One of the *biggest challenges* facing most teachers is how to balance the need to provide students with enrichment opportunities within the context of an overly prescribed curriculum in their general education courses.

The Magic Key for Promoting Infusion Activities Into Any and All Aspects of the Prescribed Curriculum

*Teacher Creativity* ...

...Inspires Student Creativity
Major Underlying Issues

Infusion is the process of jazzing up the regular curriculum to create more ORE for students.

1. **Teacher creativity** is the key to successful infusion and using infusion makes teaching more fun.

2. The more teachers know about student **interest and strengths** through Assessment **FOR** Learning, the more effective infusion will be.

3. The use of technology makes infusion **easier** for teachers.
“American Teachers Feel Really Stressed, and It's Probably Affecting Students”

Teachers Don't Love Their Jobs, and Students Don't Love Their Teachers

Gallup's newly released State of America's Schools report indicates that nearly 70 percent of K-12 teachers surveyed in 2012 do not feel engaged in their work. Nearly half of teachers reported feeling daily stress. When compared to 12 other occupational groups, teachers were least likely to feel their "opinions seem to count" at work; yet the survey found teachers tended to be satisfied with their lives overall.

The report also surveyed 600,000 students in grades five through 12 on their feelings of hope, engagement, and well-being. Forty-five percent of students felt "not engaged" or "actively disengaged" from school, with rates of disengagement increasing by grade level. Teachers have the biggest influence on student-engagement levels: Students who have "at least one teacher who makes me excited about my future" and feel their school is "committed to building the strengths of each student" were 30 times more likely to be engaged at school.
There is a very simple lesson here for all of us From Preschool to Graduate School...

Let’s make teaching and learning more fun!
Why Infusion ???

Prescribed Curriculum

We cannot direct the wind but we can adjust our sails.
An Infusion Based Approach for Striking a Balance Between Prescription and Personalization
The Goals of The SEM

Enjoyment

Enthusiasm

Making schools a happy place for all students is the ultimate goals of The Schoolwide Enrichment Model.
Everything works better when we have these types of information about our students.
Use Infusion to Add Enrichment Activities to Prescribed Curriculum

How Infusion Works
Rules for Brainstorming

1. **There are no dumb ideas.** Period. It is a brainstorming session, not a serious matter that requires only serious solutions. Remember, this is one of the more fun tools of quality, so keep the entire team involved!

2. **Don’t criticize other people’s ideas.** This is not a debate, discussion or forum for one person to display superiority over another.

3. **Build on other people’s ideas.** Often an idea suggested by one person can trigger a bigger and/or better idea by another person. Or a variation of an idea on the board could be the next “velcro” idea. It is this building of ideas that leads to out of the box thinking and fantastic ideas.

4. **Reverse the thought of “quality over quantity.”**
   Here we want quantity; the more creative ideas the better. As a facilitator, you can even make it a challenge to come up with as many ideas as possible and compare this team’s performance to the last brainstorming session you conducted.

Other brainstorming preparation questions:
- Who will lead or facilitate the brainstorming session?
- Who will participate in the brainstorming session?
- Who can write very quickly to record the brainstormed ideas without slowing down the group?
- Where will the brainstorming session be held?
- What materials are needed for brainstorming (easel, paper, white board, pens, etc.)?
- What is my brainstorming session desired outcome?
Injecting Enrichment Activities Into Any and All Regular Curriculum Topics

The Rules (Apply as many as possible)

1. Not always a single, predetermined correct answer
2. Something kids do rather than sit and listen
3. Something that is fun for most kids
4. Something that has various levels of challenge to which interested students can escalate
The Standards (Outcomes) Based Curriculum

U. S. States and Capitals

Today’s Theme Words
Selection Infusion Extension

Multiplication Tables

If you would persuade, you must appeal first to interest rather than intellect.

Benjamin Franklin
American statesman and inventor
Use Infusion to Add Enrichment Activities to Prescribed Curriculum

How Infusion Works
The Standards (Outcomes) Based Curriculum

U. S. States and Capitals

Today’s Theme Words
Selection Infusion Extension

Multiplication Tables

If you would persuade, you must appeal first to interest rather than intellect.

