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Igniting Unquenchable Curiosity

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Are you curious about the role of curiosity in helping people learn? Curiosity is the passion and desire to know and understand something because of a deep interest. It influences our innate urge to explore, also referred to as novelty-seeking behavior. According to researchers' curiosity opens people up to the possibilities in the environment and inspires them to learn both inside and outside of the classroom. A curiosity gap is defined as the gap between what a student knows and what they really, really, really want to know. This gap causes mental pain, or an itch, and the student feels a need to close it. To address declining student achievement, Inspire Success has developed a research-based instructional strategy that sparks curiosity and engages students. The program uses carefully curated books and games combined with a cloud-based software program, called the Relationship Connection Generator, designed to match a student's curiosity with the most stimulating materials. Then we match them with a trained mentor who explores their curiosity and asks thought-provoking questions to create a personal connection. This session will focus on how this approach cultivates and amplifies that innate curiosity that is within every student. Curiosity amplifies talents, strengths, performance and potential.

Keywords: InspireSuccess, curiosity gap, learning, novelty-seeking behavior

Introduction

The title of this paper could just as well be the tale of two gaps. The first gap we are referring to is the continued gap in academic performance between various socioeconomic and racial groups in the United States. According to the latest National Assessment of Education Progress report (2024), the huge gap between different socio-economic level learners continues and has even been aggravated by what some call the pandemic tsunami. Students in the United States have not recovered from the devastating impact that the pandemic has had on education. The national scores of higher-performing students verses lower performing students continue to widen below pre-pandemic levels (2019) in all tested grades and subjects. Any progress that was made in 2024 testing was driven by higher performing students. How big is this gap? On a 500-point scale the lowest-performing students overall scored approximately 100 points below the highest performing students for the 2024 testing period. (NAEP 2024) This paper outlines research and tactics to help reduce/close this gap.

The second gap referred to above is the curiosity gap. An essential element of the InspireSuccess program is our inclusion of the student's curiosity gap first described by Lowenstein in 1994. He describes this as the gap between what a child knows and what they really, really want to know. It is claimed this knowledge gap causes mental pain, or an itch, and the student feels a need to close it. Subsequent research on the curiosity gap indicates it is a motivator of learning, essential in decision-making, and crucial for healthy development (Kidd, & Hayden, 2015). In another series of studies, curiosity was found to enhance intelligence as highly curious students aged three to eleven improved their intelligence scores 12 points more than the least curious students over the same period. They also increased their level of perseverance or grit, and it produced deeper engagement in learning (Kashdan, & et.al 2018).

Curiosity also has a multiplier effect on learning (Borba, 2021).

Simply put curiosity amplifies children's talents, strengths, performance and potential. Curiosity plus self-confidence increases openness to take healthy risks and explore. Curiosity plus empathy opens and strengthens relationships. Curiosity plus perseverance deepens learning (Borba, 2021, p. 168).

The founders of InspireSuccess' deep interest in and belief in the power of curiosity came about because of our experiences teaching and mentoring reluctant learners. While trying to teach math to middle-schoolers with limited success. Then we challenged them with who they thought was the best shooter in the NBA? By sharing shooting attempts versus makes, free throw and three-point attempts versus missed shots, all based on readily available NBA data, we soon had this once reluctant class engaged in a math-filled debate! Another

of us mentored a young lady who was very reticent and did not want to engage in learning or social interactions. Fortunately, we had used an earlier version of our own curiosity inventory and found out she was intensely interested in dancing. When a copy of "The Dancing Jellybeans" was presented, a story about the challenges of forming and leading a competitive dance team, her countenance changed. After reading the book, a lively discussion about team building and problem solving ensued and she was hooked! Speaking of hooked, another student we were mentoring who claimed he was not curious about anything, revealed he loved fishing. He was soon surrounded by books on the subject and engaged in a lively discussion about decision-making and how making the right decisions predicted catching some fish or at least improving the odds. We almost changed the name of our program to "tackle box" because it was a tool to hook students on learning!

While it is challenging to engage a large group of classroom students in curiosity-driven discussions, the one-to-one setting of mentoring is ideal for such interaction. The InspireSuccess program is designed specifically to encourage such learning.

