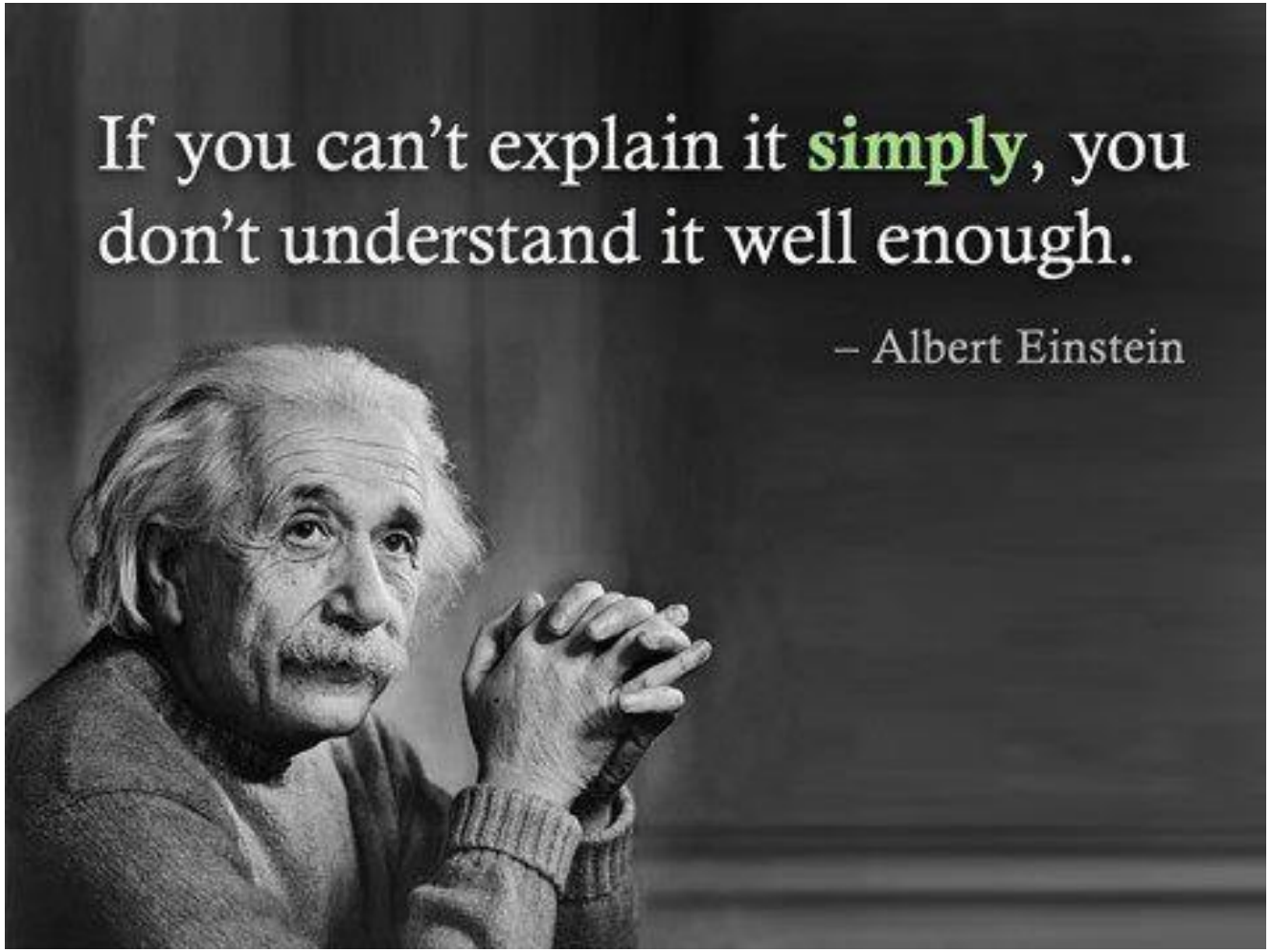
Student Learning and Simplexity

Leading for Learning 2022

Dr. Scott Morrison

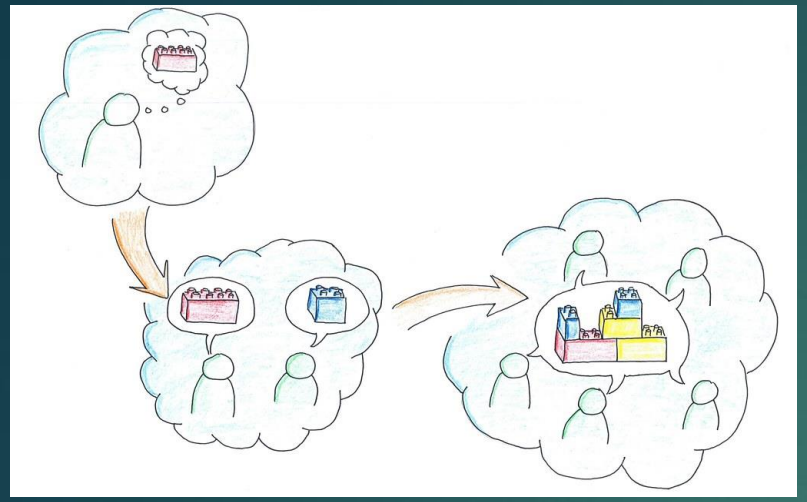


Simplexity

How complex things can be made simple

Agenda

- Leadership Styles and Student Achievement
- Educational trends over the years
- Curriculum Alignment
- Scheduled Review
- Formative Assessment
- The Rating Game
- Focus, Simplexity, Competence



Think, Pair, Share

What's your leadership style?

- e.g.
- Instructional
- Transformational
- Servant

Leadership Styles Correlation with Achievement

Instructional leadership refers to those principals who are hands on and hip deep in matters related to curriculum, instruction, and assessment. (Height of popularity:1980-1995)

Transformational leadership refers to those principals who focus on "purposing" by creating shared mission and vision, coupled with motivating commitment through distributed leadership. (Height of popularity: 1995 – Present Day)

- Marks (2013) found more than 80%of school leaders described themselves as transformational.
- Hattie (2015) notes about 5% to 10% of leaders describe themselves as instructional leaders.
- Hattie (2015) notes transformational leaders focus more on teachers and instructional leaders focus more on students and their learning.

Impact on Student Achievement

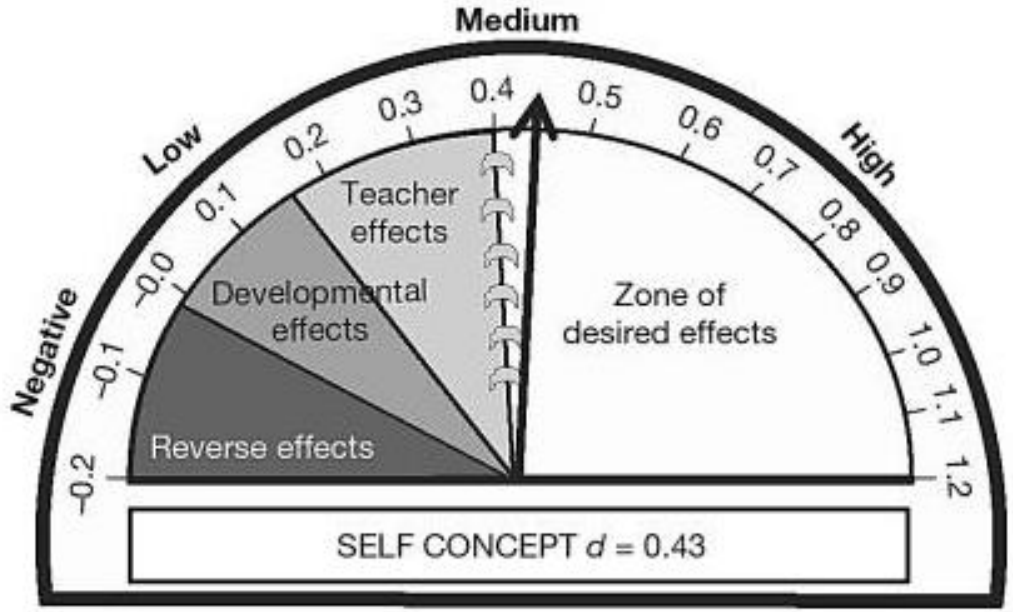
Reverse effects…actually do harm = -0.2 to 0

