CSS.IDC.6-8.19, CSS.CT.6-8.30, CSS.CC.6-8.42	Students design innovative gadgets, tools and traps inspired by Batman '66, utilizing a design-thinking approach to solve problems. Students logically sequence steps in their Rube Goldberg machines, ensuring computational accuracy in execution.

Arts	TA8.CR.2, TA8.PR.1, VA8.CR.3, VA8.PR.1, VA8.CN.3	Students role-play as villains, crafting creative narratives that contextualize their designs within the heist. Students integrate visual design elements into their traps to align with their villain's theme and aesthetic.
Mathematics	MGSE7.G2, MGSE8.GSR.8.2, MGSE9-12.G.CO.9	Students will use geometric reasoning (theorems about polygons and triangulation) and apply angle properties to solve the Art Gallery Problem by determining optimal guard placement in a polygonal space.
Sociology	SSSocC1, SSSocC2, SSSocC3, SSSocSC2, SSSocSC3, SSSocIC1	Students analyze how the villains' cultural traits and backgrounds influence their thematic traps and decision-making. Students explore how fictional institutions (e.g., law enforcement, Gotham's elite) influence the actions of villains.
Psychology	SSPVB3, SSPSP1	Students examine the psychological motivations behind their villain's behaviors and how emotions influence their heist design. Students analyze how group dynamics and collaboration among "henchmen" influence the success of the heist and trap design.

Source: Georgia Department of Education, 2021

3. Fine Finny Fiends

This paper explored the potential of integrating Gotham City's Rogue Gallery from the 1960s *Batman* TV series into an engaging and meaningful learning activity. Students engage in a multifaceted problem-based learning activity by adopting the persona of Batman's most iconic villains. The *Heinous Hall Heist* activity demonstrates how popular culture characters can be utilized to create immersive and meaningful educational experiences, infusing the learning process with a sense of fun and enjoyment. Students encounter hands-on and minds-on STEAM application concepts by designing 3-D gadgets, solving intricate geometric mathematical problems, and constructing a Rube Goldberg machine through the lens of the rich narratives of Gotham's outcasts.

Creativity is a vital educational component often undervalued in classroom environments focused on strictly aligning curriculum mapping with standardized testing and content standards. This thematic approach provides teachers and educators a pathway to foster an independent mindset, innovation, and the capacity to produce novel solutions. Teachers can encourage complete themes in a supportive environment by placing learning in a narrative/story-driven context. These stories unite all humans and should be used to provide context for students when learning new material. Frye (1971) argues that literature can only be taught through a critical lens, one being mythical.

Myths and the journey of all humans represent all literature's collective unconsciousness (Alexander, 1979). Myths serve the moral order and help the individual engage with the written word by forcing the reader to use their imagination (Alexander, 1979). Mythic criticism explores literature in a social and moral interdisciplinary manner, which provides context to the reader (Alexander, 1979). Mythic criticism allows instructional designers to incorporate popular culture (Meyer, 2003; Terrrill, 1999), which can expand the curriculum and increase student engagement (Alexander, 1979). Education becomes a quest for self-discovery, in which the student is the protagonist. Students have control over acquiring knowledge, which increases their intrinsic motivation to learn and construct new knowledge (Holmes, 2007).

Using popular culture characters, such as those from the Batman universe, creates an additional layer of accessibility and relevance to learning, assisting students in relating to abstract concepts and making learning personally meaningful. Mythic criticism provides an opportunity to utilize popular culture stories through a critical lens, which can expand the curriculum (Meyer, 2003; Terrill, 1999); students can be active learners and analyze themselves through the characters they admire the most. Learning can become an active journey through the material. Mythic criticism and the Hero's Journey (Campbell, 1949) are similar to constructivism in that instruction is a guided process where the learner acquires knowledge naturally and constructs understanding organically. This playful activity approach connects emotionally and intellectually, making education a memorable experience. Classrooms have the potential to inspire enthusiasm, curiosity, and a passion for learning, equipping students with both the skills and the mindset to prosper in our ever-changing world by embracing the camp established by the 1960s Gotham City's Rogue Gallery.

4. Conclusion

Integrating popular culture into education provides a personal approach to engaging students, making abstract concepts tangible and personally meaningful to both the teacher and their students. Using the colorful characters and plots from the 1960s *Batman* TV series, educators can craft immersive, problem-based learning experiences that merge critical thinking, creativity, and cross-curricular exploration. Activities like the *Heinous Hall Heist* foster curiosity and innovation, cultivating 21st-century skills. This activity balances the content standards with academic imaginative freedom.

