

EMPOWER your Teaching:
Using Cognitive Apprenticeship through
Inquiry Strategies to Promote Student
Motivation, Deep Reading, Composing,
Discussion and Learning!

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Based on materials from
Wilhelm, Jeffrey ENGAGING READERS
AND WRITERS WITH INQUIRY
(Scholastic, 2007)
Smith and Wilhelm, READING DON'T FIX
NO CHEVYS (Heinemann, 2002)

Smith and Wilhelm, GOING WITH THE FLOW (Heinemann, 2006)

Conditions of FLOW experience

- A clear Purpose, Goals and Immediate Feedback

- A Challenge that requires an appropriate level of skill and Assistance to meet the challenge (as needed to be successful)

- A sense of Control and Developing Competence

 - voice, opinion, identity staking, choice, naming growing competence

- A focus on Immediate Experience

 - current relevance, make things, do things, immediate function, fun, humor

- Importance of the Social

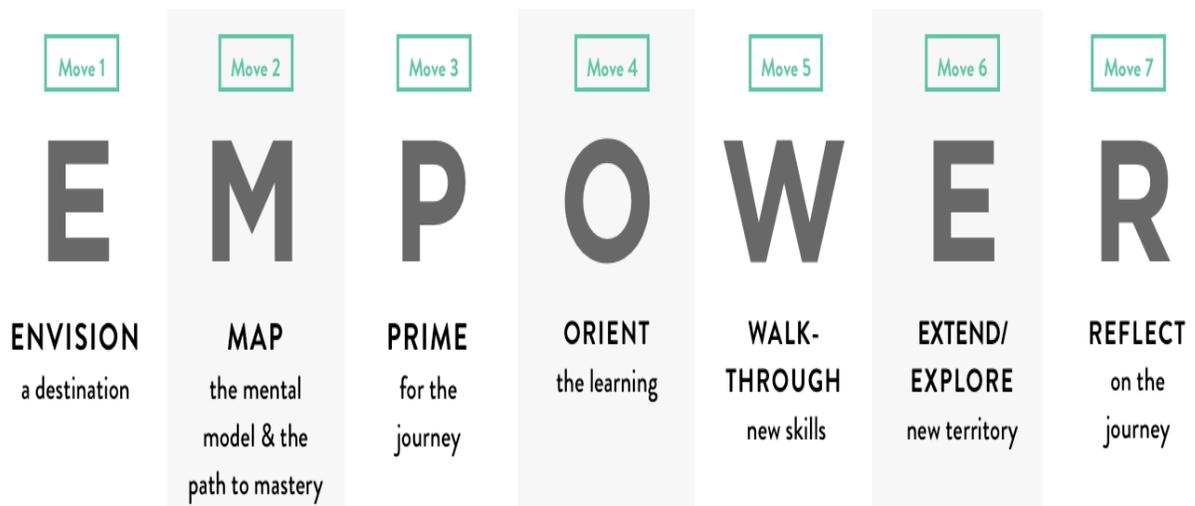
 - group work, peer assistance, social purpose, negotiate and share what is learned

 - relationships with authors, peers, characters, teachers

 - Social contract: get to know me, care about me, address my interests, assist me and don't give up, be passionate,

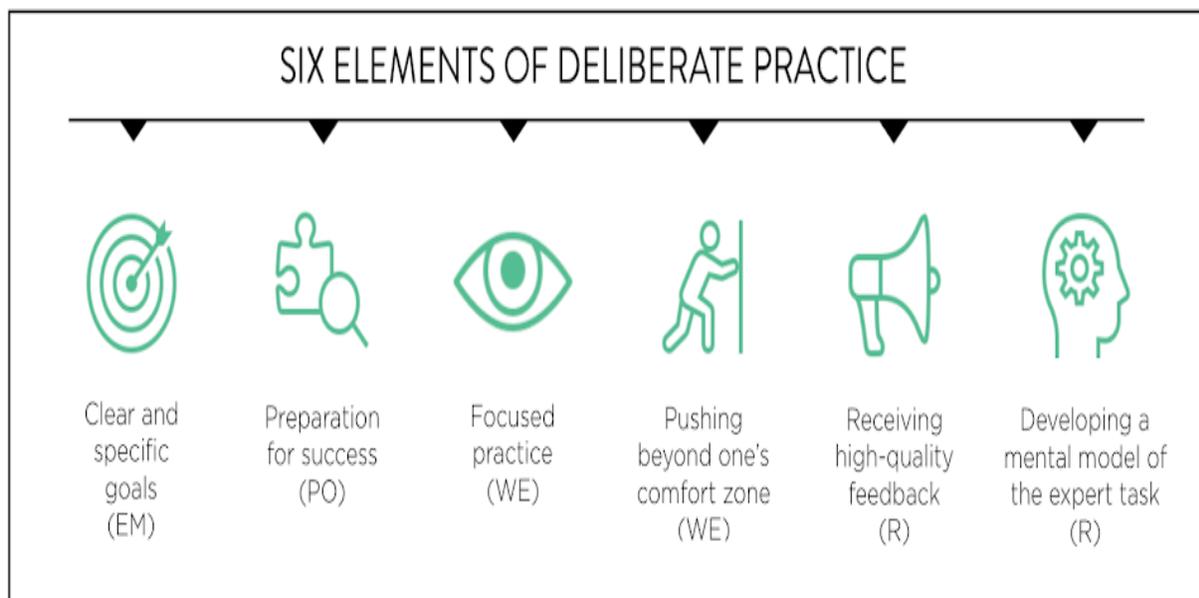
Q. What kind of curriculum meets these demands?