Effects from development and maturation alone = .0 to .15

Typical teacher effects on learning = .15 to .40

Zone of desired effects = .40 and above

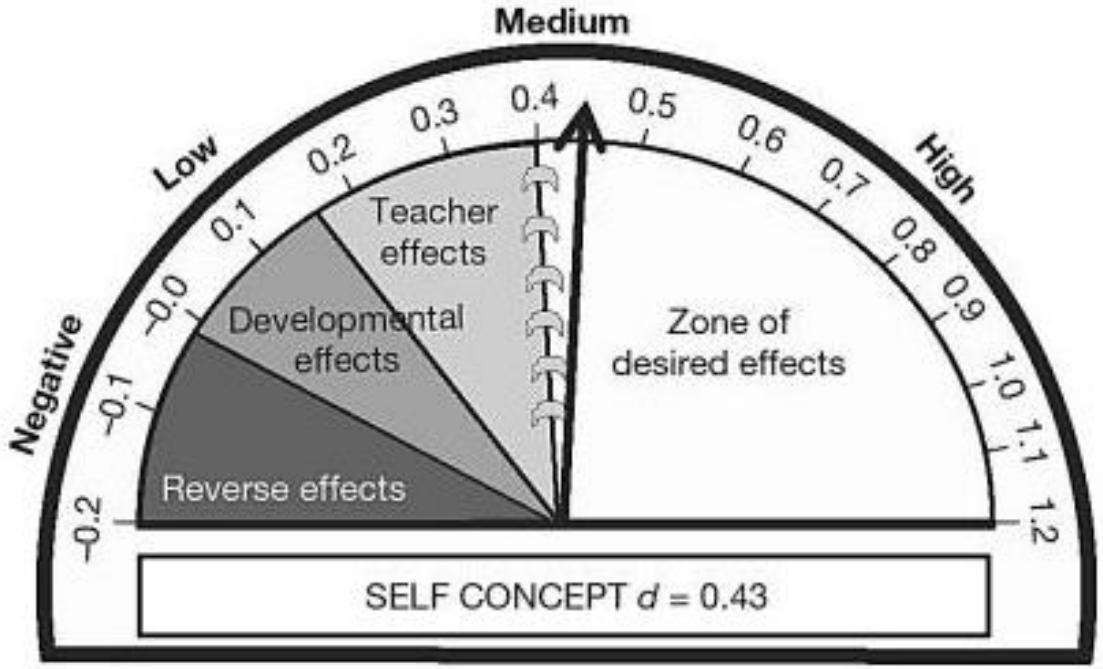
(Hattie, 2009)



Instructional Leadership Transformational Leadership **both/and** not **either/or**

"The meta-analysis indicated that the average effect of instructional leadership on student outcomes was three to four times that of transformational leadership." (Robinson et al., 2008)

"Instructional leaders focused on establishing goals and expectations; resourcing strategically; planning, coordinating, and evaluating teaching and the curriculum; **promoting and participating in teacher learning and development**, and ensuring an orderly and supportive environment" (Robinson et al., 2008).

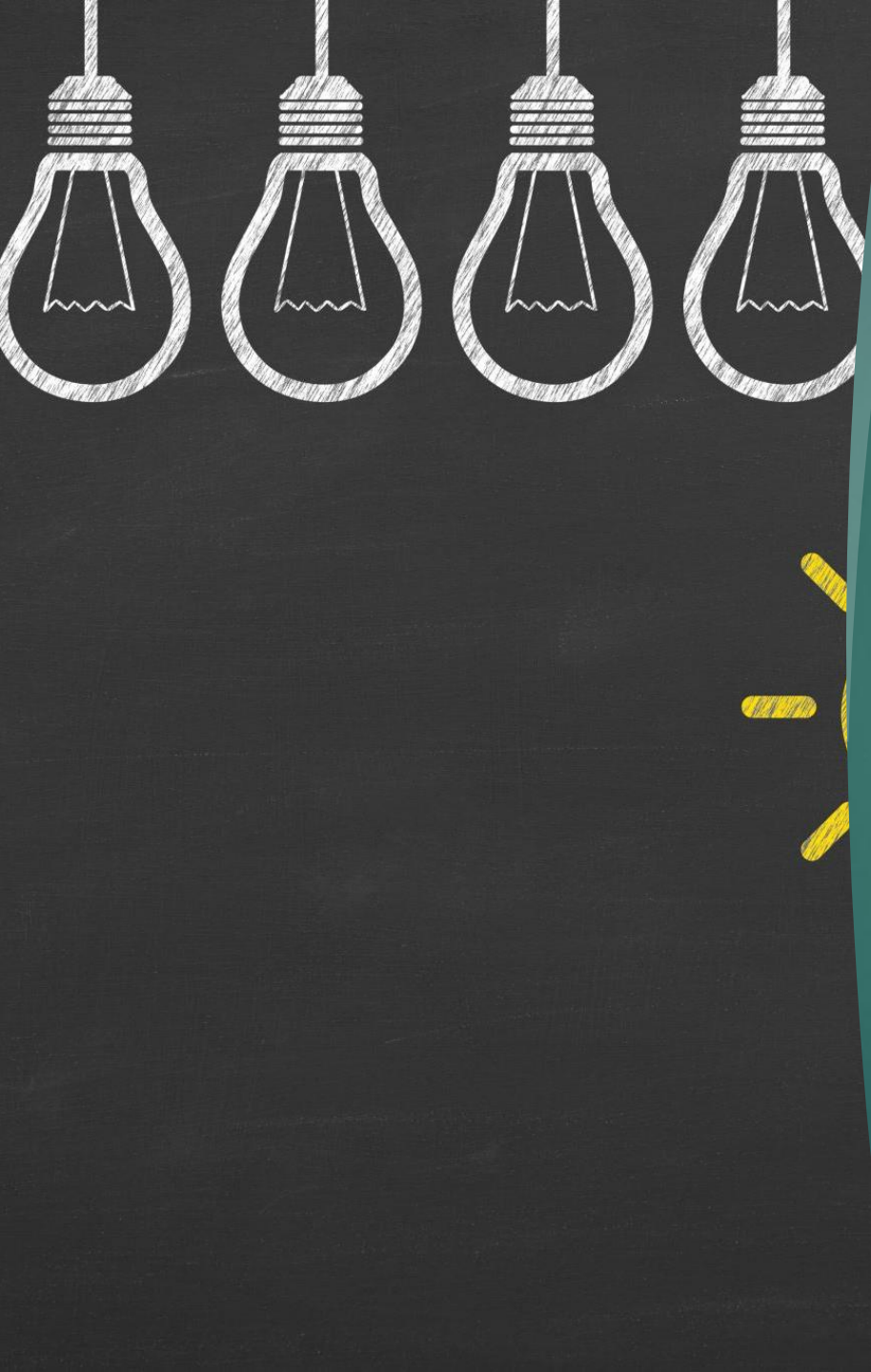


Instructional leadership - .42

Transformational leadership - .11

All Leaders – 0.30

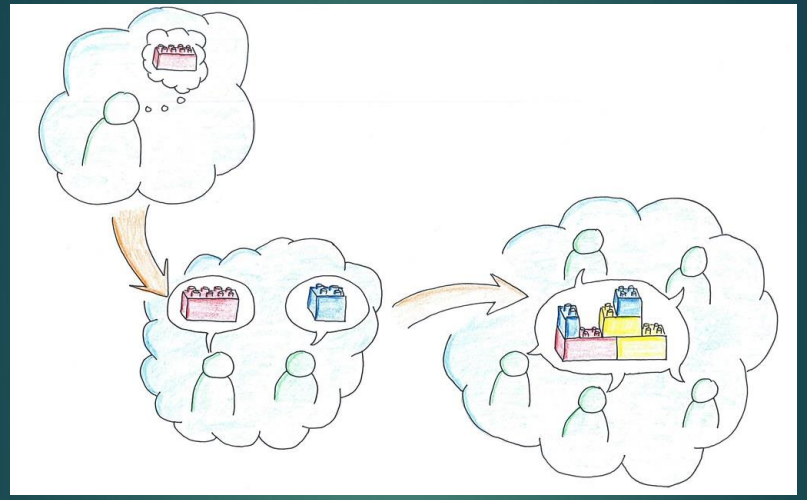
Robinson, Lloyd, & Rowe, 2008



What are the Highest Yielding Strategies to Promote Student Learning ?

100 Years of Educational Paradigms and Strategies…aka Complexity

Think, Pair, Share



What influences/strategies promote the highest level of learning?

If every teacher at my school would

_____, _____, and _____

our students would learn at much higher levels.