Benjamin Franklin
American statesman and inventor
Creative Idea Generator

State and Capitals (topic)

- A Rap State Song
- Design a state motto/logo
- Travel Game (clues to find destination)
- Create a limerick/poem
- Design a Jeopardy style game
- Who am I? Match capitals & states
- Profiles of famous people from state
- Create state flag
- Students make board game
- Write/choreograph state song
- U. S. Dart Board
- Create state political cartoons
- Guessing game for state bird/flower
- PR material for tourism
- Origin of states
- Debate over capitol locations
- Photographic essay of state/capital
- Character sketch of state/capital
- Major events within states
- History of transportation
- Route planning to visit all capitals
- Unique facts

22 Ideas in 10 Minutes!
New Jersey resembles an Indian head.

Minnesota looks like a chef’s hat.

Louisiana is shaped like rain boots.

Iowa looks like a face.

Example of Infusion in Practice
Ten minutes of brainstorming with a group of teachers

• A Rap State Song
• State Shapes made out of play dough
• Travel game (find clues to get to destination - like Carmen Sandiego)
• Route planning to get there (most efficient way to visit all capitals)
• Who am I? game to match states and capitals
• Students make board games
• History of transportation determining capital location
• Character sketch of state and capital
• Photographic essay of state/capital using Internet photos
• Create a flag based on information researched about the state
• Create political cartoons and original songs about the state and capital
• Debate over a better city for a state capitol
• Design a state motto/logo
• Create a limerick/poem
• Design a Jeopardy-style game to learn capitals and states using given supplies and time limit
• Write a song/poem/limerick that students can sing about capitals and states
• Profiles of most Famous men/women from the state
• Write/choreograph state song
• Guessing game on state bird/flower
• PR material to get tourists to state
• A dart board (more points for smaller states)
• Origin of state/capital names
• Debate over better capitol locations
• Major events that took place in the state (Wright Brothers @ Kittyhawk)

Teacher Creativity

24 Ideas in 10 Minutes
# The Great State Geography Challenge  Quiz No. 1

*Draw a line to match the state name to its corresponding interesting feature.*

<table>
<thead>
<tr>
<th>State Name</th>
<th>Interesting Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>It was the first state to allow women to vote.</td>
</tr>
<tr>
<td>California</td>
<td>It is the birthplace of the ice cream cone.</td>
</tr>
<tr>
<td>Connecticut</td>
<td>It is so large that it covers as many square miles as the other five New England states combined.</td>
</tr>
<tr>
<td>Georgia</td>
<td>Its economy is so large that if it were a country, it would rank seventh in the entire world.</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Home of the first Krispy Kreme doughnut store.</td>
</tr>
<tr>
<td>Maine</td>
<td>One out of every 64 people have a pilot’s license.</td>
</tr>
<tr>
<td>Missouri</td>
<td>Home of the world’s largest office building, The Pentagon.</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Has more than 6$ billion in gold underneath Fort Knox.</td>
</tr>
<tr>
<td>Virginia</td>
<td>It was here, in 1886, that pharmacist John Pemberton made the first vat of Coca-Cola...interesting!</td>
</tr>
<tr>
<td>Wyoming</td>
<td>The Frisbee was invented here at Yale University.</td>
</tr>
</tbody>
</table>
Best Extension to come out of this activity.

I asked her and everybody asks me...