A. Inquiry through Cognitive Apprenticeship!



EMPOWER mirrors the latest research from cognition, cognitive science, developmental psychology, optimal experience, motivation, growth mindset, development of expertise, learning model effectiveness, etc.

E.g. This is how EMPOWER captures Anders Ericsson’s latest research on the development of expertise:



EMPOWER CANVAS HERE

Inquiry Unit Template #1

Curricular Topic or Text:
ENVISIONING AND MAPPING

Essential Question:	
<ul style="list-style-type: none">• Personal connections/points of contact for students:•• Disciplinary importance:•• Possible resulting social actions:•	
Conceptual Knowledge: <ul style="list-style-type: none">• (What you want the students to know and be able to talk about and think with as conceptual tools)	Procedural Knowledge: <ul style="list-style-type: none">• (What you want the students to be able to do and perform)
<ul style="list-style-type: none">• PRIMING AND ORIENTING Frontloading Activities:	
<ul style="list-style-type: none">• WALKING THROUGH/APPRENTICING: Scaffold of Activities: For exploring and practicing concepts - leading to capacity to complete culminating project - demonstration of developed understandings in actual accomplishment• Curricular coherence – how does one activity lead to the next; how does one activity make use of knowledge developed in previous ones (layering!).	

<ul style="list-style-type: none"> • Activities 	<ul style="list-style-type: none"> • Connection to Conceptual and Procedural Knowledge 	<ul style="list-style-type: none"> • Formative Assessments and proof of one's learning
<ul style="list-style-type: none"> • 		<ul style="list-style-type: none"> •

<ul style="list-style-type: none"> • EXTENDING AND EXPLORING: Working towards the Culminating Project 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Extension Activities • • Composition/Meaningful Making Project Description: 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • REFLECTION/APPLICATION 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Opportunities for Formative Assessment throughout the unit • Opportunities for Procedural Feedback <p>Possible Multimedia and Social Action Extensions of the Writing Assignment/Culminating Project:</p> <p>Transfer of applications to this and other disciplines and to personal experience</p>	<ul style="list-style-type: none"> •

3S+6MsHEURISTIC

PROCESS FOR TEACHING INQUIRY

1. SET UP (START)

MOTIVATE – with Essential Question and Frontloading, personally connect kids to content

2. STANDARDS (OR STOPPING POINT/STOP)

MULTIPLE MODALITIES AND MEASURES – Provide multiple ways for learning and demonstrating learning of the standards/end goals/ enduring understandings through independent culminating projects

3. SEQUENCE (SCAFFOLD)

MODEL – for – Teacher does/students watch

MENTOR – with – Teacher does/students help and students do together/teacher helps

MONITOR – by – Student does/Teacher assesses and helps as needed

Asking Essential Questions to Frame Instruction

“Being told is the opposite of finding out.”

-Jimmy Britton

“The only thing worth learning is learning how to learn.”

-Seymour Papert

Question Criteria:

*must be open-ended; contended; with multiple perspectives and possible answers

*non-judgmental

***emotive force/intellectual bite or edginess- addresses students' point of view**

*immediate relevance and use to students – will lead to enduring understandings

*succinct and pointed

*data is available – can be ascertained and developed

*not so general as to be undoable; not so specific that it can be answered quickly

***addresses the “heart of the discipline” being studied and essential disciplinary knowledge**

*should lead to new questions asked by the students

***should lead to transformed ways of understanding, being and behaving in the world – both individually and as part of collective social action**

Tips for Generating Questions

Tip: Put Standards into Question forms

Asking Macro-Questions – Wiggins and McTighe

Wiggins and McTighe critique most standards as being too vague, focusing on the rote learning of information, and as not identifying what constitutes adequate evidence of learning.

Put standards into question forms ... p. 27

Tip: Reframe a required text, topic or standard by focusing on why it matters!

Tip: Ask questions of application!

Tip: Inquiry and Design – What questions drive the disciplines?