High Yield Strategies

Resources for generic strategies, applicable to all grade levels and subject areas:

- Classroom Instruction that Works – Marzano (2001)
- The Art and Science of Teaching – Marzano (2007)
- Improving Student Learning One Teacher at a Time – Pollock (2007)
- Visible Learning – Hattie (2009)
- Focus – Schmoker (2011)

Curriculum Alignment

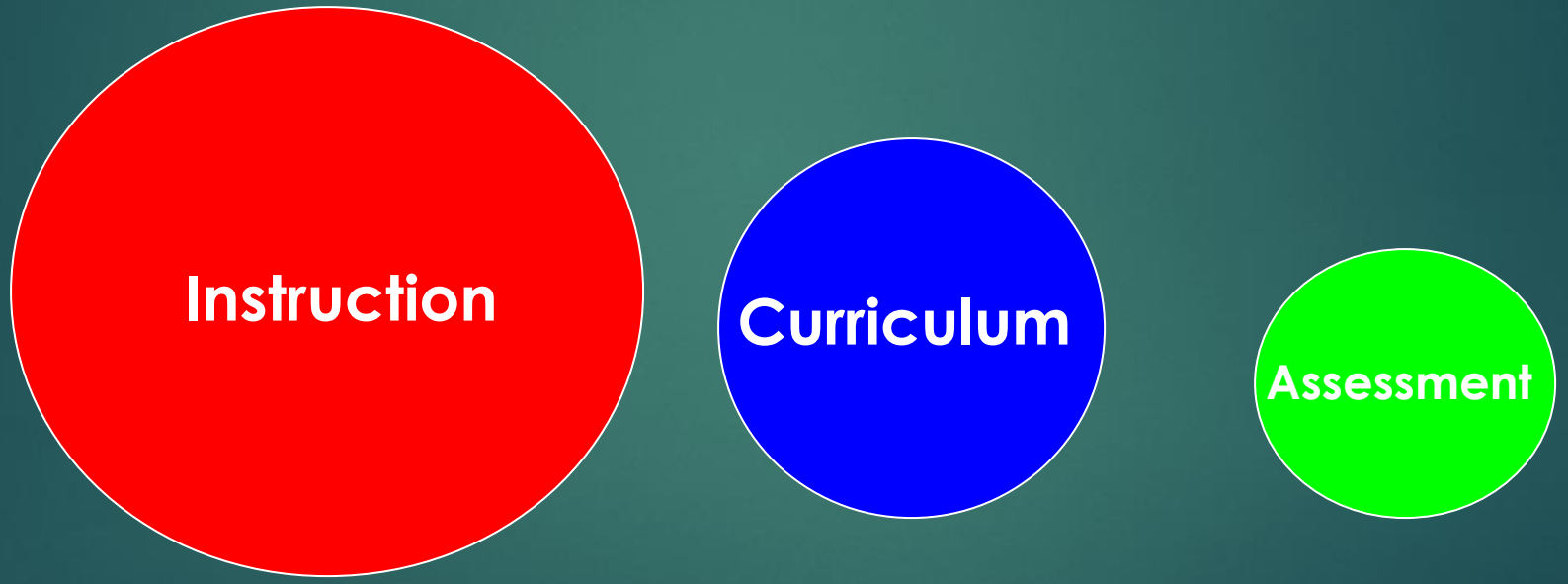
Distributed Practice

Formative Assessment

Simplexity

Curriculum Alignment

The Instruction, Curriculum, and Assessment Connection



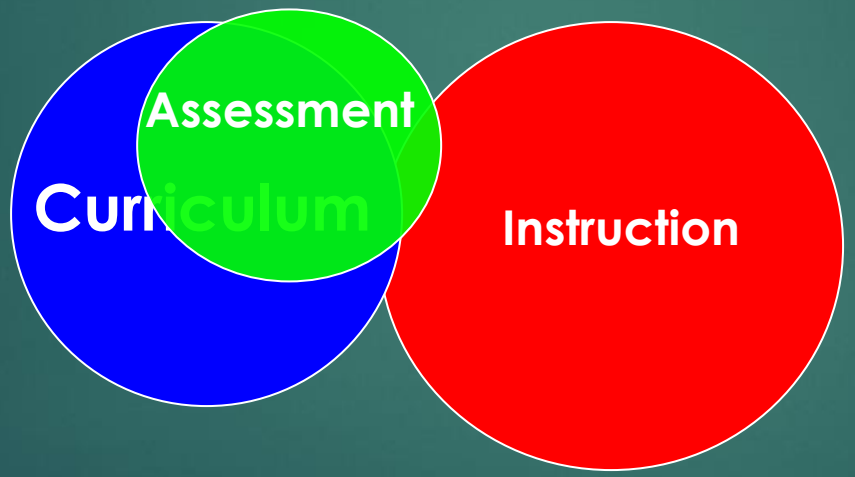
What we teach.

What we are told to teach.

What we grade.

The University Experience

Sociology 1000



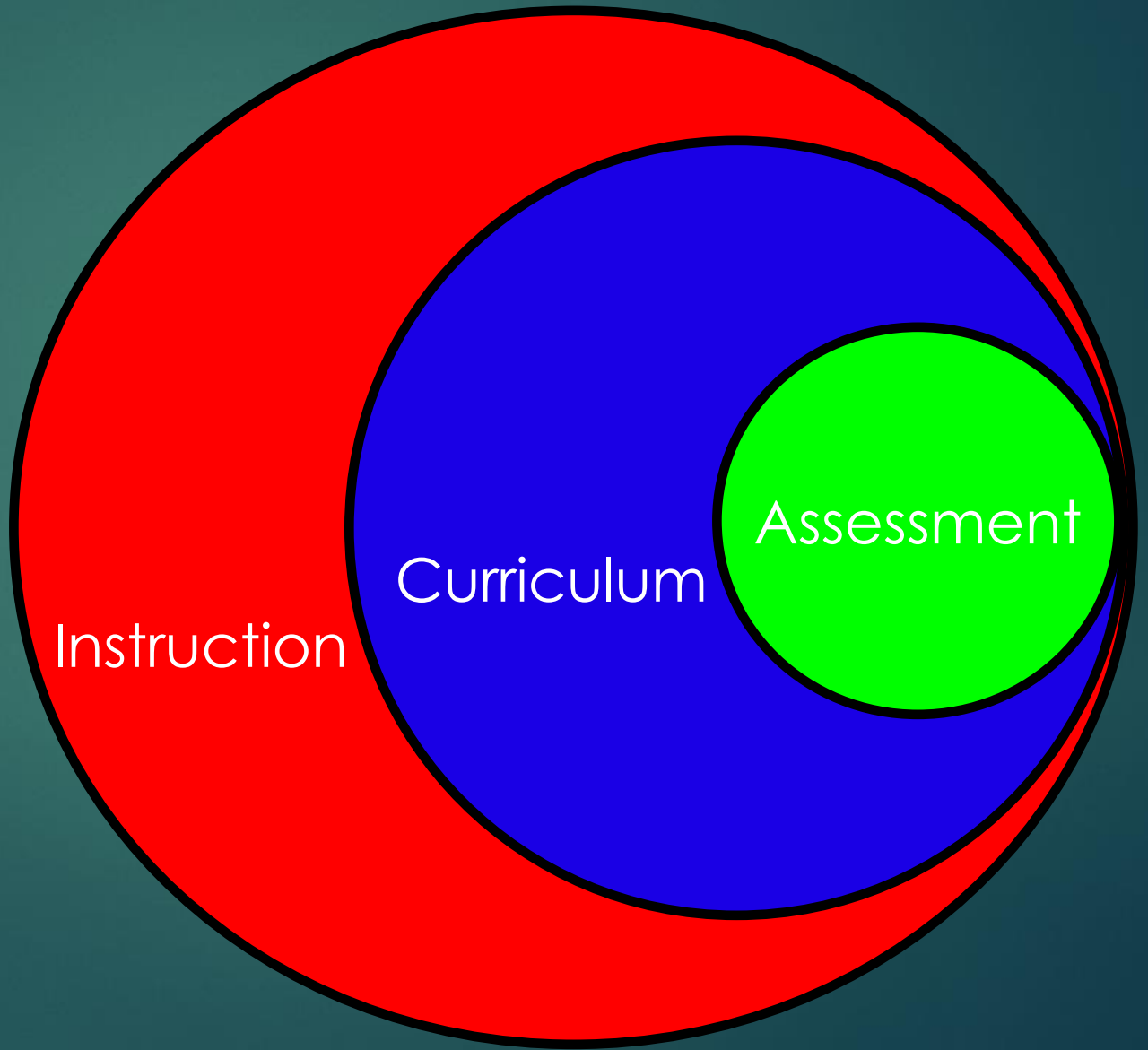
What did he assess?

Effective Curriculum Alignment

Teach all of the curriculum.

Teach knowledge and skills above and beyond the curriculum (instruction).

Asses what you teach (instruction) and, especially, what is in the curriculum.



