Approaches to Successful Learning: The Perry Scheme of Intellectual Development

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My Credentials

- Bachelor’s in math
- Masters’ in philosophy & in computer science
- Ph.D. in philosophy
- Taught 7th grade → Ph.D. students & faculty
- Taught math, philosophy, computer science, cognitive science, even English composition!
Survey
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  • but not cheating!
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      – **Giving/telling** someone the answers **is not** teaching!
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    • If not at a university, then at a “real-world” job:
      – Talking to your boss about your work
      – Making oral presentations to colleagues
4 Approaches to Successful Learning

• All 4 used by everyone
  – At different times in life
  – In different areas of life
  – Sometimes simultaneously

• Some are more appropriate for some people in some circumstances

• Identifying a student’s approach can help you to help the student
• **Remember…**
  – what it was like for **you** to be a student
  – which teachers you had who were:
    • good *(do what they did)*
    • bad *(don’t do what they did)*

"I can't wait till I'm in the eighth grade and know all there is to know."
The Perry Scheme

- William Perry:
  - head of counseling, Harvard, 1950s
- “What stands out for you over the last year?”
- Discovered 9 “positions” from which students viewed knowledge & learning
- Has been replicated & adjusted
  - Cf. Belenky et al. (1986), Women’s Ways of Knowing
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There are right/wrong answers to all questions, known to Authorities
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1. **Basic Dualism:**
   - All problems are solvable
     - Solutions on Golden Tablets in sky
     - Only Authorities (= teachers) have access
   - Student’s task = to learn right solutions
A. **Dualism / Received Knowledge:**

There are right/wrong answers to all questions, known to Authorities

1. **Basic Dualism:**
   - All problems are solvable
     - Solutions on Golden Tablets in sky
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   - Student’s task = to learn right solutions

2. **Full Dualism:**
   - Some authorities (literature, philosophy) disagree
   - Others (science, math) agree
   - There are correct solutions but some teachers’ views are obscured
   - Student’s task = to learn right solutions
     - And ignore others?
CALVIN & HOBBES

I'VE GOT TO WRITE A REPORT FOR SCHOOL.

WHAT'S YOUR TOPIC?

BATS. CAN YOU IMAGINE ANYTHING MORE STUPID?

HECK, I DON'T KNOW ANYTHING ABOUT BATS. HOW AM I SUPPOSED TO WRITE A REPORT ON A SUBJECT I KNOW NOTHING ABOUT? IT'S IMPOSSIBLE.

I SUPPOSE RESEARCH IS OUT OF THE QUESTION.

OH, LIKE I'M GOING TO LEARN ABOUT BATS AND THEN WRITE A REPORT? GIVE ME A BREAK!
DOONESBURY

...AND IN MY VIEW, JEFFERSON'S
DEFENSE OF THESE BASIC RIGHTS
LACKED CONVICTION, OKAY. ANY
DISCUSSION OF WHAT I'VE
COVERED SO FAR?

SCRIBE! SCRIBE! SCRIBE!

OF COURSE NOT.
YOU'RE TOO BUSY
GETTING IT
ALL DOWN.

by Garry Trudeau

LET ME JUST ADD THAT PERSONALLY
I BELIEVE THE BILL OF RIGHTS TO
BE A SILLY, INCONSEQUENTIAL
RECAPITULATION OF TRUTHS
ALREADY FOUND IN THE CON-
STITUTION. ANY COMMENT?

SCRIBE! SCRIBE! SCRIBE!

NO, SCRATCH THAT! THE CONSTITUTION
ITSELF SHOULD NEVER HAVE BEEN
RATIFIED! IT'S A DANGEROUS
DOCUMENT! ALL POWER SHOULD
REST WITH THE EXECUTIVE!
WHAT DO YOU THINK
OF THAT?

SCRIBE! SCRIBE! SCRIBE!

JEFFERSON WAS THE
ANTI-CHRIST! DEMOCRACY
IS FASCISM! BLACK IS
WHITE! NIGHT IS DAY!

SCRIBE! SCRIBE! SCRIBE!