Using Differentiation for Two Math Questions

1. How much is $6 \times 4$?

2. How many different ways can you make 24?
How Many Ways Can I Make 24?

**Addition**
- \(23 + 1 = 24\)
- \(22 + 2 = 24\)
- \(12 + 12 = 24\)
- etc.

**Subtraction**
- \(25 - 1 = 24\)
- \(34 - 10 = 24\)
- \(124 - 100 = 24\)
- etc.

**Multiplication**
- \(6 \times 4 = 24\)
- \(8 \times 3 = 24\)
- \(12 \times 2 = 24\)
- etc.

**Division**
- \(48 \div 2 = 24\)
- \(96 \div 4 = 24\)
- etc.

**Addition + Subtraction**
- \(20 + 5 - 1 = 24\)
- \(30 - 10 + 4 = 24\)
- \(10 + 10 + 5 - 1 = 24\)
- etc.

**Addition + Multiplaction**
- \(10 + 2 \times 7 = 24\)
- \(3 \times 10 - 6 = 24\)
- \(4 \times 5 + 4 = 24\)

**Multiplication + Division**
- \(6 \times 8 \div 2 = 24\)
- \(12 \times 12 \div 6 = 24\)
Advanced

\[\sqrt{4} + \sqrt{4} + a_0 = 24\]

\[4! = 24\]

\[a_0^2 + 4^2 - 8 = 24\]

\[\sum_{n=5}^{7} n - 4 = a_4\]

\[\frac{-a}{2} = 24\]

\[x: \{a_0, 40, 18, 22, a_0\} = 24\]

\[\angle B = 66^\circ, \text{ then}\]

\[\angle A = 24^\circ\]

\[P_4 = \frac{4!}{(4-4)!} = a_4\]
Middle Grade Reading and Language Arts Teachers

What are your biggest challenges?

How can we you make the stories or books we are using more interesting to students?

Create a 30-second movie commercial or trailer podcast for the story.
Design a room that a character in the story would like.
Design a cover if the story were made into a book.
Turn the story into a short play.
Design a movie poster for the story.
Pretend you are a talk-show host and create an interview with the author of the story.
Rewrite the story using a new setting.
Tell the story through a different character.
Dress up like the character and retell the story.
Be a costume designer for a movie version of the story.
Create a graphic novel version of the story.
Suggest what might be a good sequel to this story.
Create a rap or song about the story.
Create two or three illustration to show a photo album of the story in pictures.
Be a newscaster reporting the story.
Create some Jeopardy! questions about the story.
Link a real social or societal problem that relates to the story.
List other stories or books that have a similar theme.
Write an advice column for the characters in the story.
Rewrite the story as a picture book for young children.
The Role of How-To books in Infusion

- Data patterns
- Forecasting
  - Over time
  - Homes
  - Emergencies
    - Impact on people
    - Daily life
- Impact on people
- Measuring tools
  - Thermometer
  - Anemometer
  - Barometer
  - Hygrometer
  - Rain gauge
  - Psychrometer
- Climate
  - Change
    - Natural causes
    - Human causes
      - Pollution
      - Water usage
      - Deforestation
Classroom Activities for a Better Environment

WORMS
Eat Our Garbage

Mary Appelhof
Mary Frances Fenton
Barbara Loss Harris
Questions Raised by Scientists - Organisms

- Organisms
- Earthworms
- Habitat Requirements
- Environmental Influences
- Food Preferences
- Water Preferences
- Temperature Requirements
- Impact on Environment
- Interaction With Other Organisms
- History of Organism
- Reproductive Patterns of Organism
Science Unit on Birds

- Prezi on birds of prey
- Podcast on bird calls
- Write a short play about birds.
- Diorama depicting birds of a habitat
- Bird classification card game
- E-Photo album of state birds
- Mystery game with bird feathers
- Map migratory flight patterns.
- Dissect owl pellets.
- Virtual bird dissection
- Poem about birds

- Design a new species of bird adapted to a biome.
- “Fun Facts” deck of cards about birds
- Sketch internal bird anatomy.
- Podcast on bird calls
- Edit a Wikipedia article on birds.
- Glog on a species of bird
- Classify birds by habitat and diet.
- Compare birds’ beaks through sketches.
- Board game about birds
- Debate whether birds should be kept as pets.
<table>
<thead>
<tr>
<th>Make a social media page for a character (FB/Twitter/Insta)</th>
<th>Write a letter from the character’s perspective</th>
<th>Draw a comic strip of a plot event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write a diary entry from perspective of various characters</td>
<td>Plot the events of the novel on a map</td>
<td>Film a movie trailer for the book</td>
</tr>
<tr>
<td>Design a 3-D model of the island</td>
<td><strong>Topic:</strong> The Lord of The Flies</td>
<td>Rewrite the ending of the book to have a different outcome</td>
</tr>
<tr>
<td>Design a board game based on the novel</td>
<td>Create a Symbol Box</td>
<td>Draw an Open Mind Symbol Chart</td>
</tr>
<tr>
<td>Create a photographic essay</td>
<td>Engage in a debate (Ethical issues, psychological issues, gender issues)</td>
<td>Record a podcast episode on your response to the novel and issues it raises</td>
</tr>
</tbody>
</table>
Novel Study