The St. John's Story

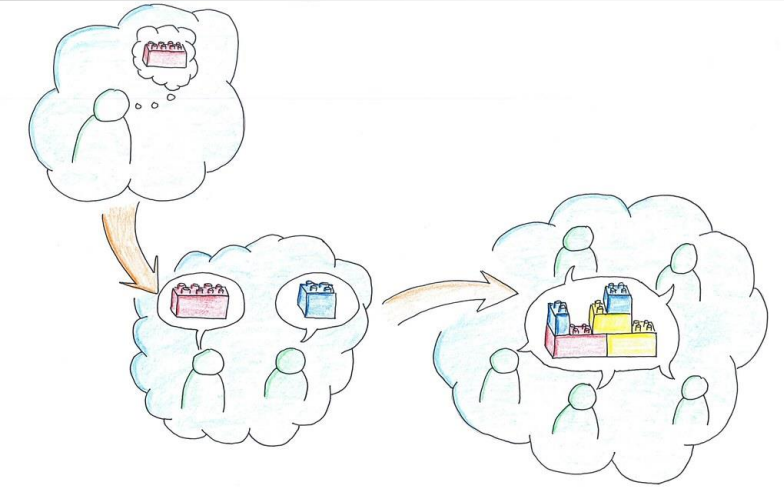
- Second year of teaching.
- Proof that "failure is not an option" strategies worked…results now!
- Social PAT year.
- Three units….six textbooks. Definitions and pages. Skills and pages. **Solution…A study guide and a skills guide.**

- **Discovery #1:** Concepts and not Facts: *Textbook:* Inventions and inventors of the Industrial Revolution in Britain and America. *Curriculum:* Domestic System > Mechanization > Industrialization > Urbanization.

- **Discovery#2:** Poor Alignment: Quality of Life – Physical.

- **Discovery #3:** How the other half lived without curriculum alignment while teaching Social 9 at Trinity…Tsars, Tsars, Tsars.

Think, Pair, Share…



To what extent do your teachers treat the curriculum as the genesis of everything that is taught?

Curriculum Support Documents

Gather teachers in teams/departments to create the guides collegially.

Step 1: Copy and paste every curriculum outcome into a Google Doc. Develop “I can statements” to put outcomes in student-friendly language.

Step 2: Define knowledge concepts. In math (and science), provide worked examples (illustrative examples) of questions for each outcome. In Language Arts, provide illustrative examples of learning activities that develop the outcome (e.g. predicting, clarifying, and summarizing before, during, and after reading).

Step 3: Identify resources that will be used by the teacher to help develop the objectives.

Step 4: Develop test questions and other forms of assessment for each curriculum objective.

Step 5: Identify the skills (e.g. critical thinking) and develop 3 to 5 seminal learning activities to continually practice and refine them.

Social Studies 30

SS 30: The Contemporary World

Topic A: Political and Economic Systems

Theme 1: Political and Economic Systems in Theory

a) Ideologies contain beliefs and ideas about human nature and are used to explain and justify political and economic systems.

Ideology - A systematic set of beliefs that provides a fairly thorough picture of the world that a group of people accepts as true. The key beliefs around which a political or economic system is centered. In general, there is a strong ideological difference between those who value individualism and collectivism. For example, the capitalist ideology values individualism and includes private property, free choice, and individualism, whereas communism values economic equality and collectivism. *(Global Systems - page 9)*

Individualism - A value held by supporters of a political or economic system that allows the individual goals to be emphasized over the needs of society. Capitalists and those who believe in democracy would support this value. Adam Smith's economic ideas justify this value because they emphasize the idea that when people pursue their own goals it will benefit all of society, because they work to provide the best products and services as they seek to make individual profit. Democratic political systems are aligned with this value because people have the freedom to choose the representatives they like the best. *(Global Systems - page 11)*

1. The belief that an economy must be based on the price system in order to function successfully places the greatest emphasis upon which of the following values?

A Empathy

B. Cooperation

C. Individualism

D. Social consciousness

Curriculum Objectives

Conceptual Knowledge Defined

Textbook References

Assessment of Objective

Application to English Language Arts

Technological Process:

- Identify 10 key outcomes: e.g. Preview complex texts for intent, content, and structure to help set purpose for reading.
- Identify the best practices or activities that allow students to meet those outcomes. Illustrative examples give basic ideas. Develop more.
- Teach outcomes using identified best practices and activities over and over and over…spiral curriculum.

"Language Arts, more than any other discipline, has lost its way. It is in desperate need of clarity. To that end, we need to simplify and reconceive standards." **(Schmoker, 2011)**

Naturalistic Process:

- Develop high quality, motivational, and stimulating learning activities.
- Block out a host of these learning scenarios and then determine which outcomes are met intentionally or ostensibly.

Curriculum Alignment and the Knowledge and Skills-based Curriculum

Organizing Idea

Guiding Question

Learning Outcome

- Knowledge
- Understanding
- Skills

Curriculum Alignment and Alberta's New Curriculum

- CTR's plan to prepare teachers to implement new curriculum…Curriculum Support Documents

Mathematics Curriculum Support Documents

Christ The Redeemer CATHOLIC SCHOOLS

Curriculum Support Documents – DRAFT Grade 1

Organizing Idea	Quantity is measured with numbers that enable counting, labeling, comparing, and operating
Guiding Question	In what ways can parts and wholes be related?
Learning Outcome	Students recognize one-half as a part-whole relationship

Knowledge	Understanding	Skills and Procedures
One half can be one of two equal groups.	In a quantity partitioned into two equal groups, each group represents one-half of the quantity.	Identify one-half in familiar situations. Partition an even set of objects into two equal groups.

Student Language (Key vocabulary/concepts to use with students)/I can statements

One-half, part, whole → I can show one-half of a pizza, cookie or a shape.
Fair share → I can share objects into 2 equal groups.

Achievement Indicators

- Cut or fold a whole into 2 equal parts representing a half.
- Describe everyday situations where one-half is used.
- Sort an even set of objects into 2 equal groups.

Resources	Building Background, Gaps, or Enrichment (Optional)
Mathology Number - Activity 22	

Illustrative Example Infusing Competency Progressions

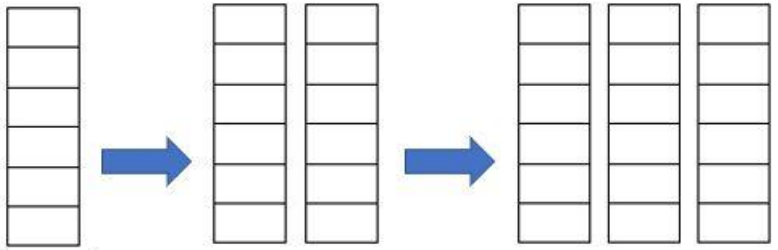
Chocolate Bar Sharing: An Open Mathematical Task (p 230 TMWM) Students demonstrate how to **fairly share** a chocolate bar(s) between 2 people. (Problem solving, Citizenship, Critical Thinking)

How could you fairly share a chocolate bar between 2 people?
How many pieces will each person get?
How do you know it is a fair share?
Explain which is the best way to share?

Start with 1 bar, then 2 bars, then 3 bars

- With second step, do students share the larger piece? Break it up

Remove lines and repeat.



Curriculum

Mathematics Curriculum Support Documents

Student Language (Key vocabulary/concepts to use with students)/I can statements
One-half, part, whole → I can show one-half of a pizza, cookie or a shape. **Fair share** → I can share objects into 2 equal groups.

Achievement Indicators
• Cut or fold a whole into 2 equal parts representing a half. • Describe everyday situations where one-half is used. • Sort an even set of objects into 2 equal groups.

Resources
Mathology Number - Activity 22

Illustrative Example Infusing Competency Progressions
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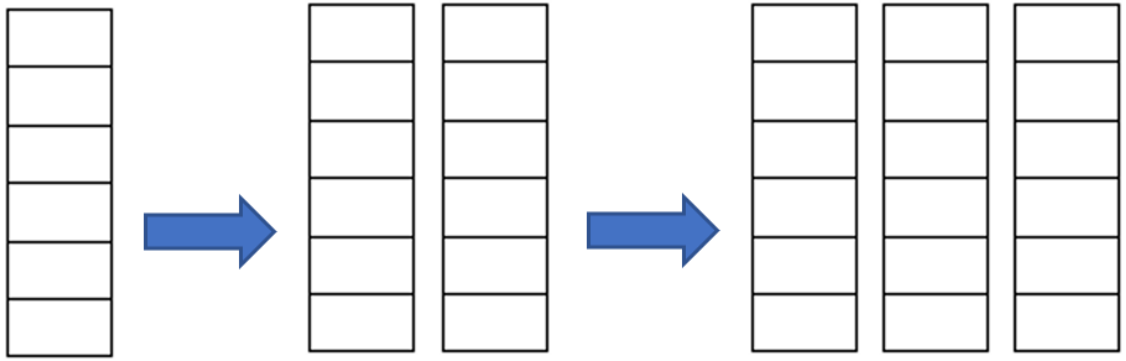


