Acknowledgment and Disclaimer

Welcome to the second volume of the Indiana University Southeast’s Graduate Research Journal. This journal’s mission is to provide a public platform for the best and most original research papers produced in the Business, Education, and Liberal Studies graduate programs. The editors of the GRJ would like to thank everyone who submitted work for consideration for this edition, with a special thank you to those whose contributions were selected to appear in this edition. We would also like to express our appreciation to our faculty advisors for their commitment to and guidance of this journal. We would like to thank the university for its support of the work of graduate students and extend a special thank you to all university students whose activity fees help to make this journal possible.

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The IU Southeast Graduate Research Journal is an interdisciplinary forum for the publication of original graduate work. We strongly encourage all IUS graduate students to submit their work to the next volume of the GRJ, scheduled for publication in the spring of 2013. All types of papers will be considered: research, literature reviews, case studies, and so forth. Maximum length is 5,000 words including references. Please send submissions as a Microsoft Word attachment in an e-mail addressed to webmls@ius.edu. Be sure to include in the body of your e-mail your contact information, the title of your paper, the name of the relevant course and its professor, and a note about the style of documentation your paper uses. The submission deadline will correspond with the beginning of winter recess 2012.
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In *You Are Not a Gadget*, Jaron Lanier maintains that technologists find human beings to be mystical while scientists find no magic at all in people. This essay will demonstrate that scientists are spiritual by nature and do recognize the magic of human beings, while exploring to better understand them. Technologists, on the other hand, exploit the magic they find, frequently not with the greater good in mind.

To begin with, we need to clarify more precisely just what Lanier means when he says, “Up to this point, I have described what I believe when I am a technologist. I take a mystical view of human beings.” Yet when he collaborates with scientists, “I believe something else…for scientists can study people as if they were not magical at all.” Here Lanier identifies a division between technology and science. That division is not clearly detected by everyone. Rustum Roy, a science scholar, tells us, “The word ‘science’, for 99% of the public, usually refers to technology.” Roy says this is real science, which includes chemistry and physics, and he contends that while actual knowledge of science is very limited in the American public, it is much admired. He also feels that the future of science is in agriculture, engineering and earth science where people can see and experience the results. He calls this “applications driven science.”

While Roy sees technology and science as being the same, C.P. Snow, research scientist and novelist, can see the same division that Lanier does. Snow says that,” It is permissible to lump pure and applied scientists into the same culture, but the gaps are wide.” The two groups misunderstand each other. The applied scientists (technologists) are absorbed in making things, while the pure scientists assume such activity is for “second-rate minds.” So Lanier sees
technology (applied sciences such as engineering) as being separate from pure science (like research in chemistry or physics).

In addition to determining how Lanier sees technology as opposed to science, we must also consider what he means by ‘mystical.’ Mystical may mean supernatural, spiritual, mysterious, magical or inexplicable. Lanier says, “It is awkward to study neuroscience, for instance, if you assume that the brain is linked to some other entity—a soul—on a spirit plane. You have to treat the brain simply as a mechanism you don’t understand if you are to improve your understanding of it through experiment.” These two views are not necessarily at odds, and Lanier short-changes the scientist if he thinks they must be. Lanier has stated that, from his point of view, humans are mystical. We will examine the mystical idea from the scientific point of view.

Along these lines, two authors, David Hay and Pawel M. Socha, interpret spirituality as a natural phenomenon that evolved biologically and socioculturally as a means to survive and cope with the human situation. Oxford zoologist Alister Hardy said that the spiritual experience, “being aware of or influenced by a presence or a power that is different from one’s everyday self,” is a human universal. Religious experience is only a small subset of this phenomenon. Hay and Socha concluded that spiritual awareness as a natural human predisposition involves interaction between biological/psychological (with regard to self-preservation) and social (with regard to group preservation) components to evolve in the preservation of the human species. They say that spirituality is basically a means of problem solving or coping. They write, “We see spiritual awareness as natural and universal in the human species, it follows that it cannot be related only to members of a particular religion or even to religious people in general. All human beings, including secular atheists and others hostile to religion, must on our definition possess spirituality in some form.”

From the neuroscientists’ point of view, human cortical information processing is involved in the mystical experience. Through interaction of biology and culture, specific passages in the brain are stimulated, as
conditioning parameters of neurocultural information. “Scientists and mystics…must pass all their observational input and interpretive output through the circuitry involved in human identity expression. So, they must also become experts in interpretation.”

In further neuroscientific research, Eugene d’Aquili and Andrew Newberg explored the physical and spiritual bases of mystical experience. They imaged the brains of Tibetan Buddhists during meditation and discovered that certain areas of the brain associated with distinguishing ‘self’ and ‘not-self’ were inactive, while areas involved in concentration were active.

In October 2001 a Science and the Spiritual Quest Conference took place at Harvard University, sponsored by the Center for Theology and the Natural Science, in partnership with the American Association for the Advancement of Science. Participants considered whether cognition and consciousness could be explained by the concepts of neuroscience, or if more was involved.

As another example, spirituality in the medical environment and its relation to healing are not new concepts. Funding for research in these areas is now available. The National Institutes of Health offer funding for studies on spirituality as it effects chemical and neurological activities in the brain.

Consider that one of the greatest scientists of all time, Albert Einstein, was a very spiritual person. He only alluded to this when he said that, “persevering on the most difficult scientific problems requires a state of feeling similar to that of a religious person or a lover.” In an essay on ethics, Einstein cited Moses, Jesus, and Buddha as equally valid prophets. He saw no boundaries or barriers in life as there were none in nature. There were also no boundaries between Einstein’s religious and scientific feelings. Karl Popper said that in conversations with Einstein, “I learned nothing…he tended to express things in theological terms, and this was often the only way to argue with him.” Einstein also said, “What really interests me is whether God had any choice in the creation of the world.” When asked if he believed in God, after some felt his theory of relativity cast doubt on the existence of God, he
said, “I believe in Spinoza’s God, Who reveals Himself in the lawful harmony of the world, not a God Who concerns Himself with the fate and the doings of mankind.” He also said, “I maintain that the cosmic religious feeling is the strongest and noblest motive for scientific research…A contemporary has said not unjustly that in this materialistic age of ours, the serious scientific workers are the only profoundly religious people.”

Spirituality among scientists continues in the modern day. A survey of 1600 professors of natural and social sciences, published in 2006, stated that 66 percent of natural scientists thought of themselves as spiritual. Even among those who said they were atheists, 22 percent felt themselves to be spiritual. The researcher, Elaine Howard Ecklund, said, “These scientists are less religious than the general public, but they are a whole lot more interested in spirituality…”

It is true that some scientists dismiss mystery as being part of science. Astronomer (and atheist) Carl Sagan asserted that because the origin of the universe could be explained by the laws of physics, there was “nothing left for a Creator to do.” However, other astronomers would disagree. Allan Sandage, the 20th century astronomer who figured out how quickly the universe is expanding and how old it is, still wondered at the mystery: “why is there something rather than nothing?” He decided, “It was my science that drove me to the conclusion that the world is much more complicated than can be explained by science…It is only through the supernatural that I can understand the mystery of existence.”

Some further examples: Physicist Mehdi Goldhani of Sharif University of Technology in Tehran says, “Research is a worship act, in that it reveals more of the wonders of God’s creation.” Albert Einstein said, “Science without religion is lame. Religion without science is blind.” And in 1996, Pope John Paul II endorsed evolution as part of God’s master plan.

Lanier himself says that he “put(s) on a different hat” according to whether he is being a technologist or collaborating with scientists. Scientist have the same ability. In fact, everyone does. Jose-Manuel Alonso of the
SUNY State College of Optometry in New York City has discovered that certain groups of cells in the brain work to block out information that the brain deems irrelevant. These cells are different from the groups of brain cells that enhance attention. The outcome of this is that the more difficult a task is, the more interest that it causes or the more focus it requires, the enhancement of essential information and the suppression of nonessential information both intensify. So the scientist can also put on a different hat and call on different sections of his brain when his work requires it.

Now that we have established that scientists also have a spiritual/mystical side which they can use or suppress as the occasion arises, we will consider the second part of my assertion: that technology exploits the magic it finds. This has been historically true, even as far back as the promotion of patent medicine quackery to village rubes attracted to the traveling medicine shows that borrowed from the circus, vaudeville, and Wild West shows. Entertainment became more sophisticated through radio and eventually television, the promise of which RCA Vice President, David Sarnoff enticed the public long before it was available for general use. In a November 1928 edition of the New York Times, he promised that there would soon be sight broadcasting receivers available for home use just as radio receivers had been. By the early 1950s everyone wanted a television, some going so far as to put up an antennae so the neighbors would think there was one in the house, even if there wasn’t, and children were already spending up to four hours a day in front of the set. As television developed, its mental appeal did not.

In an article discussing the ‘talk shows’ of the 1990s, the authors bemoan the “use of this incredibly powerful commercial medium for profit [to] debase culture…The assumption that the audience can be entertained only by mind-numbing commercials, sound bites, the trivial and inane does not take into consideration that their tastes have been shaped by many years of constant exposure to this fare.” This reads like a description of the internet.

Similarly the internet is a remarkable medium and could be used as a priceless resource, but human foibles get in the way and its users become
vulnerable to “deceit, exploitation, neurotic escapism and, of course, mindless blathering.”

