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The Nurturance of a Scientist

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Abstract

This paper elaborates the emotional journey of a child with reference to the experiences of famous scientist Thomas Alva Edison during his growing-up years. The role of women — in Edison's case, his mother in early childhood years — have been, particularly, emphasised. This paper highlights the way family plays a crucial role in the holistic development of a child, moving beyond the limitations of social acceptance. The confidence is transferred to the child before one gets acquainted with the nuances of the outside world. Three examples have been illustrated in the paper to delve into details for understanding the fragile nature of the child.

Introduction

'Home is a child's first school and mother the first teacher', goes an old saying. Every person is born with unique talents, which may be nurtured or lost in the circumstances one grows in. The under representation of women in science can be traced to the cultural biases affecting their education. As a result, there is far more less entry of women as compared to men in the field of scientific research. The barriers faced by women, who went on to become scientists, have been well documented. What is less visible is the role played by the wives, sisters and mothers of male scientists, who achieved name and fame. Most of the time, it is the mother who recognises a child's talent(s) and plays a major role by encouraging it. This paper is an attempt to highlight a mother's faith in her child's abilities.

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Nancy Matthews Elliott — Mother of Thomas Edison

The story of how Thomas Edison was rejected from school and homeschooled by his mother, Nancy Matthews Elliott, is well known. This story has evolved with a number of attached incidents, mostly fictional. But it is a fact that his mother, who taught him at home, was a major influence in his life. When Edison was in the early grades of school, his mother Nancy was qualified with a degree in education. But she was not practising as a teacher at that time as she was busy taking care of the family.

As a child, Edison constantly asked every adult to explain the working of just about everything he came across. This persistent questioning made his teacher lose patience and one day, Edison came home with a note that his teacher had written to his mother. He told her, "My teacher gave this paper to me and told me to give it to you." His mother's eyes welled up as she read the letter. It was a letter from the school, dismissing her son. Controlling her tears of anxiety and dismay, she said to the little boy that she would read out the letter to him. Not to discourage her son and demoralise him, she pretended to read the following, "Your son is a genius. This school is too small for him and doesn't have enough good teachers for training him. Please teach him by yourself."

Nancy taught him the three Rs (reading, writing and arithmetic), the Bible and introduced him to a library, where she encouraged him to read the classics. Edison, a curious child, read every book kept on the shelves in the library, which included books on science, apart from classics. His parents scraped enough money to hire a tutor once they realised his interest in science. His work was more on the applications of scientific principles, resulting in the invention of phonograph, electric bulb or electric utility system, motion pictures and nickel–iron storage batteries.

Edison always credited his mother for her undying love and patience, and giving him a firm footing in the world as a precursor to his success. He said, "My mother was the making of me. She was so true and so sure of me. I felt that I had someone to live for, someone I must not disappoint. The memory of my mother will always be a blessing to me."

Many years later, long after Edison's mother had passed away and he had become one of the greatest inventors of the century, he was glancing through old family articles. He chanced upon a folded paper in the drawer of a desk and opened it. It was the note that his teacher had sent him home with, now yellowed with time. He read out the note, which stated, "Your son is addled (mentally ill). We won't let him come to school anymore."

Edison wept for hours, acknowledging his mother's courage, steadfastness and faith in him. His diary contains an emotional note for

that day, which reads, "Thomas Alva Edison was an addled child raised by a hero mother and went on to become the genius of the century." He followed her maxims of 'never being afraid to fail' and 'to keep improving and not stop learning' all his life. He often said, "Failure is the road to success". It is not the idea that fails. It only means that one's way of approaching it has failed and should, therefore, be eliminated, and another way should be tried out. Edison once said, "I have not failed. I have just found 10,000 ways that won't work".

Writing in 1885, Sarah Knowles Bolton marvels at Edison's remarkable work ethic: "Five feet ten inches high, with boyish but earnest face, light gray eyes, his dark hair slightly gray falling over his forehead, his hat tipped to the back of his head, as he goes ardently to work, which has averaged eighteen hours a day for ten years, he is indeed a pleasant man to see."

"You perceive he is not the man to be daunted by obstacles. When one of his inventions, printing machine, failed, he took five men into the loft of his factory, declaring that he would never come down till it worked satisfactorily. For two days and nights and 12 hours — 60 hours in all — he continuously worked without sleep, until he had conquered the difficulty, and then, he slept for 30 hours. He often worked all night, thinking the best when rest of the world slept," she adds.

Edison changed the world with concretisation of his invention process. He believed in the principles of sharing ideas and teamwork, which act as catalysts in the process of education. This led to the establishment of the first industrial research laboratory. Edison is credited with 1,093 inventions, making him one of the most productive inventors in human history. Later, it was known as the commercial R&D lab. This concept was became so popular in his lifetime that almost every major company created its own R&D lab. The invention of R&D labs stands out as the incredible process that keeps the Industrial Revolution of the 1880s vibrant and what we refer to as technology driven growth — the very foundation of what we mean when we say 'progress'. Edison founded 14 companies — the largest being General Electric Company, which adopted the tagline — 'Progress is our most important product' in the 1950s.

It is a fact that reaching the top position in scientific research is demanding, and requires commitment and perseverance. To do so, an inventor or scientist needs the support and understanding of family members.

It is important to understand that familial support is necessary at all stages of life, especially, the primary stage. Qualities of emotional appreciation, especially, the correct assessment of a child's physical and behavioural characteristics and needs by teachers are important. An incorrect analysis will lead to unfair decision making on the

part of teachers. Patience, on the part of teachers, is required for quality emotional appreciation in children, especially, children with special needs.

The anecdote as mentioned about Edison is reflective of two themes, which are as follows.

- Mother's confidence in her child's abilities, which paved the way for Thomas to become a renowned scientist
- A teacher's incorrect assessment of the student, which sealed Thomas's path to acquire educational experience at school

This narrative is a learning opportunity for primary teachers, especially, as children start forming opinions and perceptions about themselves and the world around during the primary years of life. It is important for a teacher to guide children at the primary stage as it is a crucial period in their life. One must not think just about the product but also the process. The next time you switch on an electric bulb, take a moment to remember not just Edison but also his mother, who helped him bring light to our lives.

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