GOOD UNDERGRADUATE WRITING IN ART, BIOLOGY, AND PSYCHOLOGY:
IMPLICATIONS FOR ASSESSMENT

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Abstract

Higher education accreditation commissions now require that universities assess student learning when students are near graduation or have completed a program. The commissions specify that assessment results guide program and institutional improvement. In the area of writing assessment, methods exist to test student writing skills but they appear inadequate. Higher education institutions need methods to assess senior-level writing skills that the faculty finds meaningful and useful because then accreditation requirements can be met.

The overarching goal of my qualitative study, conducted at the flagship campus of the University of Hawai‘i (UH), was to inform a writing assessment plan. I used in-depth interviews with twelve faculty members to learn about their criteria for and expectations of good writing in three academic disciplines: Art, Biology, and Psychology. Analysis of the 12 participants’ responses revealed six characteristics that contributed to good student writing: a) establishing a focal issue, b) fulfilling organizational expectations, c) providing evidence and explanation, d) creating coherence, e) using unambiguous sentences, and f) following grammar and mechanics rules. The participants in each academic discipline also identified characteristics that participants in other disciplines did not emphasize such as using poetic phrases, defining terms, contextualizing the problem or issue, and choosing reliable and valid sources. The genre of the student text also influenced the text characteristics mentioned by the participants.

I also investigated sources of the participants’ beliefs about writing. Those sources fell into two categories: academic and personal. Some participants drew from
their entire range of experiences, from childhood to present-day, while others focused on experiences in their academic discipline.

Based on findings from my study and research from the areas of testing, written communication, assessment in higher education, and cultural-historical theory, I proposed an assessment plan that involved faculty members creating a scoring rubric that aligned with their academic community's criteria for good writing. Faculty members would use that rubric to score seniors' texts collected from their academic community's writing-intensive classes. By engaging faculty in the assessment process and aligning teaching and testing, UH increases the possibility that its assessment will be meaningful, useful, and lead to the improvement of UH's writing program.
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Chapter 1. Introduction

The calls to improve higher education since the 1980s have been answered, in part, by solutions that involve the assessment of student learning. In 1984, the Study Group on the Conditions of Excellence in American Higher Education recommended that institutions of higher education attend to student learning instead of institutional resources and reputation (Study Group on the Conditions of Excellence in American Higher Education, 1984). The national accrediting commissions heeded such recommendations and revised their guidelines. As a result, by 2000 all accrediting commissions required institutions to assess student learning and use the assessment results to guide curriculum and pedagogical change.

In 2006, Secretary of Education Margaret Spellings proposed that institutions of higher education measure and report how well students are learning because there are “disturbing signs that many students who do earn degrees have not actually mastered the reading, writing, and thinking skills we expect of college graduates” (Commission on the Future of Higher Education, 2006, p. x). Like the 1984 Study Group, the 2006 Commission on the Future of Higher Education reported that reputation and rankings should not be based on resources, as was the typical case, but instead be based on evidence of student learning. The Commission stated that institutions should measure student learning and longitudinally document learning in value-added terms. It placed faculty members at the center of assessment efforts by calling on them to define student learning outcomes and develop ways to measure learning. The National Governors Association also joined the conversation and recommended that governors “call for the
development of minimum general education learning outcomes for undergraduates educated at a public college or university” and “require student competencies to be assessed and publicly reported” (D. Linn, 2007, p. 1).

Stakeholders at the national level prefer a system whereby institutions provide information about student learning that will allow parents, taxpayers, legislators, etc., to compare institutions across the nation. *Measuring Up* (National Center for Public Policy and Higher Education, 2006) is an example of a report card at the state level that provides assessment data and also allows for comparisons across states. At the regional level, the Western Association of Schools and Colleges (WASC), which accredits institutions in California, Hawai‘i, and the Pacific, wants institutions to define degrees in terms of student achievement rather than only the number of required credits (Western Association of Schools and Colleges Senior Commission, 2001). WASC requires an assessment of learning in which institutions develop and publish their expectations for student learning and demonstrate how well students attain those expectations (Accrediting Commission for Senior Colleges and Universities, 2002).