Along these same lines, Lanier points out some of the difficulties with the internet. In his own words, "Authorship—the very idea of the individual point of view—is not a priority of the new ideology.” There is a “digital flattening of expression into global mush.” Facebook organizes “people into multiple-choice identities, while Wikipedia seeks to erase point of view entirely…People will accept ideas presented in technological form that would be abhorrent in any other form…Using computers to reduce individual expression is a primitive, retrograde activity, no matter how sophisticated your tools are.”

"The crowd works for free and statistical algorithms supposedly take the risk out of making bets if you are a lord of the cloud. Without risk, there is no need for skill. But who is that lord who owns the cloud that connects the crowd? A lucky few…will own it…This is the grand unified scam of the new ideology.”

By comparison, Northrop Frye held similar sentiments about loss of imagination and literature. He said, “The only way…to create a literal hell on earth, is deliberately to debase our language by turning our speech into an automatic gabble…The essential thing is the power of choice.” When speaking of literature as being an expression of the imagination, Frye said, “But if we shut the vision of it completely out of our minds, or insist on it being limited in various ways, something goes dead inside us, perhaps the one thing that it’s really important to keep alive.”

While Lanier spends a lot of time pointing out the foibles of computer technology, in the end he defends the good it was intended to do and still could do. Again, in his words, “Let me affirm that I am not turning against the internet. I love the internet.” As an example in defense of the internet, he says, “The most important thing about post-symbolic communication is that I hope it demonstrates that a humanist softie like me can be as radical and ambitious as any cybernetic totalist in both science and technology, while still believing that people should be considered differently, embodying a special category.”
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Lanier’s apology/validation of the internet is similar to Jacob Bronowski’s admission of the terrible destruction that science can cause as evidenced by the atomic bomb in the final days of World War II, while pointing out the fact that science is a major part of our lives, and has the capacity to be used for very good things. “We live in a world which is penetrated through and through by science, and which is both whole and real…I want to show the place of science in the canons of conduct which it has still to perfect…I shall study the conditions for the success of science and find in them the values of man.”27

The examples given demonstrate that there is an overlap of technological, scientific, spiritual and mystical ideologies of technologists and scientists. The characteristics mentioned are a part of the human being doing the work, and are a part of the way each one views that work. This approaches transdisciplinarity as described by Julie Thompson Klein. The variety of viewpoints are synthesized into the individual and may be used to regard the work they do from multiple perspectives, integrating knowledge from both basic disciplines along with the humanistic view that each one possesses.28 Both technologists and scientists are inherently spiritual and both appreciate the magic that is found in human beings. For either to presume a lack of such feeling in the other, demonstrates a considerably narrow-minded assumption about the other’s attributes. The point is, scientists are as likely to find something mystical in natural science as technologists are, and both are just as likely not to. Yet technology has exploited the mysteries that awe the masses since the days of traveling snake oil salesmen, through the mind draining technology of television and into the hive mentality that computer technology has spawned. But the wise technologist or scientist must always temper his or her work with this thought from Einstein, “Concern for man himself must always form the chief objective of all technological effort—concerning the big, unsolved problems of how to organize human work and the distribution of commodities in such a manner as to assure that the results of our scientific thinking may be a blessing to mankind, and not a curse. Never forget this when your are pondering over your diagrams and equations!”29
Bibliography


20. Lanier, P. 47.


25. Lanier, P. 71.


Ever wonder why you click with some people more easily than with others, or why some group leaders are easier to follow? A well-known and powerful tool that can explain these questions is the Myers Briggs Type Indicator® (MBTI®). It is used in different organizational contexts and provides people with practical ways to improve the way they communicate, influence others, and work together. The MBTI® assessment and psychological type cross demographics, industries, and cultural and international boundaries and are applicable in a multitude of settings.

The MBTI® measures personality type. Personality type refers to the psychological classification of people which first originated in the work of Carl Jung, Swiss psychologist, and was first published in his 1921 book Psychological Types (English edition, 1923). Understanding Jung’s theory is essential for understanding the MBTI®. Jung’s idea was that personality is not random or haphazard, but actually has an observable pattern (Jung, 1971). In other words, our personality determines our behavior. The way we act, react, make decisions, and view the world are based on key personality types.
Jung’s theory of psychological type proposes that we are born with a preferred way of using our perception and judgment. If people differ systematically in what they perceive and in how they reach conclusions, then it is only reasonable for them to differ correspondingly in their interests, reactions, values, motivations, and skills (My, n.d.).

Katharine Briggs used Jung’s general framework to expand on the likenesses and differences she saw in individuals. Later, Briggs and her daughter, Isabel Briggs Myers, developed a personality inventory. Myers and Briggs did their original research in the 1940s and 50s when they began creating an indicator during World War II to help women entering the industrial workforce for the first time to identify the sort of war-time jobs where they would be most comfortable and effective (Myers & Myers, 1993).

The questionnaire, first published in 1962, has grown into the MBTI®, which captures the fundamental differences between people, differences that may lie at the root of the misunderstandings and miscommunication we experience every day. The assessment is a psychometric questionnaire designed to measure psychological preferences in how people perceive the world and make decisions. It focuses on normal populations and emphasizes the value of naturally occurring differences. The aim of Myers and Briggs was to make the insights of type theory accessible to individuals and groups to better understand and appreciate differences between people (Pearman & Albritton, 1997).

Consulting Psychologists Press Inc. (CPP), the publisher of the MBTI®, calls it the world’s most widely used personality assessment with as many as two million assessments administered annually. CPP states that the indicator meets or exceeds the reliability of other psychological instruments and cites reports of individual behavior (MBTI, n.d.). Because research is ongoing, users are provided with updated and new information about psychological type and its applications. The MBTI® instrument sorts for preferences and does not measure trait, ability, or character. The MBTI® tool is different from many other psychological instruments and also different from other personality tests. Hundreds of studies have proven the instrument to be both valid
and reliable. In other words, it measures what it says it does (validity) and produces the same results when given more than once (reliability) (Myers & McCaulley, 1985, pp. 164-170) and (Myers & Myers, 1993).

Myers coined the phrase “16 paths to excellence” to indicate that there are 16 different type codes that have their own development path through the type hierarchy. Theoretically, Myers believed that the primary task of type development in the first half of life is to develop a strong dominant and auxiliary function and a strong ego, which gives us a degree of consistency, predictability, and effectiveness for dealing with our life circumstances. In the second half of life, we turn our attention to those mental functions which have previously resided in the unconscious; we incorporate those parts of self that were previously neglected and unrealized. However, Myers believed that good type development can be achieved at any age, by anyone who cares to understand his or her own type; type development does not necessarily take place in a linear fashion, but is influenced by the environment and life’s circumstances as well. (The, n.d.).

“Like a watermark in fine stationery, type is embedded in the fabric of our personality. Our challenge is to remember to look for differences as part of our efforts to communicate with, motivate, and express our value for others” (Pearman & Albritton, 1997, p. 163).

Almost every human experience involves either perception or judgment and is played out into the world of action or of ideas. The purpose of the personality inventory is to make the theory of psychological types understandable and useful in people’s lives (Myers & McCaulley, 1985, p. 1). It is used for a variety of reasons ranging from self-understanding and development to team building, leadership development, education, coaching, and relationship counseling. It helps people to explore their preferences for taking in information and making decisions, identify where they prefer to focus their attention, and to clarify their preferred style of working and interacting with people.
The benefits of knowing your MBTI are threefold; psychological, sociological, and cosmological. How we live life, revel in it, destroy it, and play out our individual stories is where the true value of type resides. If we can improve our ability to work with others, we can contribute to the improvement of everyone. If we can teach children, young adults, and colleagues by example to communicate more effectively, develop more completely, and truly value others, then we are contributing to the welfare of us all. The lessons of type can help us achieve these goals if we will learn them and use them (Pearman & Albritton, 1997, p. 161).

First, the personal or psychological benefits of knowing what our favorite functions are improves our self-understanding. Most often our purpose in learning is to enhance our abilities to perform and produce, or simply to increase our satisfaction level. We learn what mental processes we access more easily and use best, and how our inferior function can be problematic. It helps us to gain a better understanding of why we behave as we do. The more familiar we become with how we think, the less we are apt to feel stuck in situations that are challenging or perplexing. We become more able, and have more tools, to adapt to challenges. When we choose to learn about ourselves, we are confronted with information about how our behavior and ideas affect those around us (Pearman & Albritton, 1997, p. 167).

Second, awareness of type has many sociological benefits that will help us to better understand others, and recognize, appreciate, and make use of the strengths of each person. Diversity becomes valued. As we learn more about ourselves and others types we become better communicators, and thus reduce conflict. We can create a climate where differences are seen as interesting and valuable, rather than problematic. In addition, it may improve our communication with others, and our conflict management. Tolerance and acceptance are worthwhile goals, and making even one small adjustment in your interactions will be worthwhile.

Third, the benefits of knowing MBTI are cosmological. Knowing personality type provides a path for personal development. Jung defined individuation as the lifelong journey of consciously becoming who we were
meant to be. Beginning with an understanding of our MBTI® type, there is a natural path or evolution to this journey of lifelong development. Jung believed that we have an innate urge to grow along our type-guided path; to go beyond ego to become the totality of all that we are. We can either ignore our innate urge toward growth, or help this development through our conscious awareness of the process. Individuation is about the lifelong journey from unconscious to conscious unity. The process requires the difficult work of becoming ever more familiar with our own personal psychology and looking deeply at our dreams, images, complexes, archetypes, and our shadow to help us incorporate these aspects of ourselves into our conscious knowing of who we are (The, n.d.).