What problems inform current research?

Tip: Consider the heart of the matter. What is the true importance of this curricular topic? Why do I love teaching it? What must kids remember and carry away regarding it?

Tip: Look around the community for issues that intersect with the topic.

Tip: Ask questions about quality that require students to make judgments

Tip: Ask Ethical questions – what should we pursue? What should we do with the knowledge we have?

Model Guiding Questions

Social problems/health

What is waste and its effects?

Who is hungry and what are its effects?

What is a good house?

What does it mean to be healthy?

Cultural issues:

What are the cost and benefits of the emphasis on sports in American culture?

Language arts

What is courage? What is a good relationship?

Where do I belong? What is normal? How does power affect people?

Physics

Where do waves come from? How can waves be used?

Biology

How do geography and climate affect the growth of crops? Of animal populations? Of human populations and culture?

Why do organisms die? How are we similar to bacteria?

Is sex necessary, biologically speaking?

History/Cultural Values

Who was/is a great person? When are laws fair?

What is worth fighting for? Are wars necessary?

Where does money come from?

Is U.S. history a history of progress?

Government

Is there too much or too little national power?

Can liberty and security be balanced?

Does federalism work? What is a good government?

Math

Was geometry discovered or invented? (or any other kind of math)

How can we best figure rates of decay? (or any other kind of problem)

Questions of application: How can we apply our understandings to solve a particular problem? What makes the best deal? (ratios)

Tips for identifying culminating projects

- What's it (the topic, central concepts, procedures) for today?
- What's it for tomorrow?
- What “*work*” does it/could it do?
- How do you foresee and want kids to use it?
- When, where and in what situations can this knowledge be used?
- For Social Action: what changes do you and/or your students want to see and how can you work for this?
- Come up with a project that will capture (or be analogous to) these powers and purposes!

Meaningful Making Projects		
Formal Writing	Multimedia Compositions	Social Action Projects
Arguments	Video documentaries	Show video documentaries publicly
Extended Definitions	Hypermedia documentaries	Host public debate
Process Descriptions	Video How-To Guides	Volunteer work
Classifications	Websites	Hot-line project
Narrative Retellings	Digital stories	Peer Mediation Project
Fables	Multimedia Personality Profiles	Local Hero celebrations
Stories	Digital scrapbooks	Lake clean up project
Picture Books	Webquests	Park clean up project
Big Books	Museum exhibits	Create and maintain exhibit in local museum
Brochures	Museum kiosks	Senior Citizen visits/help days
Public Service Announcements	Public Service Announcements on Video or dramatized	Disseminate the public service announcements
Pamphlets	Timelines	Host or participate in community meetings
Dictionaries/Glossaries	Video glossaries Picture dictionaries	Present proposals to school board, city council, service groups
Guides	Murals	Letter writing campaign
Newspaper; articles	News Show/Talk Show	Thank you campaign
Case Studies	Dance performance	Waste free school project
Poetry book or cycle	Computer programs	Informational campaigns
Multigenre research	MTV videos of poems	Build: Repair or Rebuild something, e.g. engine; engine model, cabinet
How-to guides	Multigenre compositions	Career research: shadow a police officer, view medical procedures, compile interviews into manuscript
Travelogues	Public performance: concert, recital, painting, living history museum, fashion show, meeting of minds	Physical experience or challenge: learn to scuba dive, run a marathon, lose weight

Frontloading

Ranking Scenarios: What makes a good relationship and what screws them up?

Each of the following scenes describes a relationship. Read each scene and rank them from the scene that describes the best love relationship (1) to the scene that describes the worst love relationship (3). Make sure you can support your opinions. You'll be sharing them in groups and then with the whole class.

___ 1. Joseph always felt uneasy at parties, especially parties that included people from Forest View. Forest View was Elk Grove's chief rival in every sport, and Joseph and his friends have been competing against kids from Forest View for as long as he could remember. And sometimes those competitions got pretty heated. So who could blame Joseph for saying his good-byes early. As he was headed out the door, however, Joseph caught a glimpse of Sara. Even all decked out in Forest View's colors, she was, Joseph thought, the most beautifully girl he had ever seen. Screwing up his courage, Joseph went over to say hello. And it wasn't long before he was involved in a friendly conversation with Sara and several of her friends. An hour flew by and Joseph really did have to go home. But he felt changed. Monday at school he confided to his best friend that he was in love, and with someone from Forest View on top of it. The kidding he got was intense; he and his best friend even got into a fight about it. But Joseph was sure. He couldn't wait to see her again. He spent all week searching to find a party that she might attend.