Literature Review

Importance of Curiosity

According to researchers, curiosity opens people up to possibilities and inspires them to learn both inside and outside the classroom. It has been proven that children with greater curiosity are much better performers academically than less curious students (Renninger, et.al. 2018). A meta-analysis of over two hundred studies involving 50,000 students reported in the Association for Psychological Science (2019) demonstrates curiosity is at least as important as intelligence in determining academic performance.

Curiosity is not only critical to encouraging learning, but it also plays a role in other important aspects of life. We can fuel our thirst for knowledge by connecting our passions to other intriguing concepts, allowing curiosity to guide us toward profound discoveries and personal growth. Researchers usually distinguish between two distinct types of curiosity. First, perceptual curiosity arises from a discomforting sensation caused by unexpected or contradictory information that challenges our sense of reality. On the other hand, epistemic curiosity is purely pleasurable, fueled by the anticipation of rewards, activating the dopamine system in our brains. A thirst for knowledge drives this curiosity and is at the core of all scientific exploration. Dopamine and novelty-seeking behavior is linked to curiosity, influencing our urge to explore (Costa, et.al, 2014). It is no surprise that the great scientist, Albert Einstein, was quoted as saying:

> *I have no special talents. I am only passionately curious.* (Ahmed, 2018, p. 130)

In his book written last year just before he died at one hundred years old Henry Kissinger, the world-famous statesman and problem solver, made the following quote:

> *Discovery may be the single most exhilarating capacity of the human species. Driven by curiosity, delighted by surprise, we fill the vacuums we perceive and transform the questions we ask into answers. Exploration is so integral to our self-definition that despite manifest dangers and frustrations we have continued, unrelenting, down its many paths.* (Kissinger et al., 2024, p. 9)

Curiosity is also linked to enhanced learning. A crucial factor for successful retention and integration of new learning is repetition. Recent studies employing functional magnetic resonance imaging (fMRI) have discovered that curiosity is vital in this process: erceptual curiosity triggers the activation of brain regions typically associated with conflicts or primal needs, like hunger or thirst. Epistemic curiosity stimulates areas linked to the anticipation of rewards. These findings further emphasize the profound interplay between our innate curiosity and our brain's incredible capacity for growth and learning (Kennedy & Fersula, 2023).

Additional research has discovered that curiosity plays a vital role in other activities we might engage in as we pursue careers. For example, research on the world's most successful investors determined that curiosity was an invaluable trait as it increases resilience and helps them better handle market volatility and uncertainties. The study cites Warren Buffet as a prime example, as his investment philosophy is deeply rooted in curiosity-driven learning about new industries and companies (Quasem, 2025). Several other leading world-famous financial gurus were also listed in the study and they all featured curiosity-driven learning as a key factor in their success.

Similarly, research on the critical skill of forecasting which is of vital importance in economics and military intelligence, among many other uses, found that certain individuals were very skillful at predicting future events. One of the key traits of these "superforecasters" was that of being intellectually curious. They were actively open-minded and constantly interested in new ideas and in making connections between different fields of information (Tetlock and Gardner, 2015). They used the fascinating analogy of these successful super forecasters as being like foxes with dragonfly eyes. Foxes because of their insatiable curiosity, free-roaming approach and omnivorously consuming of information, and dragon fly eyes because of their ability to synthesize input from one thousand eyes and on many different perspectives and concepts without losing focus on what really matters (Epstein, 2019).

In another groundbreaking study, David Epstein (2019) found that generalists triumphed in a specialized world mainly because they were curiosity-driven and could coalesce their learnings from various fields and perspectives to form successful strategies. He is not saying there is not a need for specialization, just that the best specialists often have avocations that help stimulate improved performance. They actively pursue what is called active open-mindedness (Baron, 2008). These generalists believe depth can prove to be inadequate without breadth of perspective. To do this they thoroughly and actively search for data, they search until they are confident that they have collected enough data to decide, and then they consciously and painstakingly apply fairness to other possibilities than the one they might initially favor. They believe that open-mindedness refers to the consideration of new possibilities, new goals, and evidence against positions that already seem strong. Baron (2008) also found that this characteristic of active open-mindedness is a hallmark of the top performing teams in most fields.