In conclusion, the main benefit in using the MBTI® is its breadth of application. You can use it in almost any situation. The model can enhance your business and personal relationships, your team performance, your success in work or school and your personal growth and development. Personality type is one more tool to help you grow, achieve, and prosper in your life.
References


I. Problem Statement

I believe the purpose of education is to provide opportunities for humans to develop emotionally, physically, spiritually, and intellectually. Education should also offer knowledge, guidance, and feedback in order to help individuals reach their potential.

I believe that the vast majority of young children come to school with innate curiosity, a desire to learn, and, in general, are excited about school. Therefore, it is essential for teachers to provide a safe, predictable, stimulating, caring, and positive learning environment for all students. Likewise, it is important for teachers, and other school personnel, to be role models in how to make constructive choices and interact positively with others. In the arena of academics, it is vital for teachers to model essential skills and strategies first and then provide opportunities for students to practice these skills and strategies with guidance and feedback. Children also learn in a variety of ways, so it is critical to provide many different experiences and tap into as many learning styles as possible so that their individual learning needs are met.
Above all, students learn best when they know teachers care about them and have their best interest at heart. When students feel safe and supported, they can learn how to take healthy risks; create and meet goals; and be inspired to become life-long learners. I also believe students get more out of a lesson that is relevant, engaging, and interactive. Therefore, children need opportunities to discover, create, evaluate, and apply what they’re learning. They also need lots of occasions to share their own learning experiences with others.

Upon graduation, students should understand the power of knowledge and the importance of being a life-long learner. They should feel empowered to be good citizens, be problem solvers, contribute to the workforce, and set and reach their goals. They should also be aware of their strengths and weaknesses, yet possess the confidence to take risks. The end result of education should be that students feel prepared to be productive members of society.

Riverside Elementary is currently on academic watch, because it has not made its targeted Academic Yearly Progress goal for three years in a row. Therefore, a great deal of emphasis has been placed on providing teachers with solid, well-researched professional development in the areas of reading comprehension, writing, and problem solving. Currently the staff is receiving training in the Six Plus One Writing Traits developed by Culham (2005) and the Balanced Math Program created by Ainsworth and Christinson (2006).

With so much emphasis being placed on students’ scores for standardized tests, today’s teachers, more than ever before, need to identify methods which are effective in improving student performance. Since one of the most pressing needs of Riverside students is to become independent writers, I am exploring techniques to help first graders achieve this goal.

In both schools where I have taught, my professional development training in the area of writing has been primarily focused on the Culham’s (2005) Six Plus One Writing Traits and the use of Writer’s Workshop.
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Culham believes that teachers should use children’s literature in the format of mini-lessons in order to teach students the seven writing traits of ideas, organization, voice, word choice, sentence fluency, conventions, and presentation. Furthermore, children should be given criteria to be able to judge whether they are using these traits correctly in their own writing. However, I feel that something is missing.

As a writer, I have struggled. I edit as I write and have always seemed to get bogged down in getting it right the first time. I see some of my students struggling with the same issues: erasing constantly to get every word spelled correctly and the paper looking just right. Have I unintentionally modeled this? Our school’s writing benchmarks seem to focus on conventions and presentation. Is this influencing my students’ focus? How can I inspire them to take risks in their writing? How can I help them focus on their ideas rather than the way it looks on the paper?

During my undergraduate work, I read an interesting excerpt from a book by Atwell (1998). Derived from personal experiences as a writing teacher, this author concluded that writing instruction should follow the student, rather than the student following the writing instruction. However, if I am teaching the traits as Culham (2005) directs, am I allowing my instruction to meet my students’ writing needs? I have noticed that students who are better writers seem to be more focused on expressing their ideas rather than on their presentation. What if I focused my instruction on content and helped my students understand how to express their ideas in an organized manner? Would this close the achievement gap in writing? What do experts say are the essential components of good writing instruction?

II. Theoretical Framework

Prior to the 1970s, according to Smith (2000), elementary educators taught children how to write the alphabet, develop good penmanship, increase their vocabulary, spell correctly, diagram sentences properly, use punctuation appropriately, and structure effectively some basic types
of communication such as narratives, expositions, persuasions, and descriptions. Lessons typically included copying the teacher’s examples, completing fill-in-the-blank exercises, and putting encyclopedia information into one’s own words.

Simic (1994) said that once students reached high school, they were usually required to create compositions with little instruction on how to go about accomplishing the task. Emphasis was placed on the final product, and the grades that were given were based on neatness and how well the student used punctuation, grammar, and other conventions. Very little emphasis was placed on creativity, the student’s ability to communicate their ideas, or on the content of essays in general (Smith, 2000). However, for the past four decades, writing instruction has been moving away from the prior focus on the writer’s final product to an emphasis on the processes that expert writers use to create their products.

Writing process approaches prevail in every current textbook, writing curriculum, and all of the professional literature on writing (Smith, 2000). The latest research from exceptional writing educators such as Applebee (1981), Atwell (1998), Calkins (1994), and Graves (1994) all concur that when successfully implemented, the process approach leads to improvement in writing. A myriad of testimonies can be found from teachers who are using process approaches and seeing improvements in their students’ writing. I, however, will lay out six of the most important aspects of the current trends in process writing that professionals like Graves, Applebee, Atwell, Calkins, and Simic believe improve student writing and that elementary teachers are using with great success.

All of the experts agree that in order for the writing process to be taught effectively, students must write often (Simic, 1994). Often means every day. Writing does not have to take place in a language arts instructional unit, but children must write every day. Graves (1994), a Professor Emeritus at the University of New Hampshire and an author of several books on writing instruction, suggests setting aside enough time so that students have an opportunity to write at least four days a week. Experts
agree that if we practice something, it improves; therefore, it is the “practice” that will help students improve their writing.

Professionals concur that process writing must include **modeling**. This means that teachers need to write **with** their students often so that children can see how writers choose a topic, who they think their audience will be, why they are writing (their purpose), and what moves their thoughts from their head to their paper. To stress the importance of modeling, Graves (1994) contends:

> Students can go a lifetime and never see another person write, much less show them how to write. Yet it would be unheard of for an artist not to show her students how to use oils by painting on her own canvas, or for a ceramist not to demonstrate how to throw on a wheel and shape the material himself. Writing is a craft. It needs to be demonstrated to your students in your classroom, which is a studio, from choosing a topic to finishing a final draft. (p. 109-110)

Modeling for young children can include small sketches of a storyline (simple stick-figure drawings), and modeling for all elementary grades includes thinking out loud during one’s process so that children hear how **they** can think through their own process. Modeling for students not only helps children with their writing but it can also aid teachers in assessing the learning goals and writing assignments.

There is a wide consensus among the experts that students must be taught to **listen** to themselves. According to Graves (1994), children have been taught and know how to please their teachers, but they do not know how to **listen to their own inner voices**. Children need to become independent thinkers rather than looking to teachers to tell them what they should think. Calkins (1994) asserts that teachers often take over a student’s writing by making **suggestions** so that the text matches the teachers’ expectations. The piece begins to take the form the teacher has in mind rather than what
the student envisioned. Instead of becoming critical thinkers and readers, students have learned to rely on others to think for them.

Educators need to listen to their students to find out what it is they wish to say; after all, it is their work. One of the central roles a teacher has in helping children learn to write is to assist them in showing others what they know, to help them share their own experiences, to guide them in enlightening others regarding something they care about, to aid them in voicing their own ideas, and to show them how we will learn about ourselves through writing—not to train them to regurgitate what we, as teachers, know.

Calkins (1994) maintains that if teachers show their students how to listen to themselves, they will begin to write on their own. In addition, Calkins said that when teachers allow their students to choose their own topics, form, voice, and audience, their writing becomes personal rather than an assignment, and children will begin to take ownership and responsibility for their writing. One of Calkin’s students said it beautifully:

Sometimes, when I’ve had a really tough day and nothing seems to be going right, I think, “nothing is mine.” Well, my writing is. I can write it any way I want to. You know how your mother can tell you, “Go up to bed right now.” Nobody can tell you how to write your piece. You’re the mother of your story. (p. 6)

All researchers and teachers of process agree that in order for students to understand the purpose for writing, and in order to get their ideas across to their audience, conventions (grammar, punctuation, capitalization, spelling, and the other mechanics of writing) should not be the focus of the first draft. Instead, students should focus on the content and concentrate on helping their audience understand their story (idea). Then, according to Applebee (1981), when students feel their stories are clear and answer all of their audience’s questions, they can edit for conventions.
In addition, Graves (1995) says that when children are truly focused on conveying their own thoughts and ideas, they begin to understand that conventions are merely markers to help a reader understand a writer’s ideas. Furthermore, Applebee (1981) states, “errors are a natural part of learning and often indicate progress rather than mistakes” (p. 459). When we insist that our students produce neat and tidy first drafts, we destroy their opportunities to explore new ideas and to learn from the process. In other words, through the process of writing, children learn how conventions can help them say what they mean; and, if we make them get it right the first time, they miss-out on learning from the process.

To help children learn the conventions of writing, the different genres, and writing structures, teachers can develop mini-lessons. Mini-lessons provide a significant part of what professionals believe help children improve their writing more effectively in the process approach. When product was the focus, educators would work on conventions in a systematic fashion, whether the information was needed at the time or not. Mini-lessons, on the other hand, should be developed and delivered based on what students’ immediate needs are. For example, if students are having a hard time with introductions, teachers may want to read a couple of introductory paragraphs from a few books that have interesting introductions which entice students to want them to read further.