- Create a Facebook/Instagram/TikTok profile for a character in the novel
- Write a scene in the novel that didn’t happen but that should have
- Design a movie poster and cast actors for the novel
- Create a series of cartoons based off of the novel
- Create a children’s version of the novel and read it to students at a local elementary school
- Remove a key character from the novel and explain how it changes the story
- Write a copy of a newspaper front page that is devoted to an event from the novel
- Design a Promposal
- Tweet War between among the protags/antags/
- Rewrite a portion of the text from another character’s point of view
- Whose actions were most deplorable? Put that character on trial.
- Bring a character to life by acting out a key scene
- Inject a fairy tale character into the story. How would that character interact with novel characters?
- Create a soundtrack/playlist that represents the novel
The Role of Technology in Infusion, Differentiation, and Jazzing Up the Regular Curriculum

Two Quick Examples

1. Unit on the U. S. Constitution
2. Unit on Ancient Egypt
Teacher Use – Teaching a unit on Ancient Egypt

**Fun With Mummies**
This amazing interactive website will help you explore the ancient Egyptian culture. Click on one of the pictures to prepare a mummy for burial and learn all that had to be done to each body, to decipher images left on a tomb, to learn more about the artwork of ancient Egypt, or to see a timeline of ancient Egypt.

View Activity

**Museum of Science Virtual Exhibits**
Brave the perils of Antarctica, prepare for your afterlife on a tour of Ancient Egypt, design your own robot, and much more through these interactive exhibits from Boston's Museum of Science!

View Activity
Teacher Use – Teaching a unit on Ancient Egypt
Intermediate Example

Fun with Mummies

This amazing interactive website will help you explore the ancient Egyptian culture. You can prepare a mummy for burial, decipher images left on a tomb, to learn more about the artwork of ancient Egypt, or to see a timeline of ancient Egypt.

View Activity
Teacher Use – Teaching a unit on Arctic Animals
Primary Example

San Diego Zoo: Polar Bear Plunge

Jump into the world of polar bears! At The San Diego Zoo, take a virtual plunge with polar bears through videos, read facts, learn about their habitat, and their role in the ecosystem. Learn about the challenges they face with global warming, and how we can help. Join the conversation and find out how you can be involved in conservation!

**San Diego Zoo: Polar Bear Plunge**

**Interest Areas**: Science, Technology, Social Action, Video/Photography

**Learning Styles**: Independent Study, Programmed Instruction, Simulation, Technology

**Expression Styles**: Audio-Visual/Display, Oral, Service, Technological, Written
Teacher Use – Teaching a unit on Global Warming
High School

A Paleo Perspective on Global Warming

The last decade of the 20th Century was the warmest in the instrumental temperature record, starting in the 1990s and four of the last five years rank among the 15 warmest and include the record, which makes these high temperatures unsurprising. But, what about in the context of past centuries? Are modern temperatures compared to those of the reconstruction of past climate that we can track this warming. Take a look at the history and science and the data of temperature change, and decide

A Paleo Perspective on Global Warming

Interest Areas
Science
History & Social Studies
Social Action

Learning Styles
Discussion
Group Work
Independent Study
Lecture
Peer Tutoring
Programmed Instruction

Expression Styles
Audio-Visual/Display
Oral
Technological
Written

Paleoclimatology Data

Paleoclimatology data are derived from natural sources such as tree rings, ice cores, corals, and ocean and lake sediments. These proxy climate data extend the archive of weather and climate information hundreds to millions of years. The data include geophysical or biological measurement time series and some reconstructed climate variables such as temperature and precipitation.

