

time in a continuing process of remix. We also see how a composing practice like reflection can be generalized into a larger philosophy of reflection, one more characteristic of expertise. And not least, we see, through a student's observations, how a term viewed as a single concept functions more largely as a meta-concept and how hard it can be to remix prior knowledge, especially when that prior knowledge is nearly deterministic in its application and impact.

Critical Incidents: Motivating New Conceptions and Practices of Composing

In various writing situations, students often encounter a version of what's called a "critical incident," a phrase common in fields ranging from air traffic control to surgery to teaching. A critical incident is a situation where efforts either do not succeed at all or succeed only minimally. We have found that writing students who encounter critical incidents—like Clay and Rick in the TFT course—can become willing to let go of or relax prior knowledge as they rethink what they have learned, revise their model and/or conception of writing, and write anew. In other words, the setbacks motivated by critical incidents can provide the opportunity for conceptual breakthroughs, as we detail in the case of Rick.

The surgeon Atul Gawande (2002) describes critical incidents as they occur in surgery, and how they are later understood, in his account of medical practice titled *Complications*. Surgical practice, like air traffic control, routinely and intentionally engages practitioners in a collective reviewing of what goes wrong—in surgery, operations where the patient died or whose outcome was negative in other ways; in air traffic control, missteps large (e.g., a crash) and small (e.g., a near miss)—in the belief that such a review can reduce error and thus enhance practice. Accordingly, hospital-based surgeons meet weekly for a Morbidity and Mortality Conference, the M&M for short, its purpose both to reduce the incidence of mistakes and to make knowledge. As Gawande explains,

There is one place, however, where doctors can talk candidly about their mistakes, if not with the patients, then at least with one another. It is called the Morbidity and Mortality Conference—or, more simply, M & M—and it takes place, usually once a week, at nearly every academic hospital in the country . . . Surgeons, in particular, take the M & M seriously. Here they can gather behind closed doors to review the mistakes, untoward events, and deaths that occurred on their watch, determine responsibility, and figure out what to do differently next time. (57–58)

The protocol for the M&M never varies. The physician in charge speaks for the entire team, even if she or he wasn't present at the event under inquiry. In other words, a resident might have handled the case, but the person responsible—called, often ironically, the attending physician—speaks. First, information is presented about the case: age of patient, reason for surgery, progress of surgery. Next, the surgeon outlines what happened, focusing on the error in question; that there was an error is not in question, so the point is to see if that error might have been discerned more readily and thus have produced a positive outcome. The surgeon provides an analysis and responds to questions, continuing to act as spokesperson for the entire medical team. The doctor members of the team, regardless of rank, are all included but do not speak; the other members of the medical team, including nurses and technicians, are excluded, as are patients. The presentation concludes with a directive about how such prototypic cases should be handled in the future, and it's worth noting that, collectively, the results of the M&Ms have reduced error.

Several assumptions undergird this community of practice, in particular assumptions which are at odds with those of compositionists. For example, we gave up a focus on error long ago in favor of the construction of a social text. Likewise, we might find it surprising that the M&M is so focused on what went wrong when just as much might be learned by what went right, especially in spite of the odds—for instance, the young child with a heart defect who surprises everyone by making it through surgery. Still, the practice of review in light of a critical incident suggests that even experts can revise their models when prompted to do so, a point also observed in *How People Learn* (Bransford, Pellegrino, and Donovan 2000). Moreover, these experts are not confined to the medical arena, although there is a good deal of interest in using critical incident theory as a centerpiece of medical

CASE RECORD FORMAT	
1. THE PROBLEM	Who was involved? What was the pertinent background information? What was your role in the problem?
2. OUTCOME and/or OBJECTIVES DESIRED	What did you hope to accomplish?
3. ALTERNATIVES CONSIDERED	What alternatives did you consider to solve the problem?
4. STRATEGIES IMPLEMENTED	What action did you take in an attempt to achieve your objectives?
5. RESULTS	Were your objectives achieved? What happened as a result of your actions?
6. ASSESSMENT	Did your plan work as intended? What critical events, decisions, situations influenced the outcome? What would you do differently, if anything?