Lunsford (1997), a classroom teacher of first and second graders, shares interesting advice in “And They Wrote Happily Ever After”: Literature-Based Mini-Lessons in Writing, regarding the success students experienced when teachers read quality children’s books during mini-lessons. Using children’s literature helped students understand how successful authors begin an intriguing story, develop a story, use descriptive language, and end a story. Lunsford wrote a subsequent book entitled Literature-Based Mini-Lessons, for first through third grades, which provided a list of anchor books along with fifteen mini-lessons to teach the craft of each author.

According to Atwell (1998) and Graves (1995), whether or not a teacher meets with an individual, a small group, or the whole class, and what
is taught in the mini-lesson depends on the students’ current needs. The point of mini-lessons is to help children understand the reason for using conventions and other skills and to build a collection of tools to help them convey their ideas to their readers.

Both researchers and teachers of process agree on one final aspect of writing: In order to become more proficient writers, students must share their work. Calkins (1994) indicates that when students share their work, they begin to see themselves as authors. Poindexter and Oliver (1998) maintain that whether or not children publish their work, invite friends and relatives to a public reading, or merely have classmates read their final products, sharing helps students become aware of and develop sensitivity to an audience. Having the knowledge that their work will be shared increases students’ desire to do their best and improve their work.

Sharing also helps children learn from each other. In the National Writing Projects book Because Writing Matters, Nagin (2003) writes about a case study involving a fifth grade teacher who had his students complete five major writing projects to display at the end of the year. Not only were the children’s projects read by their classmates and school body, but the entire community was invited to come and read their work. The exhibit also included projects the students completed during their entire school career. The exhibit helped “motivate the students, emphasized metacognitive learning, increased student ownership of their work, and helped the teacher maintain high expectations for his students” (p. 80-82).

More importantly, however, writing allows writers to reveal a part of themselves; what they know, their ideas, their hopes, their dreams, and their disappointments. These revelations help writers discover the meaning of their experiences, which everyone has a yearning to express. Calkins (1994) quotes an inspiring passage by Francois Mauriac, “Each of us is like a desert, and a literary work is like a cry from the desert, or like a pigeon let loose with a message in its claws, or like a bottle thrown into the sea. The point is: to be heard—even if by one single person” (p. 10). Children love to share their
work. It is not unusual to be in a classroom of children who are writing and be asked, “Will you please read my story next?”

Writing often, modeling, listening, mini-lessons, focusing on content, and sharing are only six of the many successful trends in the current process approach. However, according to the experts and the many teachers who are already using the approach, these six are the most important concepts to help students begin to improve their writing immediately.

III. Applied to Subjects/Elaboration

The purpose of the intervention was to close my students’ achievement gap in writing by focusing instruction on content. Through mini-lessons, I wanted to help them understand how to express their ideas. By modeling how authors write about their own experiences, structure their thoughts, and use descriptive words, I strived to move my students away from worrying about mechanics such as grammar, punctuation, spelling, and presentation. The time allotment for the intervention was four weeks. I planned three weeks of lessons and allocated an additional week to allow for changes or additions in order to meet their needs. Twenty first graders participated in my study. Although I have twenty-two students in my class, two of the children did not take part in the pre-assessment, therefore they are not included as part of this study.

There are three major objectives that are addressed in my plan and two directly align with Indiana State Standards. The first objective was for students to develop confidence in writing about their own experiences. This objective directly correlates with standard 1.5.1 which states that first graders should be able to write narratives describing an experience. My second objective was for students to organize their story or topic with a beginning, middle, and end. The third objective was for students to use descriptive words to make their ideas clear and their story come alive which, according to the Indiana Department of Education standard 1.5.4 (2011), first graders should be able to do.
I chose five learning outcomes to help my students increase their writing skills in content criteria. I looked for a well-developed topic that is organized in a logical progression. The story needed to include a beginning that captured the reader's attention, a middle that included rich details, and an ending that brought the topic to a close. I also examined their use of descriptive words which indicated risk-taking and the use of words the student may not have known how to spell, but best conveyed the message. For the summative assessment, I used the same rubric used in the pre-assessment. For the formative assessment, I utilized conferencing to measure progress and provide feedback to help students reach their potential as writers.

I developed eight mini-lessons for my intervention. The focus for lessons one through three was for students to understand that good authors write stories based on what they know and care about: their own experiences. The emphasis in lessons four and five were placed on how authors organize their story or topic with a beginning, middle, and end. In lessons six through eight, the importance of using descriptive words to make their ideas clear were stressed. I was the one who modeled the writing process in lessons one, two, four, five, seven, and eight. I shared how I arrived at choosing the experience I wanted to write about. I also drew stick figures as I “told” them about the experience, and I clearly showed the students, through my stick-figure organizational chart, the beginning, middle, and end of my story. Then I asked them to retell my story as I wrote it. However, during the third lesson my students viewed a BrainPOP (2011) video to learn how author, Cynthia Rylant, writes books based on her own experiences as a child. In lesson six I used Patricia Palacco’s (1997) story entitled, Thunder Cake to show how authors use their five senses to describe an experience. After each lesson, the children had an opportunity to write about their own experiences or chosen topics while I conferenced with individual or groups of students to offer feedback and additional instruction.

On September 9, 2011, my students were asked to write a short story describing an experience that was real or imagined. A rubric was used to assess, on a scale of one to four, whether or not the students wrote a well-
developed topic that included a beginning, middle, and end. It also examined their use of varied words to fully describe events, people, or places. On November 18, 2011, students were asked to write a story based on another experience that was real or imagined and the same rubric was used to determine whether or not the intervention was successful.

IV. Data Analysis

This study addressed three major objectives. The first objective was for students to develop confidence in writing about their own experiences. The second was for students to organize their story or topic with a beginning, middle, and end. The third objective was for students to use descriptive words to make their ideas clear and their story come alive. Utilizing the advice of writing educators such as Graves (1998), Applebee (1981), Atwell (1998), Calkins (1994), and Lunsford (1997), my intervention included mini-lessons that were focused on content. These mini-lessons, using teacher modeling and children's picture books, were designed to show-not-tell students how authors wrote about their own experiences; organized their stories; and used descriptive words to make their stories appealing. Five criteria were used to measure the success of the intervention: a well-developed topic organized in a logical progression, a beginning that captured the reader’s attention, a middle that included rich details, an ending that brought the topic to a close, and the use of descriptive words that best conveyed the writer’s message.

In looking at the results of the post-assessment, it is noted that one hundred percent of my students increased their total content scores (Figure 1). Overall, the class achieved a fifty-six percent increase. In addition, the mean score improved from 1.56 to 2.43, the median increased from 1.6 to 2.3, and the mode went from 1.6 (and 1.0) to 2.2. This data implies that students made significant progress and the intervention was successful.
Further analysis indicates that the largest gains were achieved in the criterion of descriptive word usage (96%), and in both the criteria areas of middle (60%) and beginnings (53%) of students’ stories (Figure 2). This data implies that the instruction provided in these criteria met students’ needs. I believe that the emphasis placed on writing about personal experiences and using descriptive language, as well as providing strategies to write effective beginnings, helped the children achieve this success. However, the data also suggests that on-going modeling and further mini-lessons may be needed in both the criteria areas of organization and endings (36% increases) so that additional growth can be obtained in these areas.
The results show all three objectives of the study were met. Students did develop confidence in writing about their own experiences which is evident by the increase of fifty-six percent in their overall content scores. Students were also able to organize their story. Although the beginning and middle of their stories were stronger because mini-lessons were given in these areas, their scores increased in the criteria of organization and story endings as well. Lastly, it is very clear that the children did use descriptive words to convey their messages. The most significant increase, ninety-six percent, was realized in this criterion.

V. Reflection of Study

In early September, the children in my classroom had scored higher on the conventions criteria than they did on the content criteria of their district-wide writing assessments. Therefore, the central question for my research became, “What if I focused my instruction on content?” The answers came by reading the works of exceptional writing educators such as Graves (1998), Applebee (1981), Atwell (1998), and Calkins (1994), who revealed that focusing on content would prove to be instrumental in improving my students’ writing. These experts also provided guidance in my selection of modeling and mini-lessons for the methods of instruction. Their recommendations were spot on. As a result of focusing on content through modeling and mini-lessons, every child in my classroom scored higher on the content criteria portion of their post-assessment. The class average increased fifty-six percent.

The second half of the question, “What if I… helped my students understand how to express their ideas in an organized manner?” was, again, addressed in my intervention through mini-lessons and modeling. Although there were increases in all the criteria of organization (beginning, middle, and end) the increases in organization and story endings were not as substantial. I believe this is due to the fact that my intervention was too broad and included more criteria than could be addressed in the allotted time. Additionally, children need explicit instruction on how to write good beginnings and
endings. Scores for beginnings were a lot stronger than those for endings. I believe this is because I explicitly taught and showed them three strategies that authors use to make beginnings more interesting. There wasn't time to include mini-lessons on endings.

