

Promoting Metaphorical Thinking through Synectics: Developing Deep Thinking Utilizing Abstractions

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Abstract:

The objectives of this article are designed to present the power of abstract thinking through metaphors and synectics. The actual usage of similes, metaphors, and synectics by university students will be shared. In conjunction with its ability to assist both students and instructors in the assessment of expanded learning and deeper understanding, the role of metaphorical thinking will be demonstrated and connected to current research. The purpose of this article is to encourage more professors to develop assignments that appropriately demand the rigorous writing and thinking skills that are seemingly lacking in far too many higher-education classrooms.

Key Words:

Deep thinking, metaphorical thinking, synectics, writing and thinking skills.

Introduction

The intent of this article is to cajole the professorate into indignation and to debate my controversial assertion that we instruct in higher education, yet too often neglect to invite our students into the realms of higher-level thinking. All too frequently, our students remain relegated to learning foundational facts and historical dates. The premise of this article is to promote social networking and creative investigations that lead to inspired learning that otherwise is not being nurtured. The generalized vehicle for this specific type of instruction is built upon the timeless and complex concept of the metaphor. The term metaphor originates in the Greek word *metapherein* – *meta* symbolizing “change” and *pherein* defined as “to bear.” This ageless, abstract “change bearing” concept is the premise of my intentions to assist pre-service teachers to consider transformative and alternative approaches to teaching and learning. The basis of this venture into the domains of intangible thinking is the synectic approach, first developed in the seminal work (Gordon, 1961). Synectics is defined as a creative problem-solving process, often referred to as “making the strange familiar.” Synectics encourages brainstorming, leading to grouping unlike ideas, synthesizing pairings of

unlike ideas, selecting a single pair to investigate, and inventing a metaphor that utilizes the aspects of the chosen pairing.

The Constructivist Approach and Engaged Learning

Learning through metaphorical thinking is closely connected to reflective thinking and aligned with the instructional, constructivist approach. Professors need to challenge college students more and to assist them in overcoming the fears of learning described by Kawenski (1991): "(Students are)...afraid to take risks, afraid to explore new ideas, and afraid to fail." Enlightened by Dewey (1934), educators must engage students' imaginations as they become familiar with "the conscious adjustment of the new and the old." Through blog entries and face-to-face dialogues, student teachers have been able to enhance their instructional practice. This perceiving and grappling with common concepts through metaphors is akin to Huebner (1984) when he promotes heightened perceptions as a "way of shedding new light on an already existing phenomena, by looking at and speaking about that phenomena from a totally different perspective. In this way, we obtain a transfer of meaning, and thus an opening up of awareness."

Proof of The Sojourn Into Higher-Level Thinking And Expressions

To provide some salient examples of former students' work, a listing of their metaphors into the categories of (1) Nature; (2) Objects; and (3) Processes follows. These lists demonstrate the insightful transformations through advanced thinking developed through pithy, thought-provoking statements. These reflective metaphors lead students to higher plateaus and solidify deeper understandings.

(1) Nature

Learning is.

- the life of a butterfly. The butterfly begins as a cocoon, breaks and blooms into a caterpillar, grows, and spreads over time. Just like a butterfly flies, learning soars!
- an empty salad bowl. You fill it up (with many ideas). It gets eaten up (place ideas into memory), and you start over, having new contents the next night for dinner (learn something new every day).
- a growing tree. The young tree first builds roots in a child's life and grows stronger, developing a trunk. As the child grows and explores different interests and content areas, the branches of the tree represent the content areas and skills the child develops throughout his or her education.
- a seed planted in fertile soil. When you add water and sunlight, the seed flourishes just like knowledge in the classroom should flourish.
- a salad. Everyone starts with a foundation (lettuce) and different ingredients are added to build onto that prior knowledge.
- a chameleon because it's constantly changing to adapt to its different surroundings.
- a tree because it grows and expands its branches as knowledge is gained.bullets.