Assessment in the context of higher education accountability is multifaceted and multi-staged. It involves forming judgments about the extent to which institutions are helping students meet desired learning goals. It includes using the results of assessment to guide the institution in making changes so students meet goals. An important aspect to keep in mind is that the Secretary of Education, accrediting commissions, and others are interested in aggregate results and large-scale change when needed. Thus, their conception of the assessment of learning is at the program, institution, and state level.
Assessment results pertaining to an individual student are not the focus and do not need to be reported.

With attention focused on assessment of student learning since 1984 and accrediting commissions requiring assessment as the foundation to guide institutional improvement, why have Secretary Spellings, the Commission on the Future of Higher Education, and the National Governors Association recently repeated the call for institutions to focus on student learning and achievement? The primary reason may be that institutions have been slow to implement student learning assessment because carrying out assessment that is both meaningful and leads to institutional improvement is difficult.

First, competing forces from several areas simultaneously tug institutions as they undertake assessment. Accrediting commissions and the federal Department of Education are the external groups driving the assessment movement in higher education. Although both want institutions to improve student learning, WASC’s emphasis, for example, is on whether institutions have created a culture of evidence based on assessment that guides institutional planning. On the other hand, the Department of Education has emphasized accountability and, in turn, assessment results that can be compared across institutions.

Second, because assessment involves testing and measurement, practices regarding reliability, validity, and fairness are a concern. In addition, content-area issues also arise. In the area of written communication, research exists on writing, teaching writing, learning to write, and testing writing skills. The research and literature on testing
and written communication can help create sound assessment plans but inevitably add complexity when institutions consider them during the process of creating a plan.

Finally, faculty-member involvement has been seen as a necessary component of higher education assessment because the emphasis is on creating a learner-centered curriculum (Accrediting Commission for Senior Colleges and Universities, 2002; Barr & Tagg, 1995; Commission on the Future of Higher Education, 2006; Huba & Freed, 2000). Yet faculty members have not embraced assessment. In 2003, Peter Ewell wrote that faculty were asking "'when is assessment going to go away?'" (2003, p. 4). Faculty members, in particular at research-intensive institutions, are promoted based on their research productivity, teaching, and community service. Thus, faculty members assign it a low priority and view assessment as an additional task on top of their existing duties.

Other factors have also led faculty members to shun assessment efforts. They are not trained in how to conduct program- or institutional-level assessment practices. They evaluate individual students in their courses, but they typically have not engaged in making judgments about students' collective learning at the end of a program or degree. Faculty members may fear repercussions. They fear that assessment will cause a loss of academic freedom, results will be a factor in promotion and tenure decisions, and institutions will evaluate faculty members based on their students' assessment results (Lopez, 2004; Walvoord, 2004).

Assessment efforts can be thwarted because of these concerns and issues and the temptation to avoid certain aspects (faculty involvement, for example) exists. However, the requirement to assess does not appear to be on the verge of going away given the
Department of Education's recent statements (e.g., Yudof & Ruberg, 2007). The assessment movement began in the 1980s and this later wave of renewed attention to assessment indicates that institutions will need to assess student learning. Ideally, institutions would base their assessment plans on research and literature from assessment in higher education, testing, written communication, and cognitive development.

Rationale for the Study

Institutions are required to assess their general education program, and they often target written communication. Employers and faculty members typically list the ability to effectively communicate in writing as a desired skill of college graduates. For example, *Measuring Up* targets written communication for four-year institutions (The National Center for Public Policy and Higher Education, 2006). The 2006 Commission on the Future of Higher Education also pointed out effective written communication as an important college graduate skill.