___ 2. Mary and Martin have been next-door neighbors since the fifth grade and for seven years they've walked to school together. Since high school started, thought, once they got to school, they went their separate ways – Mary was an athlete and Martin a musician. But on that mile walk they shared a lot of talk about everyday events, hopes, dreams and heartbreaks. The senior prom was approaching and neither Mary nor Martin had a date. They decided to go together. It was funny, they broached the subject on the same day, and in fact, they couldn't figure out who asked whom. The prom was great; they laughed and danced and kidded with their friends. They didn't go on an after-prom trip though. They had decided that would make them seem too much like a couple, and they didn't want any uncomfortableness to interfere with their friendship. That night both of them thought that the prom was one of the best dates they had ever had. It was too bad that their "real" dates never went so well.

___ 3. What a whirlwind of a romance, thought Amy. Ever since she had met Tom, things had been, well, fantastic. Nightly phone calls. Dinners at expensive restaurants. Gifts. She didn't mind that Tom insisted she spend all of her time with him. After all, her friends should understand, and if her grades slipped a bit, who cares? She'd always be able to get into some college. She had a bit of a twinge when he asked her not to go out for the musical, but the dozen long-stem roses made that twinge fade. What a romance!

Autobiographical Writing Prompt

Most young people want to have dating relationships that are fun, exciting, and long lasting. First, describe a healthy, lasting dating relationship that you've been part of or that you've observed. What does a relationship need to be like in order to grow and last? Why do some relationships seem to work well? Be specific, and remember to write about real relationships that you yourself have experienced or watched. (from Brian White, 1995)

Opinionaire/Survey

Identify whether you agree (A) or disagree (D) with each statement. Then choose one statement that you feel particularly strongly about and write a brief comment about what in your experience of the world leads you to feel this way.

1. Love at first sight is possible.
2. Love means never having to say you are sorry.
3. It is better to have loved and lost than never to have loved at all.
4. You are never too young to fall in love.
5. You can't expect a person to change his or her habits after you enter into a relationship with them.
6. Love takes a lot of hard work.
7. Opposites attract.
8. If you are really in love, physical appearance doesn't matter.
9. Teenagers are capable of true love.
10. The hottest fires burn out fastest.
11. If you are really in love, then you won't be attracted to someone else.
12. Love is blind.
13. If someone does not return your affection, the best thing to do is to keep trying to change his or her mind.
14. You have to work very hard at love.
15. Love is a decision that you make, not something that happens to you. (original idea from Kahn, et al. *Writing About Literature*, 1984)

COGNITIVE APPRENTICESHIP AND SEQUENCING

KEY PIECES TO INSTRUCTION” ACCORDING TO COLLINS, BROWN AND NEWMAN

Note : Problem/solving is the process students are engaged in while learning new strategies or concepts

1. CONTENT

- a. Content = conceptual/factual knowledge in use during problem solving
- b. Heuristic strategies - rules of thumb that guide problem solving, gives students the intellectual tools needed
- c. control strategies - monitoring, evaluating, helping with decision -making
- d. Learning strategies - strategies used in acquiring new information
- e. Genre/Text Based strategies - strategies required by particular kinds of text

2. METHOD

- a. Model and Think aloud - expert carries out task so students can observe the process
- b. Coach - feedback, hints, reminders, scaffolding
- c. Scaffold - supports --teacher carries out pieces of task that students cannot yet manage
- d. Articulation - name what students need to do; and make it visible to them.
- e. Reflection - compare own problem solving process to expert or other student
- f. Exploration - teacher fades, encourage student autonomy in problem solving and problem setting. Allow students to set questions and frame process

3. SEQUENCE

- a. Increasing complexity - control both task complexity & the amount of scaffolding/support for learnings
- b. Increasing diversity - wider variety of strategies/skills integrated in different contexts
- c. Global before local (very different than traditional education, which says local before global)- see the whole, the value, the purpose **before** refining/honing each sub skill
- d. Teacher Involvement - models, scaffolds, coaches, then fades as students approach independence

4. SOCIOLOGY - designed to motivate and “ground” learning

- a. Situated learning = give students opportunity to observe, engage in, invent or discover expert strategies in context: see how strategies fit together with their conceptual knowledge. Clear expectations and learning goals: skills seen in context

of application to problem solving. Skills used in an integrated way that shows their value & meaning within the culture

Application conditions: knowing when to use or not to use a skill

b. Culture of expert practice. See models of expertise-in-use. Benchmarks of progress, helps students to identify their own strengths & weaknesses for improvements, see different ways of doing things.

c. Intrinsic motivation; there is an integration of skill improvement & social reward in traditional apprenticeship: students see advancing skill as increasing role/participation/social reward within a community. Skills are seen as authentic and purposeful.

d. Exploiting cooperation; use small groups to help see others doing a process, apprentices/students at different levels of expertise

3. Exploiting competition: get students to see the different processes students use to accomplish problem solving, not the products.