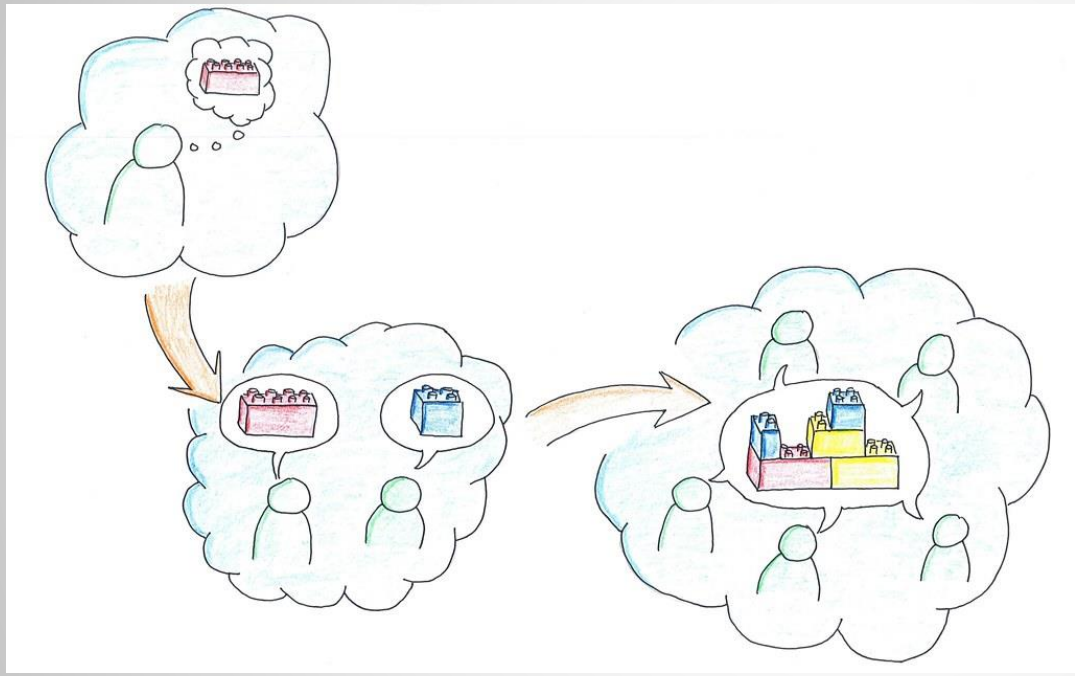
English Language Arts Curriculum Support Documents

Guiding Question	In what ways can listening and speaking be applied to develop oral communication?	Learning Outcome	Students develop listening and speaking skills through sharing stories and information.

This outcome means that students will:	Deepen Student Thinking:

Knowledge	Understanding	Skills & Procedures	High Yield Instructional Strategies (Mini-lessons, Routines)	Concepts
Listening involves maintaining attention and focus. Listening includes asking and responding to questions. Discussions involve listening and contributing. Listening processes can look different for individuals or within communities.	Listening is an active process that supports understanding.	Ask questions to clarify information during discussions. Respond orally to questions during discussions. Contribute to discussions as a listener and speaker. Listen to and follow two-step instructions.		
			Resources	

Think, Pair, Share…



How can you prepare teachers to implement the new curriculum?

Distributed Practice

AKA – Deliberate Practice

Distributed Practice – Distributed practice is the provision of multiple practice periods over a period of time. Without practice to reinforce it, 80% of new information is forgotten within 24 hours. With periodic reviews spread out over an extended period of time, such as four or five months, nearly all new information can be retained. The effect is cumulative: the more information a person has stored in memory, the easier it is for him or her to learn new information. This is because more items of information are available from which to form memory connections.

Content
Problem Solving
Creative Thinking

St. John's Story…Continued

- Curriculum Alignment Completed: Concepts defined, and skills broken into small chunks through scaffolding. Iterative process.

Domestic System - The production of products by hand in the home. This is how they produced goods before industrialization. The domestic method of production required highly skilled craftsmen, and they produced high quality products. The domestic system began to die out when mechanization and the **Factory System** began producing products more quickly and cheaply while using unskilled labourers. Though the factory system offered speed and low prices, the individuality, quality and care that was put in to domestically produced products was gone.

Writing an Essay Introduction:
Identify issue.
State competing sides and their values.
State your position.

- Teach exact curriculum concepts.
- Review. Review. Review….Concepts. **Scaffold and add to schemas about concepts at hand.** (This is remediation and enrichment combined).
- Practice. Practice. Practice…..Skills such as essay writing and analysis and evaluation of sources (charts, graphs, primary sources, cartoons, maps, etc.)

The Effects of Practice

Marzano, 2007

Hattie, 2019

Study	Focus	Number of Effect Sizes	Average Effect Size	Percentile Gain
Bloom, 1976	General Effects of Practice	13 8	.93 1.47	32 42
Feltz & Landers, 1983	Mental Practice or Motor Skills	60	.48	18
Ross, 1988	General Effects of Practice	12	1.26	40
Kumar, 1991	General Effects of Practice	5	1.58	44

Study	Focus	Average Effect Size
Hattie, 2019	Deliberate Practice	.79
Hattie, 2019	Space vs Massed Practice	.60

Implementation for Declarative x 3

Day 1	Day 2	Day 3	Day 4	Day 5
O1	O2 **01**	O3 O2 **O1**	O4 O3 O2 **O1**	O5 O4 O3 O2
Day 6	Day 7	Day 8	Day 9	Day 10
O6 O5 O4 O3 **O1**	O7 O6 O5 04	O8 O7 O6 O5	O9 O8 O7 O6	O10 O9 O8 O7 **O1**

Implementation for Procedural x24

Spiral Curriculum

Take the ten competencies and develop learning experiences and activities to revisit them time and time again.

Example: Competency of Critical Thinking = Analysis of political cartoons, graphs, charts, etc.

Scaffolded Instruction

Creating a foundation for learning, one piece at a time…break the task into its component parts and teach little by little.

Example: Skill of essay writing = thesis, opposing positions and values, statement of one's own position and underlying values.

Scheduled Review and Bloom's Taxonomy…

anything that is taught can be reviewed.

Knowledge – Recall social studies concepts.

Comprehension – Explain science concepts.

Application – Guided practice of the completion of math problems.

Analysis – Analyze messages of social studies political cartoons.

Synthesis – Formulate a hypothesis.

Evaluation – Evaluate the quality of an idea or piece of work.

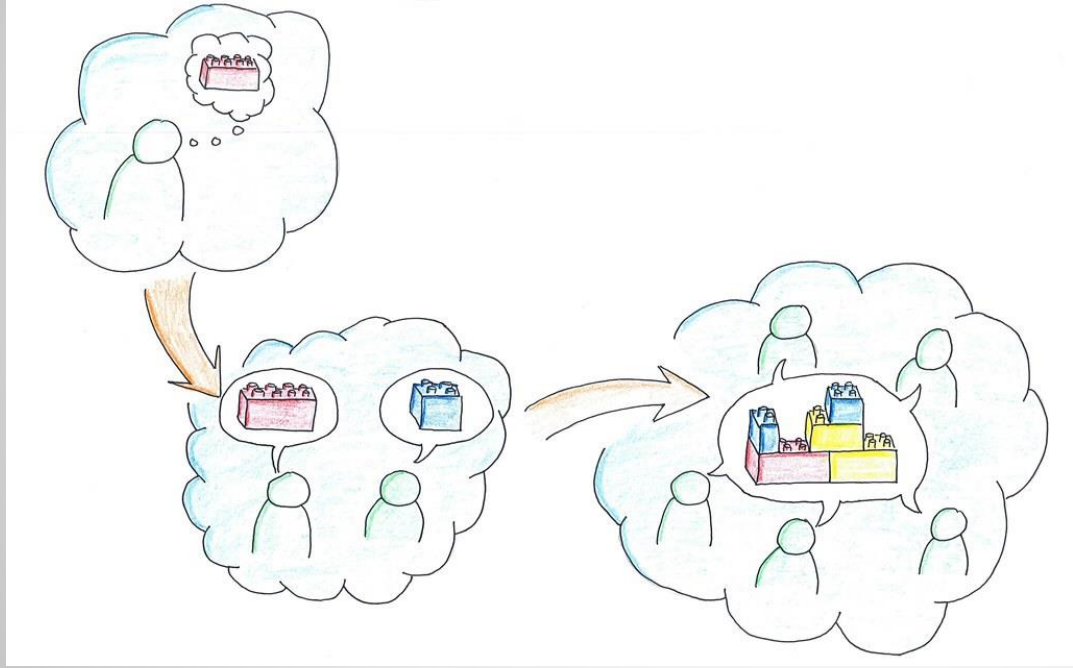
Distributed Practice

…best practices

- Wait time of 5 to 7 seconds
- Insist on high volunteerism
- Periodically call on non-volunteers
- Use turn-and-talk to prime the pump about new material
- Lower Level (knowledge/comprehension) first
- Higher level (analysis, synthesis, evaluation) second
- Skill review is like large group guided practice (I do, **we do**, you do)