Institutions are likely to turn to existing testing instruments to measure writing skills when designing their assessment plans. Yet this may lead to the premature selection of a testing instrument. University of Hawai‘i at Mānoa (UHM) administrators, for example, have recommended (and continue to recommend) the use of an existing test created by an out-of-state organization. Students would take this test outside of their regular coursework. However, choosing the test prior to determining the faculty’s goals and desired learning outcomes may lead to a less meaningful and less useful assessment
process. UHM can turn to faculty members for assistance with creating goals and outcomes because of its writing program that began 20 years ago.

UHM’s writing program requires that all undergraduate students complete a first-year writing course (e.g., English 100) and then five courses that have been designated as writing intensive. The writing program was a grassroots effort led by a multidisciplinary faculty committee in the late 1980s. Since then the writing program has received ongoing support from faculty members as well as administrators. UHM administrators supported the writing program by creating an office, the Mānoa Writing Program (MWP), with a faculty director and three full-time staff members.

The MWP’s two main functions are placing students into first-year writing courses through a writing placement exam and overseeing all aspects of writing-intensive courses. MWP staff gives a timed writing exam to incoming students to determine their writing skill level (remedial to honors), develops exam questions (essay prompts), and trains faculty to score the exam essays. Staff members offer faculty development workshops for instructors of writing-intensive courses and assist the faculty writing board members when they review proposals for writing-intensive classes.

Faculty involvement with the writing program continues to be substantial. Currently, faculty members teach over 900 writing-intensive sections in over 80 subject areas each academic year. Faculty members from across the curriculum voluntarily apply for the writing-intensive designation and their applications are reviewed by a multidisciplinary faculty writing board. They have modified their syllabi and pedagogy so their classes meet the writing-intensive hallmarks such as a) the class uses writing to
promote the learning of class materials and b) the class provides interaction between the instructor and students while students do assigned writing.

Because UHM faculty members have actively participated in the writing program and because the literature on assessment in higher education recommends faculty involvement, the faculty members who teach writing-intensive classes appear an appropriate starting point for the creation of an assessment plan. Their knowledge and experiences can be tapped.

**Purpose of the Study**

WASC requires that UHM assess senior-level writing skills and use that assessment as a means to improve students' skills, but UHM does not have an assessment plan. My overarching goal was to gain an understanding of written communication at the college senior level because that knowledge can inform UHM’s assessment plan. Specifically, I sought to describe good senior-level writing in three academic disciplines, Art, Biology, and Psychology. These are three of the largest majors at UHM and are located in separate colleges: College of Arts and Humanities, College of Social Sciences, and College of Natural Sciences. I asked faculty participants who have taught writing-intensive classes to identify characteristics of good student writing. They also discussed their rationale behind the selection of those characteristics. The relevant research on testing, written communication, assessment in higher education, and cultural-historical theory of cognitive development served as the foundation of my study. By drawing from
acceptable practices in these areas, I strengthened the likelihood of my study contributing to a solid assessment plan.
Chapter 2. Review of the Literature

In this chapter I discuss large-scale writing assessment and then contrast it with higher education assessment as defined by external agencies such as regional accrediting commissions and the U.S. Department of Education. I am interested in the contrast because multiple definitions of assessment coexist and may be causing confusion and leading to poor writing assessment practices. Assessment as it has been defined by external agencies has a different goal from traditional large-scale writing assessment. The traditional practices used in large-scale writing assessment are being considered and implemented by higher education institutions to assess senior-level writing skills. However, these practices fail to meet the spirit and goals of higher education assessment as defined by external agencies. An alternative may come from a cultural-historical approach to defining, describing, and assessing writing. Near the end of this chapter, I discuss cultural-historical theory, which can explain how people develop their writing skills, the functions of written texts, and why differences in conceptions of good writing exist. I suggest that program-level assessment based on cultural-historical theory suits the needs of faculty members, administrators and staff, and external agencies such as Western Association of Schools and Colleges (WASC) and the U.S. Department of Education. To develop a program-level assessment plan, an appropriate definition and conception of good writing at the college senior level is needed, and my study explores what good writing is in several academic disciplines at the University of Hawai‘i at Mānoa (UHM).
Large-scale Writing Assessment: Accurate Placement and Ranking

At the institutional level, U.S. universities have been judging student writing since the 1870s. In this section, I briefly describe the history of large-scale writing assessment in higher education and highlight its intent and consequences. I draw attention to intent and consequences because I believe they are distinguishing factors. Large-scale writing assessment was (and continues to be) aimed at gate keeping and ranking; the current calls for assessment in higher education emphasize program improvement so students meet desired learning outcomes.