Another question posed in my research was, “How can I inspire my students to take risks in their writing?” Advice from Graves (1994) and Calkins (1994), suggesting that I help children learn to listen to themselves and say “it” how they wanted – right or wrong, proved to be helpful. In conferences, I challenged my students to use their senses, utilizing the word that came to their mind, even if they weren't sure it was the correct one, or the correct spelling. Some of their risks included the words destrbd (disturbed), awsum (awesome), ottomotopea (onomatopoeia), and stillish (stylish). As a result, eighteen out of twenty students increased their score on using descriptive words and the class average increased ninety-six percent.

Through the intervention, the final question I sought to answer was, “Would instruction focused on content close my students’ achievement gap in writing?” Although I am very pleased that the highest gains were achieved by some of the students who scored lowest on the pre-assessment, the intervention did not close their achievement gap in writing. The gap between the highest and lowest scores (1.8) remained the same. I am very interested to learn if the gap narrows as I continue to focus my writing instruction on content. I believe the end-of-the-year writing assessment data will show this to be true.

I am very pleased with the results of the intervention. The research by Graves (1998), Applebee (1981), Atwell (1998), and Calkins (1994), which stated that focusing on content improves children’s writing, proved to be spot on. I know that writing skills are honed over one’s lifetime. Therefore, the purpose of this study was not for students to master the five content criteria (organization, beginning, middle, end, descriptive language), but to move away from worrying about how their story looked, and instead, focus on what their story said. After one of my students read his paper to a
classmate and the classmate summarized the story, he said, “Good, that’s what I was trying to say.” This testimonial told me that my study accomplished its intended purpose. I plan to continue to design mini-lessons that focus on content, using teacher modeling and author’s trade books, to help my students continue to polish their skills and become proficient writers.
References


Schema and Reading Comprehension: A Teacher-Research Project

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Problem Statement

I believe there are many purposes to education and it can vary depending on the grade, school system, day, month, or year. However, I think the overall purpose of education is to create life-long learners and students who will someday become productive members of society in the future. In every lesson taught, teachers should be trying to build and instill in students a curiosity that will continue as they mature. We want to develop critical thinkers, questioners, and problem solvers. When that is our overall focus, we are also helping to create future members of society that can have a great impact on the world around them. In my own classroom, I do this by having very high expectations for my students. I value each of them and strive to create a climate where each student feels free to make mistakes and has the possibility to be successful. We work through issues and talk out problems. I model respect and expect that they respect and honor each other. I believe students learn best when they are able to share and be actively engaged in classroom
activities. We do many activities where students ask questions, work together to problem solve, and reflect. I believe the content and knowledge gained is more meaningful if they come to their own conclusions. I believe it is important that each child be looked at as an individual and know they will all learn differently. I strive to meet the needs of all my learners by using a variety of teaching approaches and differentiating my instruction for those who need it.

I currently teach a second grade class at Christian Academy of Louisville Southwest. We are a small private school within the Christian Academy School System. We do not have any children on a free or reduced lunch plan; a majority of my students come from upper-middle class incomes. In the school where I work it is not very diverse. I have twenty-two students, thirteen girls and nine boys. Of those twenty-two, one is African American and one is Middle Eastern, the other twenty students are Caucasian. I personally love teaching and working with these students. I have a passion for teaching reading, as I feel it is one of the most foundational components a teacher can teach. I enjoy watching my students get immersed in a book and try to instill in them a love for reading.

Over the past four years I have been studying best practices in reading. During that time, I have found some differences in the way our reading curriculum and instruction take place with what is considered best practices. As I reviewed my test scores from the previous year, I found many of my students struggled with higher level comprehension questions. As I wrote out my personal improvement goals I noted that need as one I really wanted to focus on.

When conducting my research, I used my class of twenty-two students who are all at varying reading levels. Many activities were done as whole class activities, mini-lessons, or in our small leveled reading groups. I used a variety of assessments to collect data throughout my research. Many of my assessments were formative; class or group discussions, anecdotal notes, graphic organizers, and observations. I used Keene’s (2001) summative assessment to assess their knowledge and understanding of schema called the Major Point Interview for Readers (MPIR). As we discussed the use of
schema during our reading time and throughout the year, students were still being given our normal reading comprehension assessments. I compared results from their first comprehension assessment with those conducted after teaching the skill of using schema. Students were still reading texts at their level and of their choosing throughout this study and met in small groups to discuss things like characters and story structure. I had found that many of our students were not able to make connections (or use their schema) when reading. They were not utilizing their schema which is a foundational skill for inferring, questioning, or determining importance. I chose to research on if teaching my students to recognize and use their schema will help their comprehension in stories and set the groundwork for them to be able to use those higher level thinking skills as they read. For that reason, I have chosen to research if activating schema (or making connections) assists in student's comprehension of a story.

**Research Literature**

Comprehension is the reason for reading. How best to teach students to comprehend and what reading comprehension is, is another question. In a classic study, Durkin (1978/1979) showed that the vast majority of what passed for comprehension instruction was really assessment. According to McCormack and Pasquerilli (2010), “From the 1980’s to the 1990’s, researchers focused their attention on reading comprehension. This new research now informs our comprehension instruction practice” (p. 115). According to Guthrie (as cited in Scharlach, 2008),“one of the most well-established findings in reading research is that comprehension develops through a variety of purposeful, motivated reading activities. By fostering students to become active, engaged readers, teachers enable them to gain competence and a sense of self-efficacy” (p. 20). So, in order to have students comprehend they must be thinking and engaged as they read. Keene (2010) identifies seven key reading comprehension strategies good readers use: monitor for meaning, use schema, infer, ask questions, create images, determine importance, synthesize. In my classroom, I focused specifically on the use of schema and its effects on reading comprehension.
To begin we must first look more deeply into what comprehension is, what schema is, and the history of schema theory. We know it is more than simply being able to recall information or skill and drill activities. It requires thinking and engagement with the text. Yang (2006) writes “Since the 1970’s reading comprehension has no longer been considered as a static passive process in decoding words and recoding meanings of individual words or phrases. Instead, reading comprehension has been deemed as an active, dynamic, and growing process” (p. 314). Many factors affect a reader’s comprehension of the text. Some such factors are learner interests or motivation, background knowledge, strategy knowledge, reading tasks, and rigors of texts all affect reading comprehension (McCormack & Pasquerilli, 2010). Boulware-Gooden, Carreker, Thornhill, and Joshi (2007) state that: “Some teachers may assume that reading comprehension will develop naturally without any direct teaching of comprehension” (p. 71). However they argue, “…reading instruction does not end when students can decode the words…They continue to need instruction that will support their understanding of what they are reading” (p. 71). So, there are also best practices teachers can utilize to ensure students attain comprehension of the text. Keene (2010) writes, “we must think aloud about our own comprehension processes and give students tools they can use in new reading situations” (p. 72). Schema, or prior knowledge and experiences, is one tool teachers can utilize in the classroom to assist in comprehension. Little and Box (2011) write: “This learning theory views organized knowledge as an elaborate network or storage system of abstract mental structures that represent an individual’s understanding of concepts related to experiences and knowledge” (p. 24). Looking at schema theory McVee, Dunsmore, and Gavelek (2005) found “Schema was also the central meditational construct in Jean Piaget’s structural theory of the origins and development of cognition” (p. 536). However, they go on to note that “early definitions of schema theory, for example, presented schemas as fixed, rigid structures…but, such rigid definitions were quickly revised to include more loosely defined structures” (p. 538). Little and Box (2011) report, “Research by schema theorist indicates that abstract concepts are best understood after a prior foundation of concrete, relevant information related to the major concepts to be studied has
been established” (p. 25). In the following paragraphs, we will look more in detail about how schema affects a reader’s comprehension.

Much research has been done in the past few decades on the need for explicit instruction on good reading strategies to enhance comprehension. Eilers and Pinkly (2006) state, “Research indicates that instruction in metacognitive strategies improves students’ reading comprehension. Studies have shown that students who use metacognitive strategies while they read become better readers and more clearly comprehend what they read” (p. 14). Ornstein, Pajak, and Ornstein (2011) write, “What distinguishes us as humans is our capacity for metacognition- the ability to stand back and examine our own thoughts while we engage in them” (p. 232). In the study by Scharlach (2008), she researched the effectiveness of an instructional framework designed to model and scaffold the use of metacognitive reading strategies among third grade students. She focused on the strategies of making predictions and connections, constructing mental images, and asking questions. From her research she determined the students in the classrooms that received the strategy instruction made significantly higher reading gains in comprehension compared to those students who did not. The need for explicit instruction of strategies is clear. Eilers and Pinkly (2006) also found that, explicit instruction of the strategies used in their study followed a common pattern: introduction of strategy, modeling of the strategy in a whole group setting, small group practice, modeling the use of a graphic organizer in a whole group setting, small group guided practice, and whole group independent practice. The results of their study found that explicit instruction of metacognitive strategies are effective instructional methods and improved the first grade students reading comprehension scores (p. 27). Zimmerman and Keene (2007) remind us that “metacognitive strategies are tools. They are a means to an end-comprehension - not an end in themselves” (p. 43).

In Eilers and Pinkly’s study (2006) on how metacognitive strategies help all students comprehend text, they looked specifically at the schema or connections students were making when reading. They found “a genuine use
of prior knowledge in making text-to-self, text, and world connections that enhanced student understanding of what was being read” (p. 27). Little and Box (2011) found similar findings in their more recent study. “In essence, a reader’s prior knowledge and experiences about events, concepts, vocabulary, and objects described in a text passage can have significant influence on the meaning the student obtains from the text passage” (p. 26). For this study, we will be looking specifically at how the use of schema can enhance comprehension.