This is why Edward De Bono's parallel or lateral thinking method called "Six Thinking Hats" is still very popular in situations calling for active open-minded thinking to develop creative solutions or resolve conflicts. His method encourages groups of people to collectively develop multiple perspectives on the problem situation. Each team member must not just participate but contribute in each of the six steps. The six steps are:

1) Neutral and objective data collection concerned with data and facts,
2) The emotional view, Express feelings that might arise about the problem,
3) Discuss all the possible pitfalls, careful and cautiously, elaborate reasons why it cannot be done.
4) Discuss all the positive benefits and aspects of solving this situation.
5) Creativity and new ideas. How will this solution help the organization grow?
6) The organizing step (De Bono, 2009). This strategy has been used in countless settings across the years and uses curiosity to create clearer thinking, improved communication, and greater creativity as people study all the elements of the situation.

A growing concern is that overspecialization is growing and hindering new innovative breakthroughs in science and the arts. Researchers are reviewing the great polymaths of the past, such as Michealangelo, and determining what made them so effective. One of the key traits of all great polymaths is described as unquenchable curiosity, resulting in continuous unbounded enquiry. They were also very versatile, moving seamlessly through different fields of knowledge, and able to connect or synthesize these different spheres of knowledge to produce creative outcomes (Ahmed, 2015).

Curiosity can also play a role in what Carol Dweck (2006) called a growth mindset versus fixed mindset. Dweck defines a growth-mindset as believing that your abilities are largely the result of effort and that you can grow to the extent that you are willing to work hard and be open and curious about learning new things. Unfortunately, many people have what Dweck calls a fixed mindset. A belief that says we are who we are, and abilities can only be revealed, not developed. At InspireSuccess we are constantly using things students are curious about to motivate them to learn new things and develop a growth mindset.

Model/Program

Another key component to the InspireSuccess program involves developing grit or perseverance in students. This concept of grit is similar but not quite the same as curiosity, as Angela Duckworth indicates in her book on developing grit. She says the two ingredients of developing grit are determining what a person's level of perseverance or self-control is and what they have a passion for, i.e. are curious about.

In a study with Martin Seligman (2005) they found that the secret ingredient for student success was self-control or willingness to not quit (Perseverance). It proved to be twice as important to academic success as the student's intelligence level (Duckworth & Seligman (2005).

This led Duckworth to introduce a term called grit to the discussion about student performance. She developed a grit scale to measure the ability to stick to a task or long-range goals. The critical elements were to have a sense of purpose and a passion or deep curiosity. She found grit was a stronger predictor of academic success than any other measure, including IQ and SAT scores (Duckworth, 2016).

How We Encourage and Mentor Curiosity

Everyone has a certain amount of curiosity. It just appears that increased pressure to specialize to succeed or to make students fit into a specified curriculum have dampened the innate curiosity in many students. According to Waqas Ahmed, the author of Polymath: Unlocking the Power of Human Versatility, the challenge is not discovering or motivating a student's curiosity but just releasing it.

There is an overwhelming consensus among sociologists that curiosity is one of fundamental traits of the human condition natural disposition that exists in all humans regardless of class, race, or gender. This is supported by evolutional biology, which has proved time and again that humans are genetically programmed to be curious. Primates, for example, will work longer and harder to discover what is on the other side of a trapdoor, more than they would even strive for food or sex. Indeed, zoologist Desmond Morris, a renowned scholar of human and animal behavior, concluded in his 1967 bestseller The Naked Ape that 'all mammals have a strong exploratory

urge' and that humans are the inquisitive of them all (Ahmed, 2018).

Findings

To encourage and release curiosity InspireSuccess starts with determining what students are deeply curious about. Once the student is motivated to learn, the mentor's job becomes much easier. How do you determine what a student is curious or passionate about? You ask them! The InspireSuccess program uses our proprietary curiosity inventory that asks students a series of thought-provoking questions about their hobbies, dreams, and especially what they are curious about. This is a fun discovery activity they engage in with their mentors over the first two weeks of mentoring using the curiosity inventory. It plays a crucial part in building a solid relationship. To address the declining student achievement we discussed earlier, InspireSuccess has developed a research-based instructional strategy that sparks curiosity and engages students. The program uses carefully curated books and games combined with a cloud-based software program, called the relationship connection generator, designed to match a student's curiosity with the most stimulating learning materials. Then we match them with a trained mentor who explores their curiosity and asks thought-provoking critical thinking questions to create a personal connection. This approach cultivates and amplifies that innate curiosity that is within every student. We have previously shown how curiosity functions as a multiplier effect on learning. Curiosity amplifies talents, strengths, performance and potential (Borba, 2021). This environment, and coaching by mentors using critical thinking questions, nurtures a growth versus a closed mindset as students learn about things that they are passionate and curious about and have fun while doing so.