TEACHING IS DEAD.

SCRIBE! SCRIBE! SCRIBE!

BOY, THIS COURSE IS
REALLY GETTING
INTERESTING.
YOU SAID IT. I DIDN'T
KNOW HALF THIS STUFF.
For dualistic students …

• Instructor:
  – Seen as the only legitimate source of knowledge

• Themselves:
  – Seen as receivers & demonstrators of knowledge

• Other students:
  – Not seen as legitimate sources of knowledge

• On evaluation:
  – Wrong answer = bad person
  – Evaluation should be clear-cut

• Support:
  – Need high degree of structure
    • Dualistic students like lectures, hate seminars
Voices of Dualism

• Cornell undergrad (NY Times):
  – “Every lecture course, no matter how bad, has taught me more than any seminar, no matter how good. In a lecture, you get taught by an expert, which means the information is credible. But in a seminar, most of the information is from other students like yourself, which leads to discussion that is irrelevant & suspect in accuracy. [In seminars,] profs don’t like to tell students directly that they are ‘wrong,’ [or] ‘correct,’ so one can leave a seminar confused & not knowing any more than when one entered.”

• Dualism confronted by Multiplism
• Alienation?
Voices of Dualism (continued)

- “I’m lost in CS 341 [computer architecture]; the professor lacks a clue.”

  – I.e., it’s the prof’s fault; he’s the Authority
Are Science Disciplines* Dualistic?

• Leon Henkin (math, UC/Berkeley): NO!
  – “One of the big misapprehensions about math that we perpetrate in our classrooms is that the teacher always seems to know the answer to any problem that is discussed.
  – “This gives students the idea that there is a book somewhere with all the right answers to all of the interesting questions, & that teachers know those answers, & if one could get hold of the book, one would have everything settled.
  – “That’s so unlike the true nature of math”

* Or science, or engineering, or health professions!!
B. Multiplicity/Subjective Knowledge: There are conflicting answers; \[ \therefore \] trust “inner voice”, not external Authority
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3. **Early Multiplicity**

- There are 2 kinds of questions (a kind of dualism):
  - Those with answers that we know **now**
  - Those with answers that we don’t know **yet**

- Most knowledge is known.
  - There are **right/wrong ways** to find answers to the other questions (another kind of dualism)
  - Student’s task =
    to learn **right ways to find** correct solutions
How did your talk with Hilary go?

I wish I could say something that would make her happy about school...

But she keeps telling me how she has no friends and I keep searching in vain for the right thing to say.

You can't always have the solution, Sal.

Maybe, but I have to let my daughter know one exists.
"I still don't have all the answers, but I'm beginning to ask the right questions."
For early multiplists …

• Instructor:
  – Seen as source of right way to get knowledge

• Themselves:
  – Seen as learning how to learn
  – Seen as working hard

• Other students:
  – Seen as in the same boat / ∴ OK

• On evaluation:
  – Of central concern
  – Quantity of work counts
  – Fairness is important

• Support:
  – from peers, some structure
Voices of Dualism Confronted with Multiplism

“I really enjoyed this course. I had lots of trouble till about 2/3 into the course, because I was looking for answers. Once I realized there were no answers & you had to figure things out for yourself, it became easier.”
“TAs should use the Prof’s method of solving problems rather than using their own, which confuse us more, but if the method is simpler & easier to understand, then it’s OK, I guess, to introduce their own method of solving.”
Voices of Multiplism

“You know, it seems to me that there are 2 different kinds of things we study—things where there are answers & things where there aren’t any!”
Voices of Multiplicity (continued):

“There are many of us students who spend from 3–9 hours working on one lab assignment. When we get our grades back, they don’t meet our satisfaction. I spend a lot of time thinking, & trying out my program. When I get a D, I get upset. Maybe the grade should include more effort than if the program runs properly.”