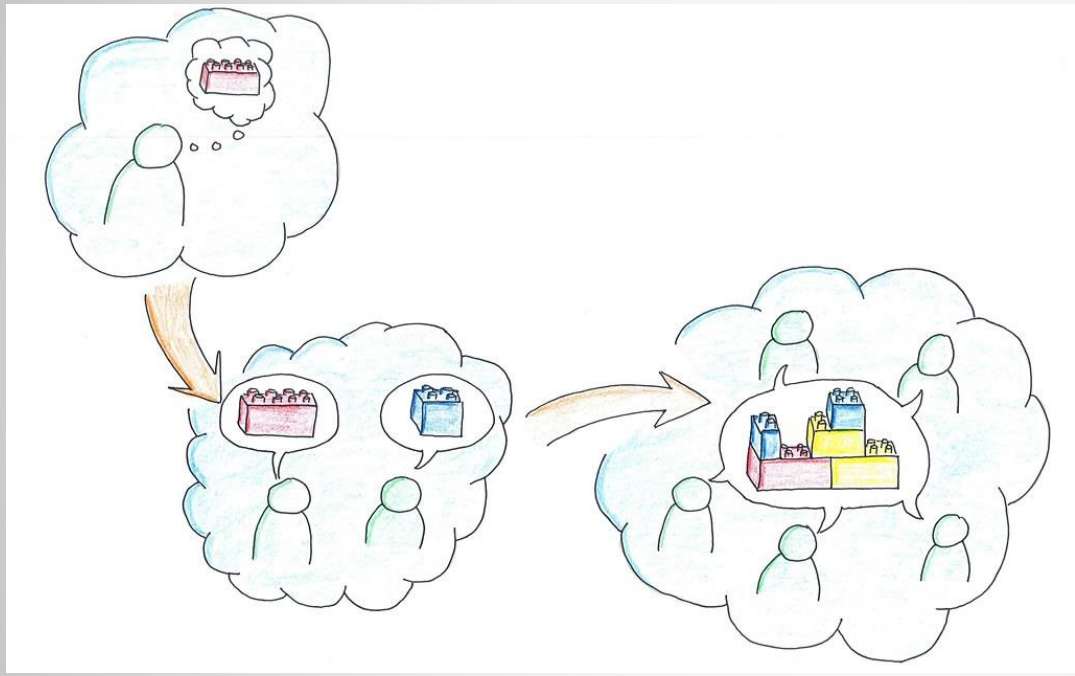
Think, Pair, Share
When exposed to distributed practice or massed practice, the students receiving _____ performed at the highest level.

What are the reasons for, or caveats about, the prediction you made?



Massed Practice…

Think, Pair, Share…



To what extent do your teachers make review and practice and intentional part of instruction?

Break Until 10:30

Frequent Formative Assessment

- Formative versus Summative.
- Formative for growth and Summative for grades.
- Research about impacts of Frequent Formative Evaluation (Marzano, 2007).

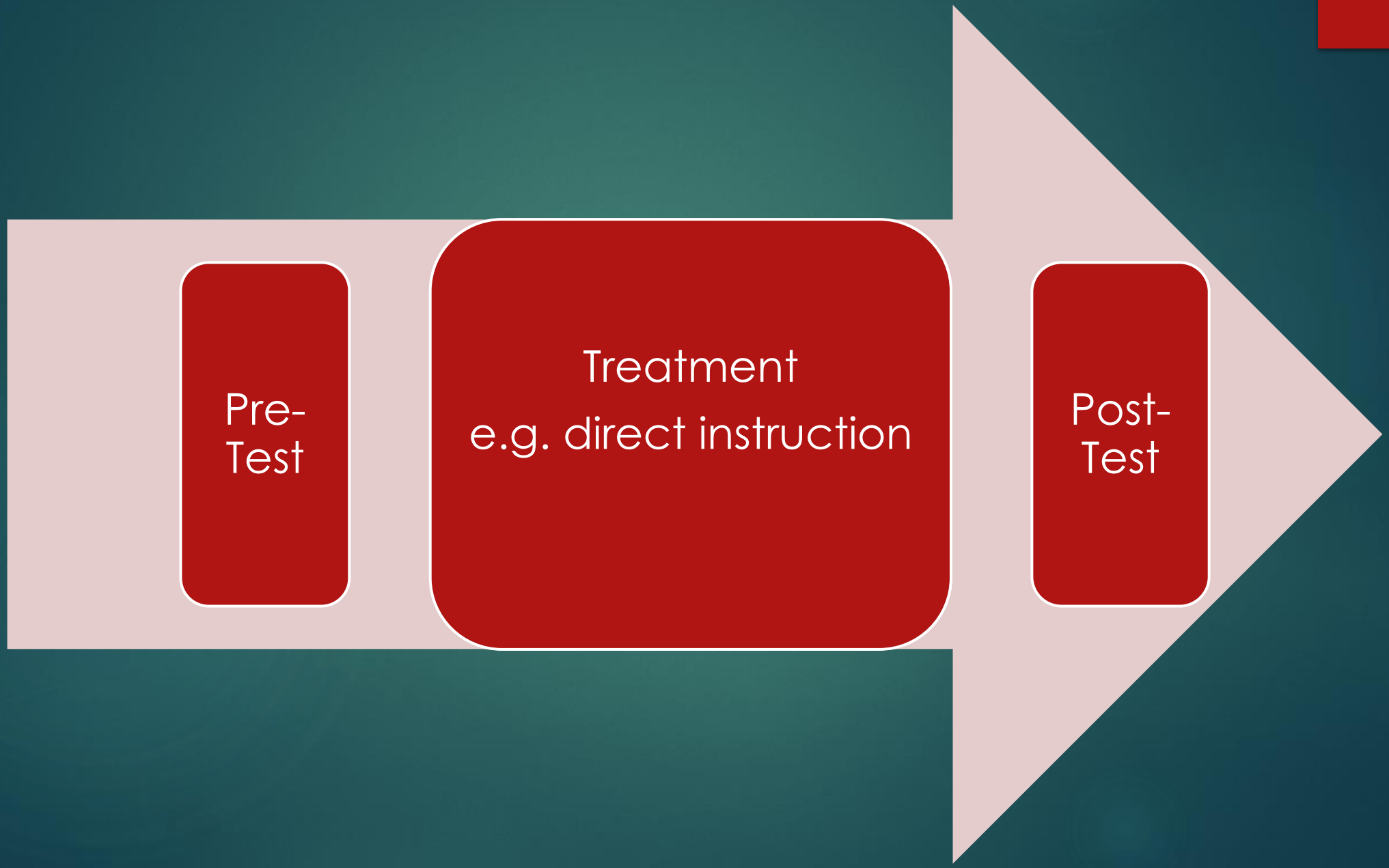
Number of Assessments over 15 Weeks	Percentile Gain
0	0
1	13.5
5	20
10	22.5
15	24.5
20	26
25	28.5
30	29

St. John's Story…Continued

- Identified curriculum concepts and skills.
- Reviewed and practiced.
- Assessed every day with review.
- Assessed every week with a short criterion referenced concept quiz. Criterions were curriculum concept definitions and skill demonstrations (e.g. introductory paragraph construction; source analysis of political cartoons, charts, and graphs).
- Used the results to inform my instructional decisions.
- So what happened on the PAT that year?