Discussion

Embracing curiosity with confidence enables students to embark on a journey of continuous growth and fulfillment in life. The following Abraham Lincoln quote inspired the authors to design this literature and game-based program:

The things I want to know are in books; my best friend is a person who will get me a book I haven't read.

Lincoln was known to walk twenty miles each way to borrow a book to read. His family was quoted as saying at the end of a hard day if he hadn't learned one new thing, he would sit down and read by candlelight until he learned that one new thing (Sandberg, 1954). InspireSuccess believes the role of the mentor is to ignite and stoke such unquenchable curiosity in the students we mentor. Documented results with over four hundred students over the last four years have demonstrated this program works. Feedback from parents and teachers overwhelmingly support what curiosity-based learning can achieve.

Data collected from our pre/post behavioral assessment survey sent to teachers with students enrolled in the program indicated that 65% of students that were mentored showed significant behavioral improvements in the classroom within the school year, the remaining 35% showed some progress and additional feedback from teachers and parents indicated they benefitted from the program.mIn addition to the pre/post survey, an end-of-year program evaluation was administered to teachers, parents, mentors, and students. Feedback indicated:

- 100% of teachers would recommend the program to other teachers.
- 100% of parents would recommend it to other parents.
- 100% of mentors would recommend to other mentors—and were coming back.
- 100% of students said they felt more engaged in school and wanted to re-enroll.

References

Ahmed, W. (2018) *The Polymath: Unlocking the Power of Human Versatility.* John Wiley and Sons.

Baron, J. (2008). *Thinking and deciding. 4th edition*. Cambridge University Press.

Borba, M. (2021) *Thrivers: The surprising reason some kids struggle while others shine.* G.F. Putnam Books.

Costa, V. Tran, V., Turchi, J. & Averbeck, B. (2014). *Dopamine modulates novelty-seeking behavior during decision making.* National Library of Medicine

De Bono E. (2009) *Lateral thinking: A textbook of creativity.* Penguin Books.

Duckworth, A., & Seligman, M. (2005) "Self-discipline outdoes IQ in predicting academic performance of adolescents," *Psychology Science, 16*(12), 939-944.

Duckworth, A. (2016) *Grit: The power of passion and perseverance.* Scribner

Dweck, C. (2006). *Mindset*. New York, NY: Ballantine Books.

Epstein, D. (2019) *Range: Why generalists triumph in a specialized world.* Riverhead Books.

Kashdan, T, et.al. (2018) The five dimensions of curiosity, *Harvard Business Review,* October-November, 58-60

Kennedy, J. & Fersula, N. (2023) The psychology and neuroscience of curiosity. *Psychology Today.* November.

Kidd, C. & Hayden, B. (2015) The psychology and neuroscience of curiosity. *Neuron, 4*, 88(3)449-460.

Kissinger, H., & Mundie, C., & Schmidt, E. (2024). *Genisis: Artificial intelligence,hope, and the human spirit.* Little Brown.
Lowenstein, G. (1994). The psychology of curiosity. *Psychological Bulletin, 116*(1), 75-98.
National Association of Educational Progress (NAEP), 2024 report.
Quasem, B. (2025). The curious investor: Why curiosity is key to investment success. *Bohemian Magazine*, 2025.
Renninger, K., & Hidi, S. (2019). Interest in development and learning. In K. A. Renninger & S. E. Hidi (Eds.), *The Cambridge handbook of motivation and learning* (pp. 265–290). United Kingdom Cambridge University Press. https://doi.org/10.1017/9781316823279.013
Sandburg, Carl. (1954) *The prairie years and the war years.* Galahad Books
Tetlock, P., & Gardner, D. (2015) *Super forecasting: The art and science of prediction.* Broadway Books.