Thematic problem-based activities make learning fun using personal and meaningful narratives, empowering both active learning and teaching. This paper examined the mythic qualities of the villains from the 1960s *Batman* TV series, linking their absurd and preposterous plans to real-world applications and highlighting the significance of thematic STEAM learning activities. Educators and curriculum designers can adopt this approach by integrating modern and more relevant pop culture figures and narratives, promoting inclusivity and cultural relevance. This instructional approach has the potential to inspire experienced teachers to craft complex and consequential learning experiences steeped with a trace of theatricality. The key takeaway is that heroic learning opportunities can emerge from even the most nefarious sources.

References

[1] Akcanca, N., & Cerrah Ozsevgec, L. (2018). Effect of Activities Prepared by Different Teaching Techniques on Scientific Creativity Levels of Prospective Pre-School Teachers. European Journal Of Educational Research, 7(1), 71-86.

[2] Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. *Academic medicine*, *68*(1), 52-81.

[3] Alexander, J. M. (1979). Myth as an Organizing Principle for a Literary Curriculum. CEA Critic, 41(3), 32-38.

[4] Alismail, H. A., & McGuire, P. (2015). 21st Century Standards and Curriculum: Current Research and Practice. Journal Of Education And Practice, 6(6), 150-154Amabile, T. M. (1996). Creativity in context: update to The social psychology of creativity. Boulder, CO: Westview Press.

[5] Amabile, T. M. (1997). Entrepreneurial creativity through Motivational synergy. The Journal of Creative Behavior, 31(1), 18–26.

[6] Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. Administrative Science Quarterly, 50(3), 367–403.

[7] Arana-Arexolaleiba, N., & Zubizarreta, M. I. (2015). The impact of PBL learning environment and supervision of engineering faculty of Mondragon University in the student learning approach. *Global research community: Collaboration and developments*, 479.

[8] Ashadi, A., & Rice, S. (2016). High Stakes Testing and Teacher Access to Professional Opportunities: Lessons from Indonesia. Journal Of Education Policy, 31(6), 727-741.

[9] Asrizal, Y., Yurnetti, & Usman, E. A. (2022). *ICT thematic science teaching material with 5E learning cycle model to develop students' 21st-century skills*. Journal Pendidikan IPA Indonesia, 11(1), 61-72. https://doi.org/10.15294/jpii.v11i1.33764

[10] Asmi, S. O., Wonorahardjo, S., & Widarti, H. R. (2019). The application of problem-based learning assisted by blended learning in atomic spectroscopy material on cognitive learning outcomes and students' self-system based on Marzano taxonomy. *European Journal of Open Education and E-Learning Studies.*

[11] Barnes, H. L. (1987). The conceptual basis for thematic teacher education programs. *Journal of Teacher Education*, *38*(4), 13-18.

[12] Beghetto, R. A., & Kaufman, J. C. (2014). Classroom contexts for creativity. High Ability Studies, 25(1), 53-69.

[13] Birgili, B. (2015). Creative and critical thinking skills in problem-based learning environments. *Journal of Gifted education and creativity*, *2*(2), 71-80.

[14] Bridges, E. M. (1992). Problem-Based learning for Administrators. *ERIC Clearinghouse on Educational Management/University of Oregon*

[15] Bridges, S., Yiu, C. K., & Botelho, M. G. (2016). Design considerations for an integrated, problem-based curriculum. *Medical Science Educator*, *26*(3), 365-373.

[16] Campbell, J. (1949). The hero with a thousand faces. London: Fontana.

[17] Cassidy, J., & Kehler, M. (2018). *"Holy gendered resource, Batman!": Examining the broader application of comics and superhero fiction beyond their restrictive relationship with boys*. In B. Guzzetti, T. Bean, & J. Dunkerly (Eds.), Literacies, sexualities, and gender (pp. 79-92). Routledge. https://doi.org/10.4324/9780429458514-7

[18] Chian, M. M., Bridges, S. M., & Lo, E. (2019). The triple jump in problem-based learning: Unpacking principles and practices in designing assessment for curriculum alignment. Interdisciplinary Journal of Problem-Based Learning, 13(2), 8.