Definitions

First, in the field of English composition, a few composition specialists have defined the words assessment, evaluation, and test (Speck & Jones, 1998; White et al., 1996); others have consciously ignored differences between assessment and evaluation (e.g., Wolcott & Legg, 1998). In general, composition specialists have used assessment and evaluation interchangeably (Huot, 2002; Ruth & Murphy, 1988). Loosely defined, assessment of writing in composition studies is the gathering of information about a student’s abilities with written literacy and using the information as a basis for a judgment. Composition specialists agree that an assessment is different from a test or exam. A test is seen as narrower in scope than an assessment. A test is a formal, monitored event in which information about a student’s skill is gathered and judged. Broader, assessment may include tests, class assignments, projects, portfolios, or teacher observations and may be conducted formally or informally.
Large-scale writing assessment refers to a process of determining the writing skills of large numbers of students. The assessment is not course specific: it is conducted at the institution or program level, and the persons reviewing the writing typically have no contact with the students. In contrast, classroom writing assessment is conducted at the course level, involves only students in a course, the course instructor reviews the writing, and often the instructor gives feedback to individual students. Later in this chapter, I contrast this understanding of assessment with assessment defined by higher education institutions and external agencies.

College Entrance Exams

Prior to the 1870s, written essays in colleges were viewed as a means of persuasion and as a way to share and discover knowledge. After the 1870s, essays were also used to determine whether students could follow the rules of correct English. The shift started when Harvard University conducted the first large-scale writing assessment in U.S. higher education with an entrance exam that required students to write an essay. The intention behind the large-scale assessment was to rank students and identify those suitable for admission and academic scholarships. The essays were judged on spelling, punctuation, grammar, and expression (Applebee, 1974) or style, with no reference to the quality of content. Other universities followed Harvard's lead, requiring a similar written composition as part of their entrance requirements. The rhetorical aspects of written texts (e.g., purpose and intended audience) were disregarded in these large-scale writing assessments (Yancey, 1999). One consequence was the reinforcement of existing class
and race relations and continuation of the prestige of universities such as Harvard (Berlin, 1987; White, 1995).

Starting in the 1950s, large-scale writing assessment became dominated by standardized, indirect tests that measured discrete writing skills (Hamp-Lyons, 2002; Yancey, 1999). Higher education institutions replaced the direct testing method, which used essay questions, with an indirect method based on multiple-choice questions. Instead of creating and administering their own exams, universities began relying exclusively on external agencies such as the College Board and the Educational Testing Service (ETS). Many universities and their faculties relinquished control over what their students were tested on and how they were tested. A 1952 survey showed that most of the responding institutions administered standardized exams created by external agencies (Yancey, 1999). Testing experts came to control large-scale writing assessment and they selected indirect testing methods that focused on grammar and usage (questions about comma placement, subject-verb agreement, capitalization, etc.). The testing experts' intent was to create a statistically reliable test that adequately predicted students' success in college-level courses. Thus, institutions continued to use large-scale writing assessments to rank students for admissions and determine scholarship eligibility. In addition, because a greater diversity of students were entering higher education, indirect tests of writing were used to track students into remedial, standard, and honors writing courses.

Although measurement experts considered the tests reliable and valid, they were not connected to the content covered by college composition teachers. They taught essay
writing as a rhetorical and expressive activity: invention, persuasion, and personal expression. However, entering students were admitted and placed in writing courses based on their scores on multiple-choice tests. The tests included questions on grammar, usage, and sometimes included questions on reading passages. The tests reduced writing to correct grammar and usage, a view which composition teachers did not hold.