Figure 4.2. From *Reflective Practice for Educators*, 2nd ed. (Osterman and Kottkamp 2004)

school education.⁸ In *Becoming a Critically Reflective Teacher* (Brookfield 1995), for example, Stephen D. Brookfield identifies critical incidents—when classes don't go well; when students resist in an unusual way; when an assignment fails—as pedagogical occasions faculty might review in order, much as surgeons, to enhance practice. More generally, Karen F. Osterman and Robert B. Kottkamp outline the use of critical incidents in education in their *Reflective Practice for Educators*. In their review, Osterman and Kottkamp (2004) point to a six-part schema, what they call a case record format useful for analysis of critical incidents, including: problem, outcome desired, alternatives, strategies employed, results, and assessment of outcome. In sum, critical incident theory provides another lens through which we might view enhanced practice, and in our case, transfer of writing knowledge and practice.

Indeed, as we saw in chapter 3, a critical incident is certainly one way to describe what happened to Rick—a first-year student with an affection for all things scientific—as he experienced a misfit between his prior knowledge and new writing tasks. A physics and astrophysics major, Rick was working on a faculty research project in the physics laboratory, and was planning a research career in his major area. He professed:

I am a physics major so I really like writing about things I think people should know about that is going on in the world of science. Sometimes it's a challenge to get my ideas across to somebody that is not a science or math type, but I enjoy teaching people about physics and the world around them.

Rick's combination of prior knowledge and motivation, however, didn't prove sufficient when he began the research project in the TFT class. He chose a topic with which he was not only familiar but also passionate, quantum mechanics, and his aim was to communicate the ways in which quantum mechanics benefits society. He therefore approached the research as an opportunity to share what he knew with others, rather than as an inquiry into a topic and a discovery of what might be significant. He also had difficulty making the information clear in his essay, which he understood as a rhetorical task: "The biggest challenge was making sure the language and content was easy enough for someone who is not a physics major to understand. It took a long time to explain it in simple terms, and I didn't want to talk down to the audience." In this context, Rick did understand the challenge of expressing the significance of his findings to his audience, which he determined as his fellow college students. But the draft he shared with his peers was confusing to them, not because of the language or information, as Rick had anticipated, but instead because of uncertainty

about key points of the essay and what they as readers were being asked to do with this information.

As a self-identified novice, however, Rick reported that this experience taught him a valuable lesson about audience. "I tried to make it simple so . . . my classmates would understand it, but that just ended up messing up my paper, focusing more on the topic than on the research, which is what mattered. I explained too much instead of making it matter to them." Still, when the projects were returned, he admitted his surprise at the evaluation of the essay, but was not willing to entertain the idea that his bias or insider knowledge about quantum mechanics had prevented his inquiry-based research.

After everyone got their papers back, I noticed that our grades were based more on following the traditional conventions of a research paper, and I didn't follow those as well as I could have. I don't really see the importance of following specific genre conventions perfectly.

In the next semester, however, these issues of genre and audience came together in a critical incident for Rick as he wrote his first lab report for chemistry. Ironically, Rick was particularly excited about this writing because, unlike the writing he had composed in the English class, this was writing in the desired context of science—in this case, the writing of a lab report. But, as it turned out, it was a lab report with a twist: the instructor specified that the report have a conclusion that would link it to "everyday life":

We had to explain something interesting about the lab and how that relates to everyday life. I would say it is almost identical to the normal introduction one would write for a paper, trying to grab the reader's attention, while at the same time exploring what you will be talking about.

Aware of genre conventions and in spite of these directions for modification, Rick wrote a standard lab report. In fact, in his highlighting of the data, he made it *more* lab report-like rather than less: "I tried to have my lab report stick out from the others with better explanations of the data and the experiment." The chemistry instructor noticed, and not favorably: Rick's score was low, and he was more than disappointed. Eager to write science, he got a lower grade than he did on his work in the TFT class. It wasn't because he didn't know the content; rather it was because he hadn't followed the directions for writing that violated his own sense of what was important.

This episode constituted a critical incident for Rick. Dismayed, he went to talk to the teacher about the score. She explained that he indeed needed to write the lab report, not as the genre might strictly