Inquiry: The Gateway to Intentional Research

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Center for the Study of Student Life
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Introduction

Perhaps our time together will encourage you to engage the world through the inquiry and reflective lens of the researcher...
• where inquiry is *asking good questions* and
• reflective is *creating space to think*.

**Good research is built upon good inquiry**
Introduction

What is research? What does it mean to conduct research?
• TPS: Your thoughts?
Introduction

What is research? What does it mean to conduct research?

• TPS: Your thoughts?
• Scientific method
• Six step research process (Creswell, 2012)
  1. Identifying a research problem
  2. Reviewing the literature
  3. Specifying a purpose for research
  4. Collecting data
  5. Analyzing and interpreting the data
  6. Reporting and evaluating research
Introduction

What is research? What does it mean to conduct research?
• Puzzles to be solved (Creswell, 2012)
• Defined: “Is a process of steps used to collect and analyze information to increase our understanding of a topic or issue.”
• Research defined (Creswell, 2012)
  1. Pose a question
  2. Collect data to answer the question
  3. Present an answer to the question
The Joy of Research...Inquiry

Have you ever found a four leaf clover?
The Joy of Research...Inquiry
Is childhood cat ownership a risk factor for schizophrenia later in life?

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Abstract

Two previous studies suggested that childhood cat ownership is a possible risk factor for later developing schizophrenia or other serious mental illness. We therefore used an earlier, large NAMI questionnaire to try and replicate this finding. The results were the same, suggesting that cat ownership in childhood is significantly more common in families in which the child later becomes seriously mentally ill. If true, an explanatory mechanism may be Toxoplasma gondii. We urge our colleagues to try and replicate these findings to clarify whether childhood cat ownership is truly a risk factor for later schizophrenia.
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What is the relationship between research and inquiry?
• Inquiry defined.
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What is the relationship between research and inquiry?
• Inquiry defined. *Why? is the essence of inquiry*

Engage *thinking* and *learning* like a scholar-practitioner
• TPS
• What were questions you asked over the last week?
• What questions did you hear others ask over the last week?
Good Inquiry is Elusive

Why is good inquiry elusive?
Good Inquiry is Elusive

Why is good inquiry elusive?

I didn't have any accurate numbers so I just made up this one.

Studies have shown that accurate numbers aren't any more useful than the ones you make up.

How many studies showed that?

Eighty-seven.
Good Inquiry is Elusive

Why is good inquiry elusive?
• Several problems (Creswell, 2012)
  • Contradictory or vague findings
  • Questionable data
  • Bias (researcher, funding, sample)
  • Representation
  • Generalizability
Good Inquiry is Elusive

Why is good inquiry elusive?
• Finding what we want
• Fear
• Influence of external forces (e.g., funding)
• Not understanding that inquiry is about discovery
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The continuum of truth… There is an old adage that figures don’t lie, but liars know how to figure.
Good Inquiry is Elusive

Attribution theory
- Try to make sense of the world through ascribing causality
- Answering the question “why?”
Good Inquiry is Elusive

Attribution theory
Good Inquiry is Elusive

Attribution theory
• Try to make sense of the world through ascribing causality
• Answering the question “why?”

Because we natural engage in the attributional process it’s easy to assume we practice good inquiry
Good Inquiry is Elusive

...Yet good inquiry is attainable...
Teaching Students to be Good Researchers

The Importance of Stupidity in Scientific Research
Martin A. Schwartz, Journal of Cell Science
http://jcs.biologists.org/content/121/11/1771.full

“First, I don't think students are made to understand how hard it is to do research. And how very, very hard it is to do important research. It's a lot harder than taking even very demanding courses. What makes it difficult is that research is immersion in the unknown. We just don't know what we're doing.”
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“I think scientific education might do more to ease what is a very big transition: from learning what other people once discovered to making your own discoveries. The more comfortable we become with being stupid, the deeper we will wade into the unknown and the more likely we are to make big discoveries.”