NCEI provides the paleoclimatology data and information scientists need to understand natural climate variability and future climate change. We also operate the World Data Service for Paleoclimatology, which archives and distributes data contributed by scientists around the world.
The wisdom of the wise and the experience of the ages are perpetuated by quotations.

Benjamin Disraeli

My favorite quote from my FAVORITE QUOTE LIST...

Example is the school of mankind, and they will Learn at no other.

Edmund Burks
Statesman and Philosopher
Students measured the height and weight of 10 regular Oreos, 10 Double Stuf Oreos, 10 Mega Stuf Oreos and five wafers.
After working out math problems and designing patterns from paper, students put scissors, tape, and hope into creating colorful kites. FIND Kite-related lessons at: html#ch0hT6qYtpOgv6mB.99

Students are enrolled in a Learning Enrichment and Acceleration Program (LEAP). As the student-made kites climbed higher and higher, it was time for more math. Students paced off distance; calculations were made, revealing that kites reached a height of 193.16 feet, based on specific measurements students had practiced before heading out to the playground.
“What’s It Good for?
Infusion in Algebra

Algebra Goes to The Super Bowl
hmmmm...
and yet another
day has passed
and I did not
use Algebra
once...very
interesting.
Barbie Dolls Teach Algebra

Algebra 1 students use formulas and calculations to prevent Bungee-jumping Barbies from cracking their heads in a plunge off the top of the football stadium.

The freshman worked on the data derived from attaching rubber bands to the feet of each Barbie and recording how far she would fall with the addition of each additional rubber band.
\( n = 15 \)

- Student Guess
- \( y = \)
- Computer Fit
- \( r = 0.99 \)

\( y = 24.8x + 45.37 \)

- Remove Points
- Move Points
Eight times eight went out the door
Came back in married as sixty-four

Nine times three went to heaven
Came back to earth as twenty-seven

Limericks

There once was a number named eight
Who thought he was something quite great
But when divided by four he was two
And his new size made him feel blue.

Cinquain

Numbers
Added together
Can be multiplied
Saves time
Faster

“What’s It Good for?
Infusion in Math
The 9-foot-tall pyramid they built out of 1,024 smaller paper pyramids was based on the Sierpinski triangle fractal, a mathematical design in which each large piece is made of matching smaller pieces. Submitted to Guinness World Records.
Developing Math Skills Through a Fantasy Baseball Program

In the Fantasy Baseball program, students receive fictional baseball cards and analyze the players' statistics to draft and trade while building their own teams. A "Player Wheel," a geometric representation of the player's strengths and weaknesses, is created and used to play against other students' teams. A regular-season schedule is set for the class, usually ending with a World Series game to decide the classroom champion.

Read more: [http://www.post-gazette.com/stories/sports/pirates/math-game-adds-up-to-win-640567/#ixzz1yAFV9459](http://www.post-gazette.com/stories/sports/pirates/math-game-adds-up-to-win-640567/#ixzz1yAFV9459)
The fourth grade students at OLT did their first project on the website Renzulli Learning. Here are a few pictures of the students that chose to dress up for their project.

**History Comes Alive**

Our Lady of Trust Catholic Academy
Brooklyn, NY

All research on the lives of these persons was done at the RLS site.
Night of The Notables

Jackie Robinson
Ada Lovelace
Nelson Mandela
Bill Gates
Steve Jobs
Ella Fitzgerald
Ludwig van Beethoven
Michelle Obama
Amelia Earhart
Rosa Parks
Robert Clemente
Benjamin Franklin
Sally Ride
Laura Bush
Guion Bluford
Willma Rudolph
Tony Hawk
Helen Keller
Anne Frank
Marian Anderson
Maya Angelou
Harry Houdini
Amelia Earhart
Meriwether Louis
Princess Diana
LeBron James
Gabrielle Douglas
Mae C. Jemison
Helen Frankenthaler
Malcolm X
Sacagawea
Louis William Tomlinson
Coretta Scott King
Anne Frank
Martin Luther King, Jr.
Helen Keller
Roberto Clemente
Muhammad Ali
Annie Sullivan
Albert Einstein
Mary Tudor

Kenyon portraying Guion Bluford
The First African American Astronaut
THE MUSEUM OF ONLINE MUSEUMS

Welcome to the MoOM. The galleries are updated continuously, and new exhibitions are hung each quarter.