[19] Corgnet, B., Espín, A. M., & Hernán-González, R. (2016). Creativity and cognitive skills among millennials: Thinking too much and creating too little. Frontiers in Psychology, 7

[20] Corson, Jordan, Jennifer Dauphinais, and Daniel Friedrich. "Holy Childhoods, Batman!: Configurations of Youth and Possibilities in Teacher Education as Seen through Robin Comics." The New Educator 16, no. 2 (2020): 171-185.

[21] Dawilai, S., Kamyod, C., & Champakaew, W. (2018). Proposed problem-based blended learning in creative writing: self-regulated learning in EFL Learners. Int J Appl Eng Res, 13(7), 4834-4841.

[22] Dolmans, D. H., De Grave, W., Wolfhagen, I. H., & Van Der Vleuten, C. P. (2005). Problem-based learning: Future challenges for educational practice and research. Medical education, 39(7), 732-741

[23] Duch, B. J., Groh, S. E., & Allen, D. E. (2001). The power of problem-based learning: a practical" how to" for teaching undergraduate courses in any discipline. (No Title)

[24] Erskine, J. L. (2014). It Changes How Teachers Teach: How Testing Is Corrupting Our Classrooms and Student Learning. Multicultural Education, 21(2), 38-40.

[25] Feldman, D. H., Csikszentmihalyi, M., & Gardner, H. (1994). Changing the world: A framework for the study of creativity. Westport, CT: Praeger

[26] Frawley, E. f. (2014). No Time for the 'Airy Fairy': Teacher Perspectives on Creative Writing in High Stakes Environments. English In Australia (0155-2147), 49(1), 17-26.

[27] Frye, N. (1971). Anatomy of criticism: Four essays. Princeton: Princeton University Press.

[28] Gallagher, S. A. (2023). Problem-based learning. In Systems and models for developing programs for the gifted and talented (pp. 193-210). Routledge.

[29] Georgia Department of Education. (2021). Georgia standards of excellence. Retrieved from https://www.georgiastandards.org

[30] Ghani, A. S. A., Rahim, A. F. A., Yusoff, M. S. B., & Hadie, S. N. H. (2021). Effective learning behavior in problem-based learning: a scoping review. Medical science educator, 31(3), 1199-1211.

[31] Grinell, S., & Rabin, C. (2013). Modern education: a tragedy of the commons. Journal Of Curriculum Studies, 45(6), 748-767.

[32] Guilford, J. P. (1950). Creativity. American Psychologist, 5(9), 444-454.

[33] Gute, G., Gute, D. S., Nakamura, J., & Csikszentmihályi, M. (2008). The early lives of highly creative persons: The influence of the complex family. Creativity Research Journal, 20(4), 343–357.

[34] Hammonds, K. A., & Anderson-Lain, K. (2018). The Batman comes to class: Popular culture as a tool for addressing reflexive pain. Dialogue: The Interdisciplinary Journal of Popular Culture and Pedagogy, 7(1). Retrieved from http://journaldialogue.org/issues/v7-issue-1/the-batman-comes-to-class/

[35] Hanif, S., Wijaya, A. F. C., & Winarno, N. (2019). Enhancing Students' Creativity through STEM Project-Based Learning. Journal of science Learning, 2(2), 50-57

[36] Helfand, J. (2016). Design: The invention of desire. Yale University Press.

[37] Henriksen, D., Mishra, P., & Mehta, R. (2015). Novel, Effective, Whole: Toward a NEW Framework for Evaluations of Creative Products. Journal Of Technology And Teacher Education, 23(3), 455-478.

[38] Hilton, M. (2012). Manufacturing Make-Believe. In Potent Fictions: Children's Literacy and the Challenge of Popular Culture (p. 19).

[39] Holmes, T. (2007). the hero's journey: an inquiry-research model. Teacher Librarian, 34(5), 19-22.

[40] Hui, A. N., & Lau, S. (2010). Formulation of Policy and Strategy in Developing Creativity Education in Four Asian Chinese Societies: A Policy Analysis. Journal Of Creative Behavior, 44(4), 215-235.

[41] Jakee, K., & Keller, E. (2017). The Price of High-Stakes Educational Testing: Estimating the Aggregate Costs of Florida's FCAT Exam. Journal Of Education Finance, 43(2), 123-151.

[42] Jeffrey, B., & Craft, A. (2004). Teaching Creatively and Teaching for Creativity: Distinctions and Relationships. Educational Studies, 30(1), 77-87.

[43] Johnson-Laird, P. N. (2002). How jazz musicians improvise. Music Perception, 19(3), 415-442.

[44] Katz, L. G., Chard, S. C., & Kogan, Y. (2014). Engaging children's minds: The project approach. Bloomsbury Publishing USA.