– quantity is more important than quality
4. Late Multiplicity

a) **Less cynical form:**
   - Most problems have no *known* solution
   ∴ Everyone has a right to their own opinion

b) **More cynical form:**
   - Some problems are *unsolvable*
   ∴ Doesn’t matter which (if any) solution you choose
   • Student’s task = to B.S.
   • Most freshmen?
SOMETIMES I LIE AWAKE AT NIGHT, AND I ASK, "IS LIFE A MULTIPLE CHOICE TEST OR IS IT A TRUE OR FALSE TEST?"

THEN A VOICE COMES TO ME OUT OF THE DARK, AND SAYS, "WE HATE TO TELL YOU THIS, BUT LIFE IS A THOUSAND WORD ESSAY."
“Maybe it’s not a wrong answer—maybe it’s just a different answer.”
SHOE

HOW DID YOU EVER ANSWER THAT LAST QUESTION?...

OH, I JUST MADE IT UP.

WHY DID YOU DO THAT?

WELL, I LIKE TO BE SURE OF MY SOURCES.

SALLY FORTH
Look, Mike, there's no way you're gonna get "Perfect" on this stuff, ok? So, stop beating yourself up!!

I mean, most of the exams are essays, right? It's not like math where the answer is either right or wrong! Essays are evaluated by people who either like what you write, or they don't.

In this case, we are at the mercy of the educators. We are at the mercy of their egos, their prejudices, their narrow-minded adherence to the past!!

So, if you flunk this exam? It's not my fault.
Late Multiplists …

• **Instructor:**
  – Seen as source of the thinking process,
  – Or else (cynical form) seen as irrelevant
    • *everyone’s* entitled to own opinion (*)

• **Themselves:**
  – Seen as learning to think for themselves
  – Seen as expressing opinions
    • whether believed/supported or not

• **Other students:** Seen as legitimate (but: *)

• **On evaluation:**
  – Independent thought deserves good grades…
  – Or (cynical form): “I’ll do what they want”

• **Get support from:** diversity; lack of structure
  – Late multiplists hate lectures, like seminars
Voices of Multiplism (continued)
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  – Dualism/Early multiplism → late multiplism
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  – Late multiplism
• “…I feel like **I’m programmed to program—not learning how & why.** Why does everyone else get it? I feel stupid.”
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  Why does everyone else get it? I feel stupid.”
  - Dislike of dualism!
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  – Dislike of dualism!
  – Late multiplism → Contextual Relativism?
Possible Response to Multiplism: ALIENATION

• leading to:
  – *retreat* to earlier, “safer” position:
    • “I’ll study math, not literature, because math has clear answers & not as much uncertainty”

• or to:
  – *escape*: drop out:
    • “I can’t stand college; all they want is right answers”
    OR
    • “I can’t stand college; no one gives you the right answers”
The traditional single viewpoint has been abandoned. Perspective has been fractured.

The multiple views provide too much information. It's impossible to move. Calvin quickly tries to eliminate all but one perspective.

Oh no! Everything has suddenly turned neo-cubist.

It all started when Calvin engaged his dad in a minor debate. Soon Calvin could see both sides of the issue. Then poor Calvin began to see both sides of everything.

It works! The world falls into a recognizable order.

You're still wrong, dad.
So this is what it's like to be an adult... figuring out who you are, where you belong, what your goals are, where you fit in.

I'm so different now. I analyze my actions, I analyze others, I try to think ahead... be organized.

I don't depend on anyone for my income or to make decisions for me. I'm a mature, responsible adult.

Daddy!!
5. Contextual Relativism

• All proposed solutions must be supported by reasons
  – I.e., they must be viewed in context
    and relative to their support

• Within a context, there are:
  – Right/wrong (better/worse) answers
  – Rules for good thinking

• Student’s task = to learn to evaluate solutions

• Where we’d like most students to be.
Contextual relativists …

• Instructors:
  – Seen as source of expertise …
  – as long as they follow contextual rules for good thinking

• Themselves:
  – Seen as studying different contexts
  – Seeing different perspectives

• Other students:
  – Legitimate if they follow contextual rules for good thinking

• On evaluation:
  – Evaluation of work ≠ evaluation of self
  – Evaluation is part of learning