In the 1960s, ETS researchers tackled the problem of reliably scoring written essays. Their solution—holistic scoring—allowed the direct testing of writing to be economically feasible and reliable in large-scale writing assessment. Adequate reliability could be achieved by carefully designing essay questions, giving exams under controlled conditions, and training readers to give a single score for quality. Standard reader training techniques assured reliability (Camp, 1993; White, 1989; Williamson & Huot, 1993). When introduced, tests that used holistic scoring satisfied the composition teachers who were bothered by the discrepancy between what was taught and what was tested. Their understanding of written literacy corresponded to an essay exam that trained readers scored on characteristics such as organization, thesis statement, development, and language use. Because direct methods can provide information on a wider range of writing skills than indirect, multiple-choice writing exams, they are considered more valid compared to multiple-choice exams.

After years of indirect tests dominating writing assessment, holistic scoring was a watershed. By 1985, a survey of English departments at U.S. universities revealed that almost 90% of the responding departments used holistic scoring (White, 1985). Holistic scoring allowed development of new tests that were typically campus-created and
campus-based, not nationwide. The primary intent was course placement. A 1994 survey found that 51\% of the responding institutions used a writing sample to place students into writing courses (Huot, 1994).

Even after holistic scoring was deemed reliable, indirect tests of writing skill continued to be used to predict general success in college. The ACT and SAT persist as a requirement for admission to most universities and students’ scores are a factor in whether they are admitted. Scholarships based on ACT or SAT scores continue. The intent of ranking students remains. Universities also continue to use ACT or SAT scores to place students into different level writing courses. It was not until 2005 that both the ACT and SAT added a written essay section with the essays holistically scored.

In sum, large-scale assessment in composition studies was tacitly defined as gathering information about student writing skill. The primary purposes were (and continue to be) to determine admission eligibility and track students into appropriate level writing courses (e.g., remedial, honors). Universities and faculties became accustomed to external organizations creating, administering, and scoring writing tests. The effort put into testing writing skill as part of college entrance and course placement exams resulted in a large body of literature on technical aspects such as statistical reliability and the effects of topic on performance. Large-scale writing assessment has been dominated by indirect, multiple-choice tests, but direct tests with essay exam questions, scored holistically, were favored by those in composition studies.

The assessment process in higher education’s large-scale writing assessments ends when a test score is used as a basis for admissions or placement. But information
gathers about students’ writing skills can serve different purposes. The current calls for assessment in higher education demand that assessments be used for more than ranking and placing students. But the historical aspects of testing writing skill are deeply entrenched and difficult to change. Higher education has not embraced assessment as it is currently being put forth, which I will discuss in the next section.

Assessment: From Ranking to Improving

The Assessment Movement in Higher Education

The definition of assessment in higher education changed with the birth of the higher education assessment movement in 1985 (Ewell, 2002). Assessment became a buzz word with a specialized meaning. A year earlier, the Department of Education published Involvement in Learning (Study Group on the Conditions of Excellence in American Higher Education, 1984). The Study Group first urged higher education institutions to monitor and document student learning. Traditionally, institutions had paid attention to “inputs” at the expense of “outputs.” To improve the quality of higher education, the Study Group gave three related recommendations: a) increase student involvement in the learning process, b) set high expectations and standards (and publicize them), and c) use assessment and feedback to improve educational effectiveness. The result would be a learner-centered institution in which students are active participants in their learning. Everyone—from parents to professors to employers—would be aware of the knowledge and skills that graduating students would possess. Everyone would stay
informed through regular reports issued by the institution that documented the learning
and development of students during their years at the institution.