[45] Ketsman, O. (2013). The Creative Process Entailed in the Co-Construction of Classroom Curriculum. Critical Questions In Education, 4(1), 21-29

[46] Khoiriyah, U., Roberts, C., Jorm, C., & Van der Vleuten, C. P. M. (2015). Enhancing students' learning in problem based learning: validation of a self-assessment scale for active learning and critical thinking. BMC medical education, 15, 1-8.

[47] Kim, K. H. (2011). The Creativity Crisis: The Decrease in Creative Thinking Scores on the Torrance Tests of Creative Thinking. Creativity Research Journal, 23(4), 285-295.

[48] Kleiman, P. (2008). Towards Transformation: Conceptions of Creativity in Higher Education. Innovations In Education And Teaching International, 45(3), 209-217

[49] Krusemark, R. C. (2016). Teaching with Batman and Sherlock: Exploring student perceptions of leadership using fiction, comic books, and Jesuit ideals. Creighton Journal of Interdisciplinary Leadership, 2(1), 71-92. https://doi.org/10.17062/cjil.v2i1.32

[50] Liu, Z. (2022, February). Joker: An Instructive and Realistic Image of Villain. In 2021 International Conference on Education, Language and Art (ICELA 2021) (pp. 316-320). Atlantis Press

[51] Marsh, J. (1999). Batman and Batwoman go to school: Popular culture in the literacy curriculum. International Journal of Early Years Education, 7(2), 117-131.

[52] Martin, P. C. (2016). Test-Based Education for Students with Disabilities and English Language Learners: The Impact of Assessment Pressures on Educational Planning. Teachers College Record, 118(14), 1-24.

[53] Martz, B., Hughes, J., & Braun, F. (2017). Creativity and Problem-Solving: Closing The Skills Gap. Journal Of Computer Information Systems, 57(1), 39-48.

[54] Meyer, M. E. (2003). Utilizing Mythic Criticism in Contemporary Narrative Culture: Examining the "Present-Absence" of Shadow Archetypes in Spider-Man. Communication Quarterly, 51(4), 518-529.

[55] Microsoft Co-Pilot. (2024). Museum floor plan [AI-generated image].

[56] Mitchell, M., & Randolph, K. (2001). Creative Habits and the Meaning-Oriented Curriculum.

[57] Mufarrid, H., Miaz, Y., Ahmad, S., & Irsyad. (2023). Enhancing learning motivation and thematic learning outcomes of fifth-grade students through the Quantum Teaching model. International Journal of Humanities Education and Social Sciences (IJHESS), 2(6), 2106-2112.

[58] Myers, R. E., & Torrance, E. P. (1961). Can teachers encourage creative thinking?. Educational Leadership, 19156-159

[59] NACCCE (1999) All Our Futures: creativity, culture and education, London: HMSO

[60] Nakamura, J., & Csikszentmihalyi, M. (2001). Catalytic creativity: The case of Linus Pauling. American Psychologist, 56(4), 337–341.

[61] National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common Core State Standards. National Governors Association Center for Best Practices, Council of Chief State School Officers. https://www.corestandards.org

[62] Ninio, A., & Bruner, J. (1978). The Achievement and Antecedents of Labelling. Journal of Child Language.

[63] Noddings, N. n. (2013). Standardized Curriculum and Loss of Creativity. Theory Into Practice, 52(3), 210-215.

[64] Olivant, K. F. (2015). "I Am Not a Format": Teachers' Experiences With Fostering Creativity in the Era of Accountability. Journal Of Research In Childhood Education, 29(1), 115-129.

[65] Pang, W. (2015). Promoting creativity in the classroom: A generative view. Psychology of Aesthetics, Creativity, and the Arts, 9(2), 122-127.

[66] Partnership for 21st Century Learning P21. (2015), May. Framework for 21st Century Learning. Retrieved from http://www.p21. org/about-us/p21-framework.

[67] Petruzelli, N. (2022). How to Guard an Art Gallery: A Simple Mathematical Problem. *The Review: A Journal of Undergraduate Student Research*, *23*(1), 7.

[68] Polesel, J., Rice, S., & Dulfer, N. (2014). The Impact of High-Stakes Testing on Curriculum and Pedagogy: A Teacher Perspective from Australia. Journal Of Education Policy, 29(5), 640-657.

[69] Polson, C. (2018). TAKS-ing students? Texas exit exam effects on human capital formation. Economics Of Education Review, 62129-150.