• Get support from:
  – Instructor
  – Diversity
Voice of Multiplism Confronted with Contextual Relativism

- Comp Sci junior/senior in freshman discrete math:
  - “Since the material tends to be subjective, it helps to see the reasoning of another person sometimes.”
Voices of Contextual Relativism
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• Cliff Stoll @ UB:
  – “The answer is Markus Hess; now go home. If you’re only interested in the solution, leave. If you’re interested in good science & want to know how I solved the puzzle, stay.”
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- Gauss (1808):
  - “It is not knowledge, but the act of learning, not possession but the act of getting there, which grants the greatest enjoyment.”
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  – “It is not knowledge, but the act of learning, not possession but the act of getting there, which grants the greatest enjoyment.”

• Einstein:
  – “The search for truth is more precious than its possession.”
• What category am I in?
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  – Dualistic question!
• What category am I in?
  – Dualistic question!

• How many people are in each category?
• What category am I in?
  – Dualistic question!

• How many people are in each category?
  – Multiplistic question!
• If teacher is at Perry position N, & student is at Perry position N–2, then student will not understand teacher!

  – because…
Students Make Their Own Meaning:
What Teachers Say vs. What Students Hear
Students Make Their Own Meaning: What Teachers Say vs. What Students Hear

- Teacher:
  - Today we’ll discuss 3 methods for treating this disease
Students Make Their Own Meaning: 
What Teachers Say vs. What Students Hear

• **Teacher:**
  – Today we’ll discuss 3 methods for treating this disease

• **Dualist:**
  – Which is the correct one?
  – Why bother with the wrong ones?
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• **Multiplist:**
  – Only 3? Heck, I can think of a dozen!
Students Make Their Own Meaning: What Teachers Say vs. What Students Hear

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- **Dualist:**
  - Which is the correct one?
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  - Only 3? Heck, I can think of a dozen!

- **Contextual relativist:**
  - What principles underlie the 3 methods?
  - Which is the most successful?
  - Which should I use on this patient?
If students make their own meaning, how can you help them?

- Find out the students’ Perry positions
  - What was your favorite/least favorite class?
    - Why?
  - OR: just listen!

- Then: Help them move to the next position!
Your Goals as Teacher

• To **challenge** students,
  – So that they will move from dualism to muliplism to contextual relativism (& beyond)

• To **support** students,
  – As they move from the “comfort” of one approach to the strangeness of another
Example

• “How long should the paper/project be?”
  – Dualistic question!
  ∴ Give a **justified** length
  challenge support
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• **Background:**
  Students have just read Turing’s article on Turing Test.
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  + either (a) a description of one essay on TT in *Mind’s Eye* [Dualistic assignment]
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  + either (a) a *description* of one essay on TT in *Mind’s Eye* [Dualistic assignment]
  or (b) your *reply* to the following objection to TT: (…) [Multiplistic assignment]
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  - or (c) your *objections* to TT
    + your guess at T’s reply [Late Mult/C.R.]
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• **Support:** Student chooses least threatening option
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    or (c) **your objections** to TT  
    + your guess at T’s reply [Late Mult/C.R.]

• **Support:** Student chooses least threatening option

• **Challenge:** 2nd assignment = Do “next” alternative
Dualism → Multiplicity

- Design situations that invite Dualists (R/W thinkers) to:
  - experience multiple conflicting/alternative views
  - using high degree of structure to present each view
    - syllabus
    - explicit assignments with due dates
    - outline of each class
    - handouts with requirements, hints
  - Have students compare/contrast, explain answers, analyze
  - If a student rejects a view, have student be concrete about basis for rejection
Dualism ➔ Multiplism (cont’d)

• Help students develop strategies to pick out major concepts or most relevant information in a section of text:
  – **challenge:** learning how to learn
    (rather than learning answers)
  – **support:** there are “correct” answers as to what’s important
Multiplism → Contextual Relativism