(2) Objects

Learning is:

- art. It has many different colors and varieties, but when mixed together, it can be breath-taking.
- an artist's palette. Each color represents a different subject, and when the colours are put together, they become a masterpiece.
- Legos - because knowledge builds on previous knowledge like one Lego on top of another. Also, you can change what you know and how you learn it, like moving pieces of a Lego sculpture. Creativity plays a vital role both in learning and constructing with Legos.
- a fortune cookie because it has a hidden meaning.
- an old pair of shoes because you can tell if a pair of shoes has been many places and seen lots of experiences, just like you can tell if a person is very knowledgeable and has been through many learning experiences.
- a garbage disposal because it sucks up the information, breaking it down into smaller pieces to be dispersed and because it's given a lot of different materials from different people and adds up over periods of time.
- Bloomsburg University's campus; it is continually growing, changing, and improving; great things come out of it!
- a puzzle because you get pieces from each different subject, but it doesn't quite make sense until you put them all together.
- a filing cabinet because it takes thoughts and organizes them into short-term, long-term, and working memory.
- a sponge. The information enters the brain like water entering a sponge. Some of the information is retained, and some soaks through. The information retained comes out later, but some is just lost.
- a box of paints. Separately, the colors, a.k.a. information, are beautiful, but when used together, they paint a more beautiful picture with better understanding.
- time; the more you have, the more you know; it never stands still; it is a continuous, life-long process; it is of the essence; and there never can be enough of it!
- a rollercoaster because it is fun and exciting. We have our "ups and downs" when learning. I enjoy the exciting challenges that learning causes.
- a small spark that will grow into a huge bonfire some day. It starts as potential and needs guidance and fuel to grow. Teachers fan the small flame, providing oxygen (knowledge) and add many different kinds of fuels that all add to the growth of the flame in different ways.

(3) Processes

Learning is

- cooking. Certain ingredients come together to make one whole dish. Each ingredient comes from a different place, coming together to form a whole.

- painting a picture. You need to be willing to try different things and learn from mistakes. Learning takes imagination, creativity, and the will to get to the final masterpiece.
- building a house. You start with a foundation and keep adding on. Learning, like constructing houses, is really never complete because you can always be adding on.
- a pirate searching for his/her treasure.
- a journey; you choose your own path and direction, and with guidance along the way, you find your destination.

Students demonstrate a deeper understanding of the learning process through the creation of metaphorical connections. This statement is supported by Starko (2004) who affirms, “the student who has the ability to engage in metaphor making operates at the highest levels of cognitive function.” Stiff-Williams (2002) provides further support by noting that, “this strategy (synectics) pushes students to think in different ways – with the result being enhanced cognitive processing.” Phillips & Pugh (2000) also provide evidence that “writing is a means of discovering new knowledge, and a way for writers to find out about themselves during that process.” These kinds of creations encourage dialogue among classmates and cause revisions and justifications to occur. Professors should set the learning bar higher by expecting higher-level thinking to flourish in the classroom. Developing these abstractions will assure that foundational textual learning and beneficial experiences in the pre-service field are indeed happening. Opening dialogue between student-to-student and student-to-professor can only lead to enhanced learning for everyone.

Student Teachers Demonstrate Their Prowess In Creating Abstract Written Expressions

Student teachers were asked to develop similes, convert the similes into metaphors, and then create synectic connections related to Charles Dickens’ most famous synectic: “It was the best of times, it was the worst of times.” The following examples of synectics are excerpted from the writing of 30 student teachers who had just begun their second field placements.

Table 1. examples of synectics

1. Similes – Teaching is like
<ul style="list-style-type: none"> • a roller coaster... sometimes you are thrown for a loop, but the ride is always fun. • a never-ending road. There are always opportunities for more learning. • being a stage performer. You are constantly trying to engage and entertain, but sometimes you are only as good as your audience will let you be. My students don’t love everything I teach, but the show must go on. • a basket of fruit – sometimes it can be sweet; sometimes it can be sour. • a golf swing; no matter how much you practice, it may not always go the way you planned. • the weather; you never know what to expect.

- riding down the interstate in PA. Sometimes it's smooth, but once in a while you hit a pot hole.
- trying to win the lottery because you want a good outcome, but it doesn't always happen.
- a new experience, never knowing what to expect.
- hyperactivity. It is exhilarating and tiring because I experience both daily.