In the area of assessment and feedback, the Study Group called for a systematic
assessment program able to document student learning over time and use feedback to
improve the curriculum, pedagogy, and learning. The Study Group suggested that faculty
members participate in creating a longitudinal design with pre- and post-tests that tap into
the complexity of learning and provide useful feedback to the students, faculty members,
and institution. Institutions can then use the feedback to their educational effectiveness.
This institutional level of assessment was to become an “organic part of learning” (Study
this context, the purpose of assessment is to improve program quality. Tests that only
rank and place entering students are insufficient under this different interpretation of
assessment because results need to be fed into an ongoing cycle of program
improvement.

Since 1984, the eight regional accrediting commissions have revised their
standards and guidelines to include program-level assessment of student learning. While
each commission’s standards and guidelines differ, the main thrust of the change is the
same: as part of accreditation, institutions need to establish and publicize student learning
outcomes and then collect, interpret, document, and use evidence of student learning to
guide program improvement. The American Association for Higher Education
Assessment Forum’s definition of assessment is an accurate description of how the U.S.
Department of Education and regional accrediting commissions conceive assessment:
Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain, and improve performance. When it is embedded effectively within larger institutional systems, assessment can help us focus our collective attention, examine our assumptions, and create a shared academic culture dedicated to assuring and improving the quality of higher education. (Angelo, 1995)

Assessment’s basic purpose—to gather information about student learning—has expanded to include a mandated purpose: use the gathered information to improve learning, pedagogy, and curricula. Plus, assessment needs “collective attention”: attention to program- or institutional-level effects on student learning. Individual assessment of each and every student is not required because attention is on the aggregate, on the program. According to Barr and Tagg (1995) and Huba and Freed (2000), the new interpretation of assessment requires a paradigm shift in higher education.

Three factors contribute to the need for a paradigm shift. First, faculty members’ experiences with assessment, for the most part, have been limited to their course-based assessment practices. They regularly grade their students’ performance against the established course goals. However, the new interpretation of assessment focuses on program- and institutional-level assessment. The assessment question posed by the Study Group, U.S. Department of Education, and accrediting commissions is not “how did a particular student meet course goals?” The assessment questions they are asking are “how well are students, as a group, meeting program and institutional goals?” and “what is the educational program’s cumulative effect on students?” Faculty members are
unaccustomed to treating assessment as a tool for quality improvement on the program level. But that is exactly what is being asked of them.

Second, as seen in the history of writing assessment, testing has taken place primarily outside the classroom and external agencies, such as the College Board, have typically been responsible. Those test results were not used to improve institutional quality. They served gate-keeping functions. In the new interpretation of assessment, large-scale or program-level assessment becomes the responsibility of the faculty, staff, and administration at the institution. And the results need to become fodder for how to improve the program.

Third, faculty members in higher education are unfamiliar with assessment-based accountability. Elementary and secondary education have undergone different types of assessment and accountability waves from the 1950s to today (R. L. Linn, 1998). From mandated program accountability in the 1960s to standards-based education in the 1990s, K-12 educators have experienced high-stakes program and statewide assessments. Higher education administrators and faculty members do not have the same history. Indeed, the new interpretation of assessment is a different worldview given assessment’s purpose in the past.

*Assessment, Outcome Evaluation, Program Evaluation*

Assessment, as defined in current higher education discussions, is a form of outcome evaluation. In an outcome evaluation process, the desired end effects or results of a program are stated as outcomes and measured (Kellaghan & Madaus, 2000). The results are compared to a standard and then a judgment is made as to how well the
outcomes were met. Outcome evaluation generally asks one question: to what extent are desired outcomes being met? The focus is on the end result, not on an explanation or interpretation of program processes, or on inputs and context. Using outcome evaluation results to improve program effectiveness is implied. In general, when an educational unit, company, or social service, determines how well it measures up to its desired goals, it is conducting outcome evaluation.

Several types of outcome evaluation exist. Influential curriculum evaluation models such as Tyler’s (1949) are a type of outcome evaluation. Characteristics of curriculum evaluation include the following: a) stating educational goals in terms of student behaviors; b) using criterion-referenced tests to measure instructional outcomes; c) using test data to restructure the curriculum (Glass, 1972). States’ standards-based programs, payment-by-results accountability programs, and performance management in the business sector are also types of outcome evaluation. Higher education institutions have looked to outcome evaluation literature, particularly curriculum evaluation, for guidance on how to meet the recent mandate for assessment.