[70] Rakhudu, M. A. (2015). Use of problem based scenarios to prepare nursing students to address quality improvement in health care unit: North West University experience. *International Journal of Educational Sciences*, *10*(1), 72-80.

[71] Rampersad, G., & Patel, F. (2014). Creativity as a Desirable Graduate Attribute: Implications for Curriculum Design and Employability. Asia-Pacific Journal Of Cooperative Education, 15(1), 1-11.

[72] Rogers, C. R. (1959). A theory of therapy, personality, and interpersonal relationships as developed in the client-centered framework. In S. Koch (Ed.), Psychology: A study of science. Vol 3:

[73] Rogers, C. R. (1973). My philosophy of interpersonal relationships and how it grew. Journal Of Humanistic Psychology, 13(2), 3-15.

[74] Rusdi, A., Hamzah, A., Tastin, Nurlaeli, & Widiani, D. (2023). *Development of thematic teaching materials based on local wisdom at Madrasah Ibtidaiyah in Pagaralam City*. Al-Ishlah: Journal Pendidikan, 15(4), 5104-5113.

[75] Russo, L. H. (2013). Play and Creativity at the Center of Curriculum and Assessment: A New York City School's Journey to Re-Think Curricular Pedagogy. Online Submission.

[76] Sánchez, J. G., & Patel, L. (2017). Growing up tested: Teachers' lived experiences of testing as students. Peabody Journal Of Education, 92(4), 440-444.

[77] Schechner, R. (2003). *Performance theory*. Routledge.

[78] Schmidt, R. A., & Bjork, R. A. (1992). New Conceptualizations of Practice: Common Principles in Three Paradigms Suggest New Concepts for Training. *Psychological Science*, *3*(4), 207–218.

[79] Simon, H. A. (1973). The structure of ill structured problems. *Artificial intelligence*, *4*(3-4), 181-201.

[80] Soulé, H., & Warrick, T. (2015). Defining 21st century readiness for all students: What we know and how to get there. *Psychology of Aesthetics, Creativity, and the Arts*, *9*(2), 178.

[81] Spector-Mersel, G. (2010). Narrative research: Time for a paradigm. *Narrative inquiry*, *20*(1), 204-224.

[82] Syahrul, M., Munawir, M., Masruni, N., Hairanie, R., & Magalhaes, A. D. J. (2023). *Designing and implementing an integrated thematic teaching model based on a scientific approach to improve basic education students' learning outcomes*. Indonesian Journal of Education (INJOE), 3(2), 383-397.

[83] Tan, O. S. (2015). Flourishing Creativity: Education in an Age of Wonder. Asia Pacific Education Review, 16(2), 161-166.

[84] Terrill, R. E. (1993). Put on a Happy Face: Batman as Schizophrenic Savior. The Quarterly Journal Of Speech, 79(3), 319-35. doi:10.1080/00335639309384038

[85] Tom, M. (2015). Five C Framework: A Student-Centered Approach for Teaching Programming Courses to Students with Diverse Disciplinary Background. Journal Of Learning Design, 8(1), 21-27.

[86] Upton, D., & Bernstein, D. A. (2011). Creativity in the curriculum. The Psychologist, 24(5), 356-359.

[87] Webb, A. N., & Rule, A. C. (2014). Effects of teacher lesson introduction on second graders' creativity in a science/literacy integrated unit on health and nutrition. Early Childhood Education Journal, 42(5), 351-360.

[88] Weinstein, E. C., Clark, Z., DiBartolomeo, D. J., & Davis, K. (2014). A Decline in Creativity? It Depends on the Domain. Creativity Research Journal, 26(2), 174-184.

[89] Weldon, G. (2017). The caped crusade: Batman and the rise of nerd culture. Simon and Schuster.

[90] Wyse, D., & Ferrari, A. (2015). Creativity and education: comparing the national curricula of the states of the European Union and the United Kingdom. British Educational Research Journal, 41(1), 30-47.