2. Metaphors – Teaching is

- a construction site... problems arise while trying to expand, but the right tools are always close by.
- a mansion. There are many doors and windows to open in order to expand a child's mind.
- a blank canvas. What you add to the picture makes it either a masterpiece or a stick-figure drawing.
- a drop of water – each and every individual has the same properties, but not necessarily the same characteristics.
- fishing – we use bait to entice the students, hook them, and slowly reel them in. We are proud of each catch but want them all to be trophies.
- running a marathon – one step at a time, a plan, pacing, and the go for a goal.
- playing chess – staying several steps ahead of each student hoping to move each student in the direction you need them.
- the helping hand that guides students towards success.
- driving without directions; you don't want always know where you are, but you have a goal as to where you'll end up.
- war – knowledge is my weapon to the opponents of learning.
- tennis. Sometimes you rally back and forth with a student, sometimes you ace a lesson. Sometimes your students have a mean backhand, sometimes your words get lost in an alley. Sometimes your students mess up their first “serve,” so you give them a second try and sometimes they win the match.
- golf. There's always a part of your game that needs improvement.
- a thunderstorm. Sometimes it's unbearable, but there is always a rainbow.
- solving that difficult calculus problem where you spend several hours of your life just to see the light at the end of the tunnel.
- an exhibit because it gives students a chance to showcase their skills academically, socially, artistically, and athletically.
- a voyage to higher understanding because it's ongoing and has a destination.
- a toolbox for learning because it involves many skills that need different tools.
- an ongoing adventure because you experience something new every day.
- driving directions; you don't know where you are going, but you must keep going or you will never get there.
- a tree falling; it will be thrilling and scary, but you'll be okay in the end.
- hitting obstacle after obstacle before seeing the end of the tunnel.
- a brick wall that is slowly chipped away.

3. Synectics – Teaching is both _____ and _____ because...

- ❖ a can opener and a dance – you are releasing creativity and excitement that lies within every student.
- ❖ gardening and swimming – you are gathering the thoughts of your students as you are swimming through the waves of learning.
- ❖ cooking and driving – it takes a various amount of ingredients (student/ideas) to make it delicious and sometimes getting off of the beaten path can be the most fulfilling part of teaching.
- ❖ a Sharpie marker and a lunch box – your mark in the world will always be permanent regardless of what you planned that morning.
- ❖ fishing and running a marathon – there is a large amount of preparation. There are specific steps required to reach your goal. You are striving for success. Without the proper pace and differentiation, you will not be successful.
- ❖ ice and heat – cold stares can bring control that leads to a passion for learning.
- ❖ clarity and confusion – sometimes my students “get it,” and other times they must struggle to gain understanding.
- ❖ hunger and invincibility – you can never seem to get enough done to satisfy everyone’s need, yet regardless of what the day brings, you must never accept defeat.
- ❖ summer and winter – it can give you a warm and fuzzy feeling when you get it or you feel cold and alone when they argue or are defiant.
- ❖ a soda and clothing – teachers should be crisp like a fresh soda, and they should have crisp clothes to look professional.
- ❖ sewing and dancing – you bring a classroom together and stay in step to reach a common goal.
- ❖ ice and fire – sometimes you feel cold and unsure, but when you get towards the warmth, the chill fades away.
- ❖ a lemon and chocolate – there will be great days (sweet) and bad days (sour).
- ❖ a rainbow and a drink of water – it is colorful and refreshing.
- ❖ a voyage and the doldrums – sometimes it is smooth sailing, and other times you seem to be getting nowhere.
- ❖ color and black & white – you allow students to express themselves, and other times you have to follow the rules.
- ❖ the ocean and the circus – there is no ending, and it can be chaotic at times.
- ❖ exhausting and exhilarating – you will (or should be) working very hard, but it will be worth it by the end of the day.
- ❖ relaxing and frightening – some days are sunshine, and others are on-the-edge-of-your-seat fearful.

The students’ insights are clearly focused reflections relating to their current student-teaching experiences. Without foundational schema, they most certainly could not create abstract writings that express the realities of the workplace and teaching profession. The students’ impressive emotions range from confusion to elation, fear to invincibility, and preparedness to successfulness. Their most intriguing synectic designs are of ocean and circus, can opener and dance, and cooking and driving. Please note

that all of the forced relations are clearly justified, and in Bloom's Cognitive Taxonomy (1956), this connection is defined as the highest level of thinking. If one uses the revised taxonomy, learning is utilizing a creative factor in developing writing that summarizes and reflects upon prior knowledge and new connections, and it is considered to be on the highest level of developmental thinking.

Scarcity of Information Relative to Synectics

Unfortunately, a search of the literature reveals very little information related to synectics. Those involved with the arts and design have written a few publications on this topic (Heid, 2008; Starko, 2004; and Henderson, 2001). However, education has been slow in learning the definition and appropriate usage of synectic connections as metacognitive activities. The ramifications of this lack of information in the research are clear: more studies utilizing synectics and metaphorical thinking within collegiate classrooms need to be conducted. Higher education should promote the usage of higher-level thinking skills; this paucity of utilization seemingly provides an important opportunity for further research and publication.

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