

# What Is Inquiry Through Apprenticeship And Why Should We Teach This Way?

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There are three broad models of teaching and learning (Rogoff, 1996). It must be the goal of expert teaching to assist students to deep and usable understandings, or what might be called “**conscious competence**”—i.e., knowing what you know, how you know it, how to justify it with disciplinary standards, and how to apply and continue developing this knowledge. Only one model, **inquiry through apprenticeship**, effectively develops students’ conscious competence and prepares them for real world success.

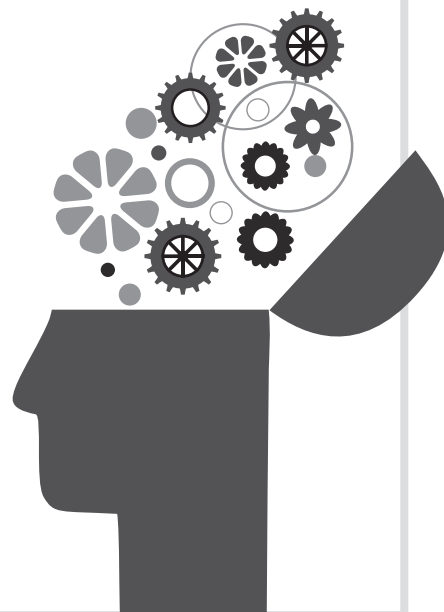
## What Is Inquiry Through Apprenticeship?

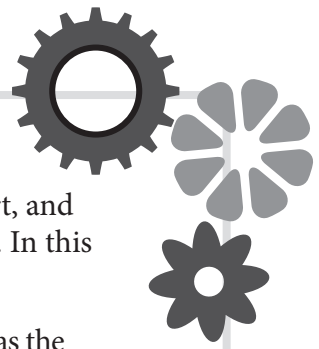
What is inquiry through apprenticeship and how is it different from other educational approaches? To explain, let’s imagine a teacher trying to teach students how to make spaghetti sauce.

**Approach 1: Information Transmission:** The teacher provides the students with a standard archival recipe for making spaghetti sauce and asks students to memorize the recipe and repeat it on a test. Teaching here is telling and focuses on the **WHAT** or information to be purveyed. Learning, in this model, is demonstrated by retelling. But here’s a big bold **BUT**: research shows that even students who ace the retelling test typically do not understand the content, cannot apply it, and regularly forget the information.

**Approach 2: Discovery:** The teacher provides kitchen space, tomato paste, spices and the like and says “Go to town! Figure it out!” Learning is demonstrated through effort and doing something for oneself. One can imagine the mess that could ensue. Teaching in this model is creating a nurturing environment and focuses on the **WHO** of the learner. The teacher provides materials and an environment to stimulate student activity and “discovery.” Research indicates that in such environments, students do what they already know to do and do not learn new ways of thinking, problem-solving, or being.

**Approach 3: Inquiry Through Apprenticeship:** First, the teacher models different ways of making spaghetti sauce, then mentors, guides, and assists learners to make some different sauces, all the while helping students to develop “conscious competence” by articulating principles/conceptual knowledge about the chemistry of cooking, the interaction of flavors and the like, and principles of practice/procedural knowledge of cooking. Learning is demonstrated through actual independent accomplishment in a culminating project, e.g., developing one’s own unique spaghetti sauce, based on the principles and practices learned, shared and explained to a real audience. The focus here is on the **WHY** and the **HOW**—the purposes and processes of learning—but also on





the WHAT of generative conceptual knowledge, the WHO of the disciplinary expert, and the WHEN and WHERE of the context of knowledge development and application. In this model, teaching is modeling, then mentoring and monitoring learning.

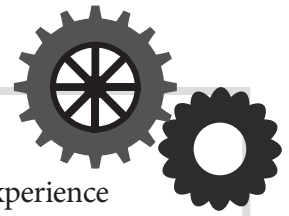
A further goal of the inquiry apprenticeship model is that learners meet what is known as the “**correspondence concept**” by thinking about cooking in ways that correspond more closely to how experts think about the culinary arts, that they practice cooking more like an expert, and that they would continue to develop this knowledge through their lives. In other words, the learner has been apprenticed into expertise through inquiry in ways that lead to further inquiry. The developed knowledge is generative and unconstrained—able to be further developed and honed over a lifetime—unlike the inert facts learned through information transmission or the kinds of learning unconnected to disciplinary knowledge and standards that tend to occur through discovery learning. As a term of art in cognitive science, inquiry is the *rigorous apprenticeship into disciplinary expertise and meaning-making*. It is learning how to solve problems and design solutions by using the stances and strategies of expert practitioners.

Likewise, expert teachers strive to attain their own conscious competence as teachers—to possess a wide repertoire of strategies to assist student learning in various ways under different conditions. Expertise in teaching resides in what is known as **pedagogical content knowledge**—knowing *how* to teach students *how* to read, write, and learn (Shulman, 1986). Our next generation standards (like the Core in the U.S.) represent profound cognitive achievements in producing and performing knowledge, and meeting the demands of these standards and their assessments will require expert teaching in the HOW.