In conclusion, we see that research has shown the need for instruction of specific reading strategies that will help students be engaged in reading tasks and assist in comprehension. We know that readers understand text better when they are able to make connections and utilize their schema when reading. It is imperative then that teacher’s assist students in identifying their schema, and also provide opportunities where students can build schema about a related topic. Since every student will have varying levels of schema on a topic, to assist in comprehension, it is important to provide students with opportunities and experiences that will assist in comprehension. McVee, Dunsmore, and Gavekek (2005) put it this way, “schema theory must also include specific attention to the role of cultural material and activity, and that teachers must attend to both” (p. 554). Zimmerman and Keene (2007) warn against simply asking basic questions prior to reading, simply to help children recall information they already know. Instead, it is important to allow children to discuss and activate existing knowledge or create new background knowledge. They state “children are far more likely to retain and reapply information if they think about what they already know related to the new information” (p. 72). When teachers are truly teaching schema it is more than just reading. It is teaching them how to understand, how to remember, and how to use their current knowledge in new contexts.

**Applied to Subjects/Elaboration**

The purpose and design of my instruction was to begin by teaching my students what schema was so that they would then be
able to apply that knowledge when reading independently. Once my students had this foundational knowledge they would then be able to use their schema when reading to help them comprehend stories. My instruction on schema was approximately a month long study, and all twenty-two students in my second grade class were involved. Each student was given a pre-assessment, participated in daily reading activities and discussions, and given a post-assessment. Most of my students are currently at or above their instructional level. My goal with this study was to help them comprehend more and become more engaged with their texts.

The study of schema is not a specific standard for second grade, many of the activities we did in class met many of the common core language arts standards. From this study, I hope that my students are now able to read and comprehend literature in the second to third grade range. I believe this study also helped my students acknowledge differences in characters and develop greater understanding for the characters in their stories as they were asked to make text-to-self connections with them. Students also had multiple opportunities to meet the speaking and listening standards by participating in our class or small group discussions, and being able to recall and describe key ideas from their books.

Throughout the whole study, my hope was that my students would first be able to identify their own schema when reading and be able to make connections with the stories they were reading. I also wanted them to have an understanding of how using schema helps them become better readers. I began by seeing what my students already knew about using schema and why it was important using the MPIR assessment and rubric and a read aloud text. I evaluated where my students were according to the rubric and developed my lessons geared for their needs. After my instruction, I gave my students another MPIR assessment and scored it using the same rubric, but with a different read aloud text. I hoped to see growth in their understanding
of schema instruction and understanding of why it is a valuable tool that good readers use.

Over the course of the month long study, I taught multiple lessons and modeled multiple ways of thinking. I tried to give ample time for my students to practice using the skill before introducing a new concept. The first key lesson I taught was a schema introduction activity. Students told me all the things that made them unique and special while I wrote the list on our Smartboard. Using those things that made us unique, I gave students a definition of schema as their own background knowledge or experiences that make them who they are. To demonstrate this definition I wrote down some special experiences I have had on strips of paper. I showed the students a lint roller and explained to them that our experiences stick in our brain and become our schema. The second key lesson I taught built on this knowledge of schema. I demonstrated to the students that they have schema about a topic. Using a T-chart on the Smartboard, I gave the class a topic I knew they would have a lot of knowledge about and a minute to shout out everything they could think of. Once time was up, I gave them another topic, one they did not know much about and another minute to say what they knew. Afterwards, we looked at each list of things and were able to determine which topic we had more schema about. We discussed how having more schema might impact our reading. Once students had an understanding of what schema was, we then began talking about the different types of connections that can be made when reading. We started with text-to-self connections. I modeled this type of connection with a think-aloud. Students also had an opportunity to listen to a song and reflect on their own connections and share them. Students made a model using die-cutes of text-to-self. After this lesson, students had multiple days to read in their leveled texts and look for text-to-self connections. Once I felt students had an understanding of text-to-self connections we went on to text-to-text connections. Students again listened to a think-aloud while I modeled making text-to text connections between two stories. Students then
used a T-chart to compare two stories and make connections. Students again had multiple days to read and practice this skill. The final lesson I taught showed that schema changes as we read. To begin, I started by explaining that our brain is like a file cabinet and stores a lot of information about different topics depending on the schema we have had. I asked students to identify their schema about why leaves change color. They listened as I read them a text that answered the question asked. After we read, we looked at the schema and determined if it was wrong, needed to be taken out, adapted, or if it was confirmed. We then discussed why being able to change our schema is important to do when reading.

Students were given a pre-test prior to instruction using the MPIR assessment and rubric. Throughout the lessons, I constantly assessed my students understanding of the skill. They demonstrated their ability to make connections using sticky notes when reading independently. They were actively engaged in discussions with the whole class, small groups, and partners. I also kept anecdotal notes about what I observed from reading groups and discussions. I used the same MPIR assessment at the end of our study to see if there was any growth in their understanding of schema. At the end of our unit, I also gave students a reading exam to determine if the scores had improved compared with the scores of the first reading exam which occurred prior to the schema instruction.

Data Analysis

After implementing my instructional design I took the data from various sources to analyze my instruction. Prior to any instruction students were given the MPIR schema assessment to see what they already knew. Various formative and summative assessments were given during instruction the help me know what students understood and where there was still confusion. After the study was complete, students were given the MPIR assessment with a different text as a
post-assessment to determine growth from this study. This project showed that using schema is helpful in comprehending a story.

When using the pre-assessment data, I used a five point rubric to score the students responses. The average score of my students was a 1.95/5 prior to any instruction. Some students could relate the story to their own lives, however, most could not. Only one student could explain schema and was able to describe how it would be a helpful skill for readers. Below is a chart of the rubric used and the number of scores on the pre-assessment:

<table>
<thead>
<tr>
<th>Rubric</th>
<th>Number of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- No response/ Schematic Connection</td>
<td>1</td>
</tr>
<tr>
<td>2- Can talk about what text reminds him of, but cannot explain; reference to schema may not be clearly connected to the text</td>
<td>8</td>
</tr>
<tr>
<td>3- Relates background knowledge/experiences to text</td>
<td>7</td>
</tr>
<tr>
<td>4- Expands interpretation of text using schema....</td>
<td></td>
</tr>
<tr>
<td>5- Explains how schema enriches interpretation of text....</td>
<td>1</td>
</tr>
</tbody>
</table>

From this data, I determined that students first needed instruction on what schema is followed with instruction on how to use it.

Once students had an initial understanding of what schema was: the lessons then covered making connections to stories. Each day, in guided reading groups, students would make a character connection. Students created a graphic organizer about the character in their story and chose a character trait to describe their character. They were then asked to connect to their character based on the appearance, actions, dialogue, thoughts or feelings, or the character trait. Following the third lesson all students were able to make a text-to-self connection with their character. After lesson four some students progressed to making text-to-text connections with their characters.
where they related their character to another book’s character. Given many days of practice, students were able to make meaningful text-to-self connections and basic text-to-text connections. Students did not make many text-to-world connections or use that knowledge to infer or generate questions. During guided reading groups, I observed that students enjoyed sharing their connections. Students who did not typically actively participate in group were excited to share their personal connections with the stories.

After instruction, students were given the post-assessment which followed the same format and used the same scoring rubric as the pre-assessment. The average score of the post-assessment increased to 3.68/5, a 1.73 increase. All students were able to make meaningful connections and ten students were able to take it further by describing how using schema helps them be better readers or how it helps them understand other stories. When comparing individual student scores fifteen of the twenty-one students given the post-assessment improved by a point or more. Below is a graph showing the differences in the pre-assessment and the post-assessment scores according the rubric.

Comparing the Pre-Assessment scores and the Post-Assessment:
Through the study, it became evident that a student’s ability to make connections with a text is imperative to their understanding of the story. As students began making these connections, or using their schema, their participation in guided reading groups improved, their understanding of what it means to be a better reader improved, and the overall comprehension scores of the class improved. The overall reading grades were averaged for all of the student’s in my class and, as a whole, their reading grade improved from 90% to 92% after completing our specific study. I found it an important task to teach students how to make those connections. I had assumed that my students knew how to do it, but after giving the pre-assessment it was apparent that they did not and they needed explicit instruction on how to make connections and use their schema to enhance comprehension.

Reflection of Study

After reviewing my data, analyzing it, and watching a video of myself teaching; I have found that my study was able to answer my research question. I found that students that know what schema is and are able to use it when reading are better able to comprehend a story. I also discovered that my findings were similar to those I researched prior to implementing my instruction. I, like Guthrie (as cited in Scharlach, 2008), found in my study that when my students were purposefully making these connections they were more engaged and their comprehension improved. I also found that when I spent time explicitly teaching the skill to my students their overall comprehension was enhanced; this agrees with Eilers and Pinkly (2006) findings from their own study. Throughout my instruction, I followed a similar pattern Eilers and Pinkly used in their study. I started with teacher modeling the use of the skill, followed by student led whole group activities, then guided practice, daily small group practice, and independent activities. By following this pattern, I was able to see my students make gains in their ability to make text-to-self connections. They also were more engaged in their reading activities. I do think my
students needed more opportunities and more guided practice with text-to-text and text-to-world connections. I would like to provide my students with continued instruction in these areas. I also want students to be able to practice making connections with non-fiction texts. For students who were able to make those connections, I would like to extend their thinking into why using our schema will help us infer, generate questions, or change what we thought we knew. One of the most challenging aspects of this study was time. I was balancing additional instruction with our typical reading lessons. I would have liked to have extended the study to longer than a month to really build more on those text-to-text or text-to-world connections. I also had some difficulty choosing texts that my students would all have schema for and be able to relate to. However, despite those challenges I was very pleased with the overall results of the study and the thinking my students engaged in. I plan on continuing to review what has already been covered and also build on this foundation for the remainder of the school year.
References


THE CONFLICT OF CHANGE

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Abstract

In this paper I will review how organizational culture can influence and sometimes prohibit change. I will provide a brief history of Looking Forward Lighting Company (name changed to maintain anonymity) and its current culture, as well as describe the systemic change that was to be implemented. I will provide a current reality tree and cloud diagram that defines the root causes of the failed change as well as provide the system archetype that is at work within the organization. Finally, I will recommend what behaviors to change as well as how to change them. The hope is that this paper will provide an alternative approach for implementation should the company decide to attempt this change again.