The Curators

Introducing a film from Coudal Partners and The Board of Directors of the Museum of Online Museums. The Curators is a three-part documentary, hosted by Collections Director Kevin Guilfoile, that focuses on the collectors and the collected.

The Museum Campus
- Museum of Mathematics
- Computer History Museum
- National Postal Museum
- The Met's Timeline of Art History
- National Gallery of Art
- Rijksmuseum
- Russian Museums List
- Museum of Design Zurich
- Smithsonian Art Museum Weblog
- Museum of the History of Science at Oxford
- Virtual Museum of Canada
- United States Holocaust Memorial Museum
- SFMOMA
- American Package Museum
- The Bauhaus Archive
- Los Angeles County Museum of Art
- Musée d'Orsay
- The Museum of Useful Things
- Eisner Museum of Advertising and Design
- Rhode Island School of Design
- MoMA
- The Art Institute of Chicago
Teaching Technology Skills Through Creative Book Reports
The Weather Balloon Project - Failure is Not an Option

High-school physics teacher Raymond Cirmo describes how he challenged his AP Physics B class to apply everything they learned to launching a video camera as high above the earth's surface as possible and recording the journey there and back.
“What’s It Good for?

Infusion in Trigonometry

Football Field

\[
\begin{align*}
\sin A &= \frac{b}{a} \\
\sin B &= \frac{a}{b} \\
b &= \frac{a \sin B}{\sin A} \\
h &= \frac{b \sin A}{\sin B}
\end{align*}
\]
Exploring the Efficacy of Elementary Engineering


“What’s It Good for?
Infusion in Geometry

Hawthorne Brook Middle School fifth-graders Kaleb Naticchioni and Morgan Rosseau show off the bridges that they built in their science class. SUN /CHELSEA FEINSTEIN
“What’s It Good for? Infusion in Reading

Sixth graders get cozy with their books in their PJs.
“What’s It Good for?

Infusion in Reading

Eating his home made green eggs and ham.
Fourth grade students apply everything they are learning in math to the costs and measurement of factors (weight, grams of food, etc.) to raising a lamb.
Opportunities
Resources
Encouragement

Always in the area of the student’s Interest
7th Grade Science Teacher At Dow Avenue School, Ocean Township, NJ

Stephanie Battjer

Sent: Thursday, June 4, 2015 at 7:14 AM
To: joseph.renzulli@uconn.edu

You forwarded this message on 6/4/15, 2:47 PM.

Dear Dr. Renzulli,
I ran across your name and work recently and I believe you were my 7th grade science teacher at Dow Avenue School. You were always one of my favorite teachers! I remember your enthusiasm as a relatively young teacher, and that you always made class fun and interesting.

I am impressed with your work and your achievements. I just wanted to say hello to great teacher and scholar! Hope all is well with you!

Best Regards,
Brian Battjer
You can contact me to learn more about the Schoolwide Enrichment Model – including infusion – by contacting me at: nicole.waicunas@uconn.edu

To find out more on SEM Outreach, go to our Schoolwide Enrichment Model Outreach Services Page at: SEM-Consulting.pdf (uconn.edu)
For Information About PROFESSIONAL DEVELOP Please contact:

Nicole Waicunas
Renzulli Center Coordinator of Professional Development
nicole.waicunas@uconn.edu

You can also join my LinkedIn account by going to:
https://www.linkedin.com/in/joseph-s-renzulli-861b5b22/
"Stop worrying about what can go wrong, and get excited about what can go right."

Author Unknown

"A little more persistence, a little more effort, and what seemed hopeless failure may turn to glorious success."

Watty Piper, Author

The Little Engine That Could
And most of all, never give up on your dreams...
고맙습니다
谢谢

Thank You

고맙습니다