How do we arrive at a mindset for making discoveries?
Being Intentional to Engage in Good Inquiry
Being Intentional to Engage in Good Inquiry

Being Intentional to Engage in Good Inquiry


“...that *the view that you adopt for yourself* profoundly affects the way you lead your life” (2006, p. 6). This view is known as mindset.

1. A fixed mindset perceives “that your qualities are set in stone” (p. 6);
2. Whereas a growth mindset is “the belief that your basic qualities are things you can cultivate through your efforts” (p. 7).
Being Intentional to Engage in Good Inquiry

Truth Seekers. Commonly accepted critical thinking skill.

• Pursuit of truth
• Can be difficult in research
Being Intentional to Engage in Good Inquiry

**Truth Seekers.** Commonly accepted critical thinking skill.

- Pursuit of truth
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Being Intentional to Engage in Good Inquiry

Willingness to Fail.

- Productive stupidity (Schwartz, 2008)
Being Intentional to Engage in Good Inquiry

Willingness to Fail.

• Productive stupidity (Schwartz, 2008)

• The 5 Elements of Effective Thinking, Burger & Starbird, 2012
  • “You may not know how to do it right, but you can certainly do it wrong” (p. 58)
  • Fail forward

http://press.princeton.edu/titles/9810.html
Being Intentional to Engage in Good Inquiry

Willingness to Fail.

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- “‘You have to be confused,’ Dudley Herschbach, the Nobel Prize-winning chemist from Harvard, confessed, ‘before you can reach a new level of understanding anything.’” (Bain, 2004)
Being Intentional to Engage in Good Inquiry

Willingness to Get Beyond Oneself.

- Gather around the subject (Bain, 2004)
Being Intentional to Engage in Good Inquiry

Willingness to Get Beyond Oneself.

• Gather around the subject (Bain, 2004)
• Humility (Bain, 2004; Collins, 2001)

Gain a deeper understanding of the ideas presented in the books “Built to Last” and “Good to Great” by using these discussion guide questions.

**Level 5 Leadership**

<table>
<thead>
<tr>
<th>Which is harder to cultivate within yourself: humility or will?</th>
</tr>
</thead>
<tbody>
<tr>
<td>If Level 5 is about ambition first and foremost about the cause, the company, the work—not yourself—combined with the will to make good on that ambition, then how can each of us as individuals learn to take actions consistent with being Level 5?</td>
</tr>
</tbody>
</table>
Being Intentional to Engage in Good Inquiry

Leads to...

The bigger picture of inquiry: A mindset of curiosity
The bigger picture of inquiry: A mindset of curiosity

- Dweck’s growth mindset
- Active engagement
- Effort – Challenge is to change habits and “normal” ways of thinking
- Respect for research
- Failure – Fail forward; productive stupidity
What does all of this have to do with inquiry?
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- Sets a course for approaching inquiry...asking questions and conducting research
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• Sets a course for approaching inquiry...asking questions and conducting research
• Let your reasonableness be evident to all. Strive to think critically. Be a good listener.
What does all of this have to do with inquiry?

• Sets a course for approaching inquiry...asking questions and conducting research
• Let your reasonableness be evident to all. Strive to think critically. Be a good listener.
• Ask questions—good questions—throughout the research process
  • Resource – Creswell
  • Reverse inquiry – what does the question teach us
• The question behind the question – are we missing anything? Am I reasonable? And how would I know?
Next steps

• Questions? Thoughts?
• What do you need to do to improve your inquiry?

“Science makes me feel stupid too. It's just that I've gotten used to it. So used to it, in fact, that I actively seek out new opportunities to feel stupid. I wouldn't know what to do without that feeling. I even think it's supposed to be this way.” (Schwartz, 2008).

“You may not know how to do it right, but you can certainly do it wrong”

(The 5 Elements of Effective Thinking, Burger & Starbird, 2012, p. 58)
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