## Why Inquiry Through Apprenticeship Works

There are many studies that support the case for using inquiry as cognitive apprenticeship both in terms of student learning and in teacher development. The gold standard research for student learning is the *Successful School Restructuring Study* conducted by Fred Newman (Newman & Wehlage, 1995; Newman, et al, 1996). Involving 23 schools and over 2,300 students, learners were found to enjoy significantly higher engagement and achievement on challenging tasks when they learned in an inquiry environment. Inquiry practices were shown to have more positive impact on student performance both short- and long-term than any other factor, including prior achievement and background. Furthermore, internationally, standardized test data that can be disaggregated by teaching treatment, such as the TIMSS and NAEPs, show that students who learn in an inquiry context achieve at significantly higher levels (See, for example, Weglinsky, 2004; McTighe, Seif, & Wiggins, 2004). George Hillocks’ finely grained studies and reviews also make the case for inquiry. Hillocks’ findings are that reading and writing are forms of inquiry that are best taught and learned in inquiry contexts. Period. FULL STOP. (See Hillocks 1986, 1995, 1999).

Inquiry invites differentiation and meets the needs of all students, particularly those who are reluctant, because it foregrounds learning as purposeful, provides varied kinds of assistance and practice, multiple opportunities to make and do things with what is learned, helps students stake their identity, and—perhaps most importantly—explicitly and flexibly apprentices and assists students over time to achieve visible signs of competence, deep understanding, and actual accomplishment (Smith & Wilhelm, 2002; 2006). In our studies of boys, we found that inquiry



naturally meets all basic human needs for engagement and the conditions of “flow” experience (Czikszentmihalyi, 1990):

- A clear purpose, intermediate goals, immediate and continuous feedback about one’s progress
- 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 (e.g., learners exercise their own voices, stake their opinions and identities, make meaningful choices, and name their growing competence)
- A focus on Immediate Experience (e.g., what is learned has current relevance; is connected personally to students as well as to the world; students make and do things with an immediate function; involves edginess, fun and sometimes humor)
- The social (students do significant work together, sharing and using it with others)

Inquiry models also meet human needs for relationship, reciprocity, collaboration, and the “contract to care” as teachers and students work together to solve problems and create knowledge (Smith & Wilhelm, 2002; 2006).

It is compelling how traditional information-transmission formats like lectures, worksheets, formulaic assessments, and textbook reading meet none of the conditions of flow nor the contract to care in schools. However, inquiry treatments necessarily and by design *do* meet all of these conditions.

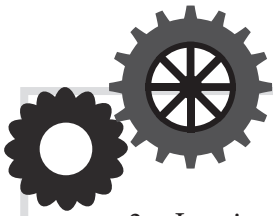
## **Inquiry Is Democratic.**

Another important aspect of inquiry is that it involves collaboration between teachers and students, between students as peers, and, at least implicitly though sometimes explicitly, between teachers and students and disciplinary experts. Inquiry is a particularly democratic form of teaching and learning and, as such, privileges pre-existing interests, unique perspectives, and the various strengths of individuals, including those of students who may be typically marginalized in school. Inquiry requires students and teachers to be agents and activist learners who know how to problem-solve and learn, who are willing to take on challenges and to provide service to others based on what they have learned.

## **An Inquiry Culture Within and Across Classrooms**

In my mind, the most successful learning is supported by inquiry at multiple levels. Such learning contexts feature students who:

1. Collaboratively explore inquiry topics with each other and with their teacher/s and other experts, working together to create knowledge and knowledge artifacts that are usable, revisable, extensible, transferable, and archival.
2. Develop conscious competence with threshold concepts and procedures for learning, problem-solving and meaning-making that can be developed and honed throughout a lifetime.



3. Inquire into their own reading and writing, learning about expert practice, monitoring their own progress, and sharing expertise with others through modeling and peer response. These students will use assessment as learning: constantly reflecting on their work and analyzing their processes in order to improve them. These students will create daily deliverables that reveal what they know and can do, as well as their areas of productive struggle.

Such a context also features teachers:

4. Collaboratively participating in creating meanings with students, continuously learning from students how to teach them better.
5. Engaging in inquiry as action research, trying new actions and interventions, creating conscious competence and principles of practice, always extending their repertoires.
6. Operating as public intellectuals, reading research together, deprivatizing their practice, working as thinking partners by sharing their instructional moves, student work, and action research.

## The Bottom Line!

Inquiry leads to deep engagement, understanding, and use. I have to ask: if you aren't teaching and learning for conscious competence and application, then what are you teaching and learning for? Inquiry provides the additional benefits of fostering imagination, joy, service, and the pursuit of wisdom (Wilhelm, Fry & Douglass, 2014; Wilhelm & Novak, 2013). Inquiry is the most powerful educational path forward and must be part of students' daily experiences as learners of powerful stances and strategies for reading, writing, solving problems and doing work in the world. Inquiry is also the daily craft of teachers as reflective practitioners and professional knowledge-makers, as well as part of our work as collaborative fellow learners with students being apprenticed into the expert practices of readers, composers, and problem-solvers of all kinds. And that is why inquiry through apprenticeship is the smartest way to teach: because it makes both students and teachers smarter in ways that count in school, in real disciplinary work, and in that most authentic of all testing situations—out in the world of democratic work and living.

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