- Design situations that invite Late Multiplists (all opinions are OK) to:
  - encounter multiple views
  - evaluate their relative merits
    - via own experiences (biographies, stories), others’ experiences (small groups)
  - explicitly identify bases for disagreements among authorities/views
  - use low degree of structure
  - let students take responsibility for structuring own learning:
    - negotiate syllabus, course content, due dates
    - individual contracts, use teacher as resource
Beyond the 4 Approaches
Beyond the 4 Approaches

6. Pre-Commitment:
Beyond the 4 Approaches

6. Pre-Commitment:
   - Student sees necessity of:
     - Making choices
     - Committing to a solution
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7. Commitment:
Beyond the 4 Approaches

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7. **Commitment:**
   - Student makes a choice (e.g., chooses thesis topic)
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7. Commitment:
   • Student makes a choice (e.g., chooses thesis topic)

8. Challenges to Commitment:
   • Student experiences implications of choice
   • Student explores issues of responsibility
     – E.g., write & defend dissertation
9. Student realizes commitment is an ongoing, unfolding, evolving activity

- E.g., you become a researcher

- John A. Wheeler (physicist):
  - “We live on an island of knowledge surrounded by a sea of ignorance. As our island of knowledge grows, so does the shore of our ignorance.”

- All “Perry positions” are sometimes repeated!
Brief Overview of the 4 Approaches to Learning

2. **Full Dualist**
   - all questions have answers
   - some teachers know right answers & teach them
     - others don’t, but teach them anyway
   - student must learn right answers
     - and ignore others

3. **Early Multiplist**
   - some questions have known answers
     - others have not-yet-known answers
   - teachers know right ways to get answers
   - students must learn how to find right answers

4. **Late Multiplist**
   - most questions have no known answers
   - teacher is source of thinking process OR is irrelevant
   - student must learn to think for self (everyone has right to own opinion)
     OR doesn’t matter which answer you give

5. **Contextual Relativist**
   - Answers must be supported by reasons
   - Within a context, there are better/worse answers
   - Teachers & students must follow rules for good thinking
   - Students must learn to evaluate solutions
The Perry Scheme, Self-Referentially

• **Dualist:**
  – The Perry scheme is the best way of thinking about college students. Someone has finally told us how to make students change in the right ways.

• **Multiplist:**
  – Well, it’s some people’s way of talking about student growth and development, and they have a right to their own opinion, I suppose.

• **Contextual Relativist:**
  – It is one of a relatively few student-development models based on data collected in a fairly unbiased manner over many years.

• **Commitment:**
  – I have found the Perry scheme, integrated with other theories, extremely helpful to me as I try to interpret the behavior of people around me, as I think of my goals as an educator, and, especially, as I interact with my students.

• The Perry scheme attempts to analyze assumptions about knowledge, self, and values such as those implicit in the 4 descriptions above and in the ability to write this last sentence.
  – Larry Copes
Summary

- **Hear your students’ voices:**
  - where are they’re coming from on the Perry scheme?
  - then:
    - you can reply with answers that challenge and support
    - you can design assignments/experiences that help them journey along the Perry positions

- **Be flexible:**
  - try different teaching styles…
  - … to **support** your students…
  - … to **challenge** your students…
    - … and yourself!
FOR BETTER OR WORSE

ARE WE TOO TOUGH ON MICHAEL? ARE WE NOT TOUGH ENOUGH?

DO WE GIVE IN TOO OFTEN? TOO SELDOM? DO WE LISTEN? DO WE UNDERSTAND?

MAYBE I NAG TOO MUCH. AM I A GOOD PARENT? WHERE ARE THE ANSWERS? HOW DOES ONE KNOW WHAT TO DO?

TROUBLE WITH GROWN-UPS IS... THEY THINK THEY KNOW EVERYTHING.
Further reading:

- **W.G. Perry’s 2 main works:**
  - *Forms of Intellectual & Ethical Development in the College Years* (Holt, Rinehart, Winston, 1970)

- **An interesting follow-up study:**

- **Good general introduction & application to science teaching, with many useful further references:**

- **Two of my own papers:**

- **For further information, go to:**
  - http://www.cse.buffalo.edu/~rapaport/perry.positions.html