The Rating Game

Research Method



Hattie's Method

Study = one experiment one influence

Meta-analysis = multiple studies on one influence

Hattie = multiple meta-analyses on one influence

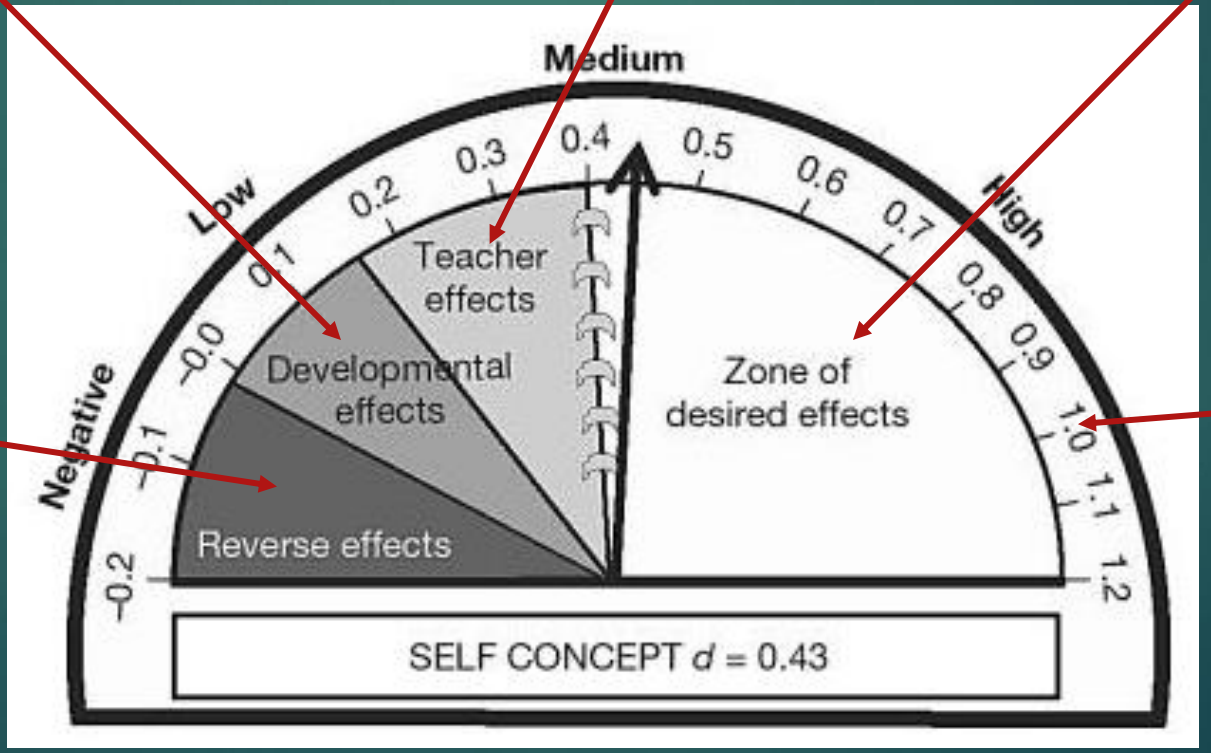
Impact on Student Achievement

Teacher effects
the average teacher's impact
0.15 to 0.40.
i.e. homework 0.29

Developmental effects
development & maturation
0.0 to 0.15.
e.g., tracking/streaming .12

Zone of desired effects
greatest impact on learning
0.40 and above
e.g., Self-Efficacy .92

Reverse effects actually do harm
-0.2 to 0.0
e.g., Retention -0.32



An effect size of 1.0 is equal to 1 SD and typically equates to 2 to 3 years of growth or improving a child's learning by 50%

Hattie's Quotes from Visible Learning

Almost everything works. Setting the bar at zero is absurd.

Thus, any effects below .15 can be considered potentially harmful and probably should not be implemented.

Teachers typically can attain between .15 and .40 growth per year. Hattie considers this average.

Educating is more than teaching people to think – it is also teaching people things that are worth knowing.

Innovation does not occur merely because it is something new or different. Innovation occurs when a teacher makes deliberate action to introduce a different (not necessarily new) method of teaching, curriculum, or strategy that is different from what he or she is currently using.

Conceptual Goal

Inductive concept attainment activity where you come to a conceptual conclusion at the end rather than having it presented at the beginning.

Misconception

Educators are often naturally inclined to embrace new instructional strategies that appeal to them as "expert" adult learners (e.g., problem-based learning, inquiry learning, inductive teaching), but these strategies sometimes do not have the desired impact on "novice learners" unless they have sufficient background conceptual and procedural knowledge.

*References are from Hattie's (2009) *Visible Learning* unless otherwise indicated. Effect sizes are from Hattie's (2019) updated list of effect sizes available online.

Round One

- **Open Education versus Traditional**
- **Inquiry Based Teaching**
- **Deliberate Practice**

Open Education versus Traditional

The Education Development Center (EDC) developed a model derived from the British Infant School and focused on building the child's responsibility for his own learning. Reading and writing are not taught directly, but through stimulating the desire to communicate. Flexible schedules, child-directed choices, and a focus on intense personal involvement characterize this model (Carnine, 2006).

Some open programs emphasize open space as an essential feature of good practice, others teaching practices (such as the use of individual and small group instruction and manipulatives) and the role of the student. Some common features of open education are: 1) The emphasis on the role of the child in learning; 2) Diagnostic evaluation; 3) Use of manipulatives; and 4) individualized instruction.

Inquiry Based Teaching

Inquiry based teaching is the art of developing challenging situations in which students are asked to observe and questions phenomena; pose explanation of what they observe; devise and conduct experiments in which data are collected to support or contradict their theories; analyze data; draw conclusions form experimental data; design and build models; or any combinations of these. Inquiry is meant to be open ended with no single answer being "right" but rather involve students in the process of observing, posing questions, engaging in experimentation or exploration and learning to analyze and reason.

Deliberate Practice

Increasing the rate of correct responses to deliberative practice opportunities until minimal levels of mastery (defined by success criteria) are met. Deliberative practice can involve specific skills and complex performances, and the attainment of success criteria can be motivating and lead to longer retention of sometimes over-learned surface and deep knowing. Students need three or four exposures to the new learning – usually over several days – before there is a reasonable probability they will learn.

Round One

- **Open Education versus Traditional**
- **Inquiry Based Teaching**
- **Deliberate Practice**

Round Two

- **Individualized Instruction**
- **Reciprocal Teaching**
- **Student Control Over Learning**

Individualized Instruction

"Individualization refers to instruction that is paced to the learning needs of different learners. Learning goals are the same for all students, but students can progress through the material at different speeds according to their learning needs. For example, students might take longer to progress through a given topic, skip topics that cover information they already know, or repeat topics they need more help on" (US Department of Education, 2010).

Reciprocal Teaching

Reciprocal teaching was designed to improve learning outcomes (initially in reading comprehension). The emphasis is on the teacher enabling their students to learn and use cognitive strategies such as summarizing, questioning, clarifying, and predicting. These are supported through dialogue between the teacher and student as they attempt to gain meaning from text. The teacher and student take turns leading a dialogue about the text. Students check their own understanding of the material they have encountered by generating questions and summarizing. Expert scaffolding is provided for cognitive development as students move from spectator to performer after repeated modeling by adults. The aim, therefore, is to help students actively bring meaning to the written word, and assist them to learn to monitor their own learning and thinking. *Enhanced Reading

Student Control Over Learning

The effect of student choice and control over learning is somewhat higher on motivation outcomes than subsequent student learning. The more instructionally irrelevant choices had higher outcomes (colour of pen to use or what music to listen to). Such irrelevant choices are less effortful and do not have major consequences on the learning, and too many choices may be overwhelming.

Round Two

- **Individualized Instruction**
- **Reciprocal Teaching**
- **Student Control Over Learning**

Round Three

- **Direct Instruction**
- **Discovery-Based Teaching**
- **Questioning**

Direct Instruction

Direct instruction is often confused with a didactic teacher talking from the front. Actual direct instruction has seven steps: 1) Learning outcomes are clearly defined…what should students know and be able to do; 2) The teacher has clear idea of success criteria of performance and shares them with the students; 3) A hook is used to build commitment and engagement; 4) There are guides for the teacher on how they present lessons including input (information presented through lecture, film, video, pictures, etc, modeling (teacher shows students examples of what's expected and an end product of their work through labeling, categorizing, and comparing to exemplars of what's desired), checking for understanding, and practice (after the teacher is certain students understand) ; 5) There is guided practice under close teacher supervision who checks for mastery and offers feedback and individual remediation; 6) There is closure where attention is given to brining it all together; 7) There is independent practice.

Discovery-Based Teaching

"Discovery-based teaching/learning challenges students to solve *authentic* problems or acquire complex knowledge in information-rich settings based on the assumption that having learners construct their own solutions leads to the most effective learning experience. Second, they appear to assume that knowledge can best be acquired through experience based on the procedures of the discipline" (as cited in Kirschner et al., 2005).

Questioning

Questioning is a major way teachers get feedback on student understanding. Questions are designed to improve comprehension, learning, and memory of the material. Skilled questioning by teachers can guide students to thoughtful and reflective answers and so facilitate higher levels of academic achievement. After teacher talk, questioning is the second most dominant teaching method. Many teachers feel their role is to impart knowledge. The acquisition of this knowledge is done through repetition, memorization, and recall: hence the need for questioning to ensure the students have recalled the information. Higher cognitive questions (e.g. synthesis or evaluation) were found to have a small positive effect on leaning measures. Lower level factual questions facilitate the acquisition of surface level information while a mixture of higher and lower level questions are more effective when aiming at deeper information and understanding. Teachers' questioning may not elicit deep thinking from students because students know teachers already know the answers.

Round Three

- **Direct Instruction**
- **Discovery-Based Teaching**
- **Questioning**

Round Four

- **Problem Based Learning**
- **Formative Evaluation**
- **Matching Styles of Learning**

Problem Based Learning

There are six principles: 1) Learning is student centered; 2) Learning occurs in small groups; 3) A tutor is present as a facilitator or guide; 4) Authentic problems are presented at the beginning of the learning sequence; 5) The problems encountered are used as tools to achieve the required knowledge and the problem solving skills necessary to eventually solve the problem; and 6) New information is acquired through self-directed learning. Student background knowledge related to the problem has an impact on how well problem based learning helps students learn.

Formative Evaluation

Formative evaluation is the attention to the purposes of innovations, the willingness to seek evidence to improve teaching innovation, the keenness to see the effects on all students, and the openness to new experiences that make the difference.