The Conflict of Change

Looking Forward Lighting Company (LFL) is a mid-sized company with its world headquarters in Indiana, USA and a smaller manufacturing facility in Queretaro, Mexico. Like most companies, they strive to grow and improve so they can continue to gain market share and ensure the profitable future of the company. Also, like many companies, attempts to make systemic changes are difficult and sometimes in the end are not fully adopted or even rejected.

This paper will review the background of the company, the culture of the workforce and how those impact the success or failure of systemic
changes. The failure of the attempted implementation of the 5-why root cause methodology within the hourly ranks will be analyzed and a solution recommended.

Background

Company Overview

LFL manufactures exterior automotive lighting products (headlamps and tail lamps) for most of today’s automobile manufacturers. LFL is a 50/50 joint venture between one of the largest automotive parts manufacturers in the world, based out of France, and an automotive light source manufacturer based out of Germany. LFL is located in a small mid-west city that has several other employers of similar size providing other employment opportunities to the local workforce. LFL is a non-union facility that has been in business for over thirty years although the joint venture has only been in place for the past thirteen years.

LFL uses a cost based accounting structure with measurable standards that focus on keeping operating variance to a minimum, with a goal of zero variance. According to Tracy Willis in the article *Evidence that sticks* (p. 45), “[m]etrics designed in the absence of process knowledge undoubtedly cost companies millions of dollars every year. This loss is not the result of poor technology, insufficient training or unreasonable customer demands. It is a self-imposed management strategy driven by poor process knowledge.” In the particular case of LFL, metrics focused on an outdated cost based system that no longer accurately depict the manufacturing processes of the dynamic products LFL produces results in managers focusing on activities that have little or no impact on long-term profitability.

Management

LFL has a handful of core operational managers and supervisors that have at least ten years service to the company. To put things into perspective,
however, the Director of Operations has only six years with LFL which is twice that of his last several predecessors. There is high turnover in the supervisor and operations management ranks due to better work/life balance and pay opportunities from other local employers. LFL is also within one hour of two major cities offering more employment options with the pay that accompanies larger cities.

LFL generally does not promote from within due to the issues that would be faced by a new supervisor managing a group of employees that he worked side by side with for fifteen years or more. Therefore, LFL continually has to recruit from outside the organization and compete with other local employers for limited human resources.

**Hourly Employee Culture**

The average seniority of the LFL work force is around fifteen years. Most of the turnover occurs within the first five years of employment.

Although LFL is a non-union facility, many of the policies mirror those of union run shops. The one policy that influences the employee culture most is the “bid and bump” practice followed when higher paid positions are filled or lay-offs must occur. Seniority is the primary determining factor of eligibility for any position above entry level. Seniority is also the only determining factor for lay-offs (e.g. last in, first out). There is a complex set of rules for initiating the bid and bump policy which hourly employees generally know better than their managers.

The combination of this policy along with the average seniority of the work force has resulted in the condition where the ability to move into a position beyond entry level generally requires many years of seniority (often times over a decade). The exception is jobs that are particularly undesirable to our aging workforce (i.e. working in a dirty environment, confined environment, etc.). Unfortunately, most of the performance indicators in non-entry level positions are ambiguous at best which makes it nearly
impossible to demote a person that is not meeting the manager’s expectations or does not have the required skills to perform the job adequately.

**The Challenge**

Organizations generally have formal and informal leaders. Due to the high seniority of the hourly workforce and low years of service of most of the management staff, LFL has found itself with many informal leaders among the hourly ranks.

The hourly workforce has seen many managers come and go which has created a culture where they turn to the informal leaders within their own ranks. Along with that, they have seen many new ideas come and go with the ever rotating management staff. This has resulted in a culture where the hourly employees believe if they just wait out a new idea long enough it will go away on its own and they can continue business as usual. This has resulted in the situation where the new approach may lead to better results in the long-run, but widespread adoption never occurs (Senge, p. 163).

The results are an organizational culture that is paralyzed. Out of frustration, LFL occasionally identifies “change agents” within the organization and asks them to tear down the barriers to change. This often leads to situations where discipline and rewards are used to affect the change which generally creates results that are not sustainable. If we were to listen to Van de Ven and Sun (p. 58), as change agents we should be revising our mental models to reflect the course of the journey the organization needs to take to implement real change rather than taking action to force conformity from people and processes to fit our mental models of change.

The concern with the stagnation LFL is enduring is that companies must be able to change to survive. Organizations of today derive much of their competitive advantage from being agile enough to act on the signals of change that will impact their organizations (Reeves and Deimler, P. 137).
The System

LFL’s parent company in France has developed its own manufacturing lean systems based on the Toyota Production System. At the foundation of this system is the ability to diagnose and permanently solve problems at all levels of the organization.

This lean manufacturing system uses the 5-Why methodology to find the root cause of problems which is assumed to ensure the solution implemented keeps the problem from reoccurring. The more complex issues are handled by management. The hourly employees are supposed to use the 5-Whys to resolve issues that impact their ability to meet their quality and productivity targets. The thought is that hourly employees can apply their direct knowledge of the problem symptoms and propose solutions once the root cause is determined. This will in turn reduce non-production time in the future by preventing the problem from occurring again, which will improve output and reduce labor costs. According to Willis (p. 49), 5-whys have a tendency to place blame on the person closest to the problem which is a concern LFL is particularly in-tune with. In fact, no 5-whys are allowed to follow the line of logic that somebody didn’t do what they were supposed to do “just because.” As managers, we are expected to figure out why (i.e. employee was not feeling well, instructions were not clear, lighting was insufficient, machine was not functioning correctly, poke-yoke system was missing, etc.).

All employees receive formal training and continued coaching on the application of 5-Whys. Supervisors generally train the hourly employees with intensive training and a higher level of coaching targeted at team leaders who are in turn expected to insure the integrity of the application of the 5-Why methodology with their assigned teams.

The Failure

Although a lot of time was invested in training and coaching, the application of the 5-Why methodology by assembly line operators was
inconsistent at best with even the most adept lines falling far short of expectation. Assembly line operators either refused to fill out their 5-Why charts or authored unreasonable lines of logic that provided no possible solution. Some groups even went so far as to “hurry up” to increase output to mask the line issues so they would not have to complete a 5-Why chart. It became obvious the operators did not value the tool. Peter Senge tells us that the active force of any organization is its people who have their own will and their own minds. If they are not sufficiently motivated, there can be no productivity improvements (p.129-130).

As poor as assembly line 5-Why implementation was, molding and coating implementation was almost non-existent even after several attempts. Most molding and coating problems are more complex and require technical experts to complete the root cause analysis.

It is my personal experience that practice is the only thing that makes 5-whys easier to use and most effective. Unfortunately, with all our efforts, we still failed. After several audits by one of our parent organizations, the recommendation was made to eliminate the 5-Why charts and just ask operators to identify what they believe the root cause to be. Within a week we had new forms posted and retrained to the revised, albeit lower, expectations. We started passing our audits, but we did not see improvements in the shop floor disruptions associated with equipment downtime and component quality failures.

**Understanding the Problem**

The tools that will be used to understand this problem, identify the root cause, and understand leverage points for change are the current reality tree, conflict cloud diagram, and archetype diagram.

The first step in applying a current reality tree (CRT) for root cause analysis is to identify a key list of undesirable effects (UDEs). These can then be linked through the use of a CRT to understand the single (or couple) true root cause(s) of all the problem symptoms.
UDEs

1. Assembly operators generally do not write answers to 5-Whys on their production boards when issues that interrupt the production process occur.

2. Reoccurring equipment problems frequently interrupt the assembly production process.

3. Reoccurring component quality problems frequently interrupt the assembly production process.

4. Assembly operators are paid overtime to meet production targets.

5. Production targets take longer to achieve than scheduled.

6. Assembly operators are required to work until daily production targets are met.

7. Operations management’s primary goal is to achieve the daily assembly production schedule.

8. When assembly operators do document answers to 5-Whys, the logic is insufficient and generally does not pinpoint a root cause that can be resolved (i.e. machine broke).

9. Assembly operators do not know when they will be able to leave each day.

10. Molding/coating operators experience no consequences for sending poor quality components to the assembly lines.

Root Cause

We can see from the currently reality tree in Appendix A that the focus of management on meeting daily assembly production targets is causing a lot of activities that detract from permanent problem resolution by all parties.
involved. Without knowing it, the management team has set up a system that promotes the failure of this continuous improvement tool (5-why root cause analysis).