[91] Ye, P., & Xu, X. (2023). A case study of interdisciplinary thematic learning curriculum to cultivate "4C skills". Frontiers in Psychology, 14, 1080811. https://doi.org/10.3389/fpsyg.2023.1080811

[92] Zohar, A., & Alboher Agmon, V. (2018). Raising Test Scores vs. Teaching Higher Order Thinking (HOT): Senior Science Teachers' Views on How Several Concurrent Policies Affect Classroom Practices. Research In Science & Technological Education, 36(2), 243-260

Appendix

Name	Actor	Tools/Gadgets Used	Crimes Committed	Trap Used to Capture Caped Crusaders
The Riddler	Frank Gorshin / John Astin	Riddles, puzzles, question mark-themed gadgets	Elaborate schemes involving riddles to challenge Batman	Various traps, including a giant book with a spring-loaded page to crush them
The Penguin	Burgess Meredith	Trick umbrellas (guns, swords, gas emitters), trained birds	Theft, extortion, and elaborate criminal enterprises	Giant vacuum cleaner to suffocate them
The Joker	Cesar Romero	Joy buzzers, explosive toys, laughing gas	Thefts, pranks, and schemes to spread chaos	Giant clam intended to swallow Robin
Catwoman	Julie Newmar / Eartha Kitt	Cat-themed gadgets, claws, trained cats	High-profile thefts, often involving cat-related artifacts	Giant magnifying glass to burn them
Mr. Freeze	George Sanders / Otto Preminger / Eli Wallach	Freeze gun, cold-themed gadgets	Freezing valuable assets, revenge schemes	Freezing them in giant ice cream cones
King Tut	Victor Buono	Egyptian-themed weapons, hypnosis	Attempts to take over Gotham, believing himself to be the reincarnation of King Tut	Sealing them in a sarcophagus with a slowly descending ceiling
Egghead	Vincent Price	Egg-shaped explosives, tear gas eggs	Extortion and schemes to control Gotham's egg market	Giant frying pan to "scramble" them
Mad Hatter	David Wayne	Hypnotic hats, super-fast hat throwing device	Theft of hats, revenge against jurors who convicted him	Conveyor belt leading to a vat of acid
Shame	Cliff Robertson	Western-themed weapons, trick guns	Bank robberies and heists with a Western motif	Tying them to a wagon wheel set to roll off a cliff
The Siren	Joan Collins	Hypnotic singing voice	Hypnotizing men to commit crimes for her	Attempting to hypnotize Batman into jumping off a building

Louie the Lilac	Milton Berle	Flower-themed weapons, mind-controlling lilacs	Attempting to control Gotham's flower children and the perfume industry	Trapping them in a giant flower with poisonous pollen
The Archer	Art Carney	Trick arrows (explosive, net, etc.)	Robbing from the rich under the guise of giving to the poor	Strapping them to a giant arrow aimed at a target
Black Widow	Tallulah Bankhead	Spider-themed gadgets, venomous spider bites	Robbing banks by paralyzing managers with spider venom	Web-like net slowly descending to trap and suffocate them
Bookworm	Roddy McDowall	Book-themed weapons, explosive books	Crimes inspired by literary works	Giant cookbook with a spring-loaded page to crush them
Chandell	Liberace	Piano-themed gadgets, hypnotic music	Schemes involving music and extortion	Player piano rigged to crush them with its moving parts
Clock King	Walter Slezak	Time-themed gadgets, explosive alarm clocks	Time-related crimes, including thefts and kidnappings	Giant hourglass filling with sand to bury them
False-Face	Malachi Throne	Disguises, makeup kits	Impersonation and theft	Sealing them in a vault with a time-release lock
Minstrel	Van Johnson	Sonic weapons, musical instruments as gadgets	Blackmailing Gotham with threats of sonic destruction	Giant tuning fork set to vibrate them to death
Ma Parker	Shelley Winters	Machine guns, armored car	Running a family gang, taking over Gotham State Penitentiary	Strapping them to electric chairs rigged to a giant slot machine
Marsha, Queen of Diamonds	Carolyn Jones	Love potions, diamond-themed gadgets	Schemes to acquire valuable jewels and marry Batman	Dipping them into a vat of boiling oil
Nora Clavicle	Barbara Rush	Mechanical mice, explosives	Plotting to destroy Gotham for insurance money	Releasing mechanical mice with explosives to cause chaos
Sandman	Michael Rennie	Sleep-inducing sand, dream-themed gadgets	Robbing wealthy socialites by putting them to sleep	Placing them on a giant bed with a canopy set to collapse
Colonel Gumm	Roger C. Carmel	Stamp-themed weapons, glue guns	Counterfeiting stamps, kidnapping, and theft	Gluing them to a giant stamp set to be perforated
Lord Ffogg	Rudy Vallee	Fog-emitting pipes, cane sword	Thefts in London, often involving fog to obscure crimes	Locking them in a room filling with poisonous