Matching Styles of Learning

The presumption is different students have differing preferences for particular ways of learning. The claim is that when teaching is aligned with preferred or dominant learning styles, learning is enhanced. The author is dubious about the impact, despite the relatively strong effect.

Round Four

- **Problem Based Learning**
- **Formative Evaluation**
- **Matching Styles of Learning**

What do the high-yield influences have in common?

How about the low-yield influencers?

High-yield influencers are often simpler to learn, easier to implement on the fly, and are often teacher-activated, rather than teacher-facilitated…**simplexity.**

Low-yield influences are often student-centered, teacher-facilitated, harder to learn, and more challenging to implement in the classroom…**complexity**.

Round Five

- **Study Skills**
- **Conceptual Change Programs**
- **One-to-One Laptops**

Study Skills

These are strategies such as teaching students to take notes and summarize information. Metacognitive strategies can also be used a study skills and include planning how to approach a given learning task, evaluating progress, and monitoring comprehension.

Conceptual Change Programs

Conceptual change programs involve introducing a commonly held misconception, or determining what students' misconceptions are, and addressing them before the unit of study begins. The misconceptions are corrected as students learn new information.

One-on-One Laptops

"One-to-one laptop classrooms showed increased frequency and breadth of use of technology by students, more individualized learning, more use of projects, and increase in the quantity of writing undertaken by students as well as an increase in the variety of genres students were expected to produce, and improved relationships between students and teachers and home and school. One-to-one laptop environments were found to promote the acquisition of: individual and collaborative learning skills; problem-solving skills; information, media, and technology skills" (Eldridge, 2018). Note, Eldridge, a writer for the journal *The International Educator*, notes, "Teachers need time to understand the possibilities afforded by the new approaches and adjust their practice accordingly".

*Eldridge did a review of a meta-analysis in the *Review of Educational Research (2018)* for an article in the journal, *The International Educator*.

Round Five

- **Study Skills**
- **Conceptual Change Programs**
- **One-to-One Laptops**

What's the most expensive?

Round Six

- **Collective Teacher Efficacy**
- **Whole Language**
- **Repeated Reading Programs**

Collective Teacher Efficacy

The belief all staff have that they can produce higher levels of learning, and that belief is shared by all the faculty. Paraphrasing Hattie (2018), "It is groups of teachers, working together, **fed with their evidence of impact**. It's not when teachers just get together and talk about kids, curriculum, and resources. It's also not just about growth mindset, rah, rah. This is hard work…getting together and understanding how we're going to have an impact on students. It's having the strong belief that I cause learning…I am the reason students learn. It's having the feeling you can impact learning, supported by evidence you are.

https://www.youtube.com/watch?v=UCMV692itfg

Whole Language

The whole language approach to reading instruction is based on the idea that the acquisition of reading skills depends on the context in which these skills are presented. Individual words are learned more easily and fluently when presented within a particular context. The words gather meaning from other words around them and from the structure of the story.

Repeated Reading Programs

In repeated reading programs short, meaningful passages are re-read until a satisfactory level of fluency is reached. Studies have been completed on both reading comprehension and fluency.

Round Six

- **Collective Teacher Efficacy**
- **Whole Language**
- **Repeated Reading Programs**

Round Seven

- **Phonics**
- **Integrated Curriculum Programs**
- **Mindfulness**

Phonics

Phonics instruction teaches beginning readers the alphabetic code and how to use this knowledge to read words. In systematic phonics programs, a planned set of phonics elements is taught sequentially. The set includes the major correspondence between consonant and letters and sounds, short and long vowel letters and sounds, and vowel and consonant digraphs. It may also include blends of letter sounds that form larger sub-units in words.

Integrated Curriculum Programs

Integrated curriculum programs involve thematic instruction and a focus on process skills. They are much more effective at elementary and middle school, than at high school, but this effect size includes all three levels.

Mindfulness

"Mindfulness is is paying attention to the present moment with openness, curiosity and without judgement…directing attention to the current experience with an attitude of self-kindness and acceptance. With repeated practice, students become more attentive, make better decisions about what to give their attention to, and improve their mental health and engagement with learning….The research evidence suggests that practicing mindfulness strengthens brain area related to attention. This leads to improved emotional regulation, mental health, and cognition. These improvements are found both in adults (including teachers) and in school students. Students who improve in mindfulness programs also show improved academic performance, investing only 6% of the school day in mindfulness practice is associated with an increase of approximately 16% relative to peers mental health and academic performance" (Smiling Mind, 2018).

Round Seven

- **Phonics**
- **Integrated Curriculum Programs**
- **Mindfulness**

Round Eight

- **Reducing Class Size**
- **Classroom Discussion**
- **Strategies to Integrate with Prior Knowledge**

Reducing Class Size

There are ample arguments for both sides. One side argues that reduced class size leads to more individualized instruction, higher quality instruction, grater scope for innovation and student-centered teaching, increased teacher morale, fewer disruptions, less student misbehaviour, and more engagement. On the other side, there is voluminous literature that does not support the claim that learning outcomes are enhanced when class size is reduced.

Classroom Discussion

"Classroom discussion is a method of teaching, that involves the entire class in a discussion. The teacher stops lecturing and students get together as a class to discuss an important issue. Classroom discussion allows students to improve communication skills by voicing their opinions and thoughts. Teachers also benefit from classroom discussion as it allows them to see if students have learned the concepts that are being taught. Moreover, a classroom discussion creates an environment where everyone learns from each other" (Bruski, 2019).

Strategies to Integrate with Prior Knowledge

Integrating with prior knowledge involves find out what students know and grounding all new learning in accessing that prior knowledge. Typical strategies are K,W,L charts, brainstorming sessions, and traditional pre-tests.

Round Eight

- **Reducing Class Size**
- **Classroom Discussion**
- **Strategies to Integrate with Prior Knowledge**

What's the most expensive?

Round Nine

- **Teacher Subject Matter Knowledge**
- **Inclusion**
- **Teacher Clarity**

Teacher Subject Matter Knowledge

Teacher subject matter knowledge is a combination of the teacher's subject knowledge and pedagogical knowledge. Shulman (as cited in Hattie, 2009) asserts "pedagogical content knowledge is the basis of effective teaching" and that "teaching begins with a teacher's understanding of what is to be learned and how it is to be taught".

Inclusion

The least restrictive environment is the regular classroom and inclusive practices place students with special needs in the regular classroom. It is often supported for reasons such as equity and social justice reasons rather than in terms of optimal effects on the learning of these students. Full inclusion means that special needs students can and should be educated, with appropriate support, in the same settings as their peers. This, claim advocates, leads to increased expectations by teachers, more peer interaction, more learning, and greater self-esteem.

Teacher Clarity

Teacher clarity involves organization, explanation, guided practice, and assessment of student learning. Clearly communicating the learning intentions and success criteria of the lesson by describing the skills, knowledge, attitudes, and values that students need to learn.

Round Nine

- **Teacher Subject Matter Knowledge**
- **Inclusion**
- **Teacher Clarity**

What's the easiest to implement?

Round Ten

- **Teacher as Facilitator (Constructivism)**
- **Teacher as Activator (Instructivism)**

Teacher as Facilitator (Constructivism)

- Simulations and gaming
- Inquiry-based teaching
- Smaller class sizes
- Individualized instruction
- Problem-based learning
- Different Teaching for Boys and Girls
- Web-based learning
- Whole language – reading
- Inductive teaching

Teacher as Activator (Instructivism)

- Reciprocal teaching
- Feedback
- Teacher students self-verbalization
- Meta-cognition strategies

- Direct instruction
- Mastery learning
- Goals – challenging
- Behavioral organizers

Round Ten

- **Teacher as Facilitator (Constructivism)**
- **Teacher as Activator (Instructivism)**

What have most high impact influences had in common?

Hattie's List of Effect Sizes

HTTPS://VISIBLE-LEARNING.ORG/HATTIE-RANKING-INFLUENCES-EFFECT-SIZES-LEARNING-ACHIEVEMENT/

Focus

"...(Some) leaders resist simplicity; they are often irrationally enamored with novelty and complexity, which prevents them from focusing on and implementing their core priorities…Unfortunately, many leaders have a natural prejudice against 'old ideas and simple prescriptions' – even though, if implemented, these old simple ideas are the key to better results. Many leaders would rather launch new initiatives, regardless of their effectiveness. Why? Because it distracts them from the harder work of seeing to it that their highest, simplest priorities are implemented – actually done" (as cited in Schmoker, 2011, p.16).

Focus

"In contrast, successful organizations aren't enamoured with novelty, technology, or complexity; they know that success depends largely on implementing what is already known. They know that 'simple prescriptions' conveyed with clarity and simplicity are the hallmarks of effective action and leadership...It is critical that schools learn the lesson that 'best practice' in effective organizations is rarely *new* practice. On the contrary, the most effective actions are well known practices, with the extra dimension that they are reinforced and carried out reliably" (as cited in Schmoker, 2011, p.16).

Thank-You