**Cloud Diagram**

Cloud diagrams can be used to help understand conflicts that occur when trying to achieve an objective. It is apparent from the cloud diagram below that the conflict here is an opposite conditions conflict. One path promotes continuous improvement and long-term cost reduction (A-C-E). The conflicting path requires hourly employees minimize their time spent doing anything except manufacturing product (A-B-C). This path provides short-term benefit by not investing in the cost of paying operators to do root cause analysis and work overtime until problems that interrupt production diminish over time. This is a short-sighted action. Most often long-term solutions create short-term efficiency impacts (operating variance) while short-term improvements are not sustainable and erode over time. Management’s focus on only achieving the objective without how the objective is achieved is allowing the latter path to continue to gain dominance on the shop floor.
Objective

A
Operating variance = 0.

B
Hours paid = standard hours earned.

C
Continuously improve.

D
Minimize time spent doing anything that does not produce a part.

E
Solve systemic problems that cause production deviations using 5-why root cause methodology.

Cloud Diagram Assumptions

A-B
1. Labor variance is a component of operating variance.
2. Standard hours cannot be adjusted to account for time spent on core problem resolution.
3. Controlling labor costs is the easiest component of operating variance to control.

B-D
1. Only producing a part generates standard.
2. Actions taken from root cause analysis will not decrease hours paid.
3. Actions taken from root cause analysis will not increase hours earned.
A-C
1. Process improvements positively impact operating variance.
2. It takes more effort to impact operating variance with continuous improvement actions than other leverage points.
3. Without continuous improvement activities, LFL must find other methods to reduce/control costs for market competitiveness.

C-E
1. Continuous improvement can only be achieved with identification and resolution of root problems.
2. Without root cause analysis only symptoms are treated.
3. Root problems can only be discovered with analysis.

D-E
1. Root cause analysis is an investment in the future that ensures problems are permanently eliminated and not allowed to reoccur.
2. The use of 5-whys is the best root cause method for assembly operators to use.
3. 5-why root cause analysis takes time away from production that causes labor variance and therefore operating variance which are undesirable to LFL management.
4. If operators spend time doing root cause analysis, they must work overtime to recover the production target or customer shipments cannot be met.
Archetype

The archetype in effect here is Drifting Goals. In this archetype, there is a gap between the current situation and the desired situation. There are only two options for improving the gap. Reduce the goal closer to reality or understand what is prohibiting the organization from achieving its goal. The pressure to perform often results in pressure to adjust the goal. These two “balancing acts” conflict; and often result in a deteriorating situation (Bellinger, pp. 7-8). According to Bill Braun in The Dynamics of the Eroding Goals Archetype (pp. 9) “. . . it is hypothesized that over time, the organization, in light of its record of failing to meet desired goals, will set goals lower and lower in the belief that these goals will be seen as achievable, and performing to goal will be restored. Finally, it is hypothesized that as the culture of the organization accepts that it rarely reaches its goals, the need to reach them is diminished, reinforcing the belief that failure to reaching goals has few if any consequences.” This passage could have been written about Looking Forward Lighting. We can see the situation depicted in the archetype diagram on the next page.
The Solution

Identify Leverage Points

Before choosing a solution we must understand which leverage points will support the change we are attempting to implement. One way to do this is to evaluate the assumptions behind the conflict cloud diagram and propose a way to eliminate one leg of the assumptions which evaporates the
conflict cloud. When we evaporate the cloud, we eliminate the conflict that is prohibiting us from achieving our objective. The area that I recommend LFL focus on is segment D-E.

I think we can agree that using root cause analysis to permanently solve problems that interfere with production output is an investment in the future that should be continued. Although there may be better methods of root cause analysis for assembly operators to use, 5-why methodology is where the most training, coaching, and support is available for the operators at LFL. I recommend LFL reinstitute this methodology as the primary tool for root cause analysis on the shop floor.

The area where we should focus change is on the time required to properly apply the 5-why tool on the shop floor.

Behavior Change

First, I recommend a slow implementation focusing on one problem per day per team. Trying to apply the tool to every problem every day will result in no production (which translates to missed customer commitments) and continued frustration by all until finally abandonment of the process begins again. The supervisor and all integral parties should be present to support the activity. The operators should choose the problem they want to solve to gain their personal investment in the process. This activity should be restricted to 15 minutes to demonstrate the process is not meant to be time intensive and can be applied real time as problems occur.

Once the teams have some success, in three months or so, the activity can be increased to two problem resolutions per day with one focused on mechanical issues and the other on quality of product issues. The focus should shift from an “event” activity to a “real time” activity with the line stopping at the time the issue occurs that the team has chosen to resolve. By this point in time the teams should have enough practice to be able to apply the tool autonomously. Supervisor involvement should only be required if the team is struggling with a particularly difficult problem. I do not recommend
going beyond two issues per day due to the dramatic impact this is already going to have on output which impacts meeting customer commitments.

In addition to this “slow start” approach, I recommend reducing the production target by the appropriate level per day to allow the time required to complete the root cause analysis without forcing operators to stay over to compensate for the lost production. This may require some Saturday production at implementation to sustain the weekly target that supports customer shipments. Currently, LFL is creating a negative feedback loop by requiring operators to work overtime to recover parts during the non-producing time that the 5-why tool is being applied. Operators feel “punished” for applying the tool because they have to work past their scheduled end of shift which encourages them not to apply the 5-why tool or rush through the process with dismal results. As fewer problems occur, less non-producing time will be required which should reduce the Saturday overtime requirement. This is a positive feedback loop that should yield long-term higher efficiency results for LFL.

Finally, by reviewing this paper, LFL senior management should glean an understanding that the slightly lower operating efficiency results of the short-term will yield more stable and higher efficiencies in the long-run if a continuous improvement path is encouraged and supported.

This renewed focus on continuous improvement should promote a small addition to the operational metrics. Supervisors should report daily on the percentage of permanent solutions applied the previous day. The percentage is an easy calculation of number of solutions implemented divided by the number of areas applying the tool. Solutions can be documented using the Kaizen card tool already in use so solutions can be cross-pollinated to other teams. This promotes daily focus on the task at hand and ensures all involved understand the requirement and commitment.
Conclusion

In this paper I reviewed the history and culture of Looking Forward Lighting Company and examined how the current culture of LFL contributes to the failure of systemic changes. I also conjectured that culture has created the change paralysis that LFL currently endures which threatens their competitiveness in the market place. I provided a specific continuous improvement implementation project (5-why root cause analysis) for dissection. The leverage point to be focused on was the result of applying a current reality tree, conflict cloud diagram, and understanding the archetype at play. A solution was proposed that should support the systemic change and encourage a shift to a continuous improvement culture that is a prerequisite to a lifetime of profitable growth.
References


APPENDIX

Current Reality Tree (Appendix A)
Current Reality Tree (Appendix A)

Root problem is not resolved.

Root cause is not diagnosed.

Operator training on 5 Whys is not effective.

Assembly operators not able to complete root cause analysis.

Most operators do not like to work overtimes everyday.

Assembly operators have to work past the end of their normal shift if they find the time for root cause problems.

5 Whys: When assembly operators do not know how to answer 5 Whys, the logic is inefficient and generally does not pinpoint a root cause that can be resolved (i.e., machine broke).

Assembly operators frustrated.

Assembly operators do not know what they will be able to leave each day.

Assembly operators are required to work until daily production targets are met.

Operations management's primary goal to achieve the daily assembly production schedule.

Reengineering equipment problems frequently interrupt the assembly production process.

Non-performing component parts are transported to assembly lines.

99% of operational metrics are based on assembly line performance.

No time is allotted to account for assembly production process interruptions.

Reengineering equipment problems frequently interrupt the assembly production process.

Assembly production targets are not met.

Assembly production targets are met.

Daily assembly production targets are met.

Daily assembly production targets are not met.

Operations Management focuses only on existing/leading performance or improvement activities.

UDE4: Assembly operators are required to work until daily production targets are met.

UDE3: Assembly production targets are not met.

UDE2: Reengineering equipment problems frequently interrupt the assembly production process.

UDE1: Assembly operators are required to work until daily production targets are met.

UDE0: Assembly operators do not know what they will be able to leave each day.

UDE: Assembly operators are frustrated.

Assembly operators frustrate.

Most operators do not like to work overtimes everyday.

Assembly operators have to work past the end of their normal shift if they find the time for root cause problems.

5 Whys: When assembly operators do not know how to answer 5 Whys, the logic is inefficient and generally does not pinpoint a root cause that can be resolved (i.e., machine broke).

Assembly operators not able to complete root cause analysis.

Operator training on 5 Whys is not effective.

Root cause is not diagnosed.

Root problem is not resolved.
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Karen has been a medical technologist at Norton Audobon Hospital since earning her bachelor’s degree in biology from Indiana University Southeast. After studying graduate-level microbiology at the University of Louisville, she returned to IUS to enroll in the Master’s of Liberal Studies program. Karen hopes to broaden her horizons through its interdisciplinary emphasis.

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Lisa, an MLS graduate student, was introduced to MBTI® many years ago. Recently, class discussion renewed her interest in the MBTI® and personality traits. Choosing this subject matter, Lisa wrote this paper and presented her ideas in class. Although she hasn’t chosen a thesis topic, it will include personality traits. Lisa currently works in Noncredit Programs at IU Southeast, and directs elementary age enrichment programs.

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