Outcome evaluation has been called quasi program evaluation because the evaluation is limited to pre-determined outcomes and does not determine a program’s merit and worth (Stufflebeam et al., 2000). Comprehensive program evaluation is broader than outcome evaluation or assessment (Erwin, 1991). Program evaluation studies are expansive: they use stakeholders’ needs as criteria for judging, and they attend to all relevant outcomes, including unintended outcomes (Stufflebeam et al., 2000). Plus, program evaluation can provide guidance because a variety of questions are answered: Is
the program being implemented as planned? How appropriate are program policies? What influences are shaping the program? What are the intended results and how well are they being met? What are the unintended results? Is the program equitable? In higher education, types of program evaluation include accreditation, certification, and some forms of program review.

From the program evaluation perspective, outcome evaluation falls short in several areas. First, the focus on pre-determined outcomes prevents exploration of unintended or unanticipated outcomes. Second, the attention paid to the desired outcomes supersedes efforts to discover factors that affect the evaluation results. Finally, in some cases, the outcome evaluation focus is on a small number of easily measurable outcomes or on correct measurement and reporting requirements instead of valued goals that may be difficult to define and describe (Kellaghan & Madaus, 2000). These shortcomings have been brought up in discussions of higher education assessment and I will return to them in the section on Challenges.

*Outcome Evaluation and the Assessment Cycle*

Because current discussions of assessment place it in the realm of outcome evaluation, higher education institutions are following outcome evaluation principles, particularly curriculum evaluation, when designing assessment procedures. Curriculum evaluation’s influence is clear in the handbooks written about assessment in higher education. These handbooks (e.g., Maki, 2004; e.g., Nichols, 1995b; Nichols & Nichols, 2000; Walvoord, 2004) advise a cyclical approach with three fundamental parts: (1)
define outcomes; (2) determine how well outcomes are being reached; (3) use the results to guide pedagogical and curricular improvements.

**Part I: Define outcomes.** The outcomes are often called *student learning outcomes* (SLOs). It is recommended that the institution widely publicize the SLOs (Angelo, 1995; Study Group on the Conditions of Excellence in American Higher Education, 1984). SLOs are statements about the "knowledge, skills, and abilities that a student has attained at the end (or as a result) of his or her engagement in a particular set of higher education experiences" (Council for Higher Education Accreditation Institute for Research and Study of Accreditation and Quality Insurance, 2003, p. 5). Because faculty members have designed the curriculum and regularly judge student work, they are usually in a good position to develop the SLOs for their programs. Creating SLOs that faculty members agree upon and that can be investigated is difficult. But by doing so and by communicating them to the students, the curriculum will be improved according to Banta (2005).

When faculty members create an SLO that addresses student writing skills, particularly for the major, the SLO is often stated as, "students will effectively communicate in writing." Some campuses such as Idaho State University include a detailed list of writing-related SLOs for students nearing graduation. A few of these SLOs are "develop an effective thesis statement," "use language to reflect senior-level mastery of the professional vocabulary and knowledge base," and "avoid an excessive number of errors in spelling, word usage, and punctuation" (Lawrence et al., 1996, p. 209). At the University of Hawai‘i at Mānoa, the Faculty Writing Board has established
the following SLOs for seniors: "Students can (a) identify the primary genres of their field, describe identifying characteristics, and write in at least one of the genres; (b) use vocabulary appropriate for field-specific texts; (c) follow the writing, documenting, and formatting conventions that are appropriate to a field" (Manoa Writing Program Writing Board, 2003).

Part 2: Determine how well outcomes are being achieved. Once outcomes have been established, the extent to which students are achieving the outcomes is determined. The method selected to gather information must match the assessment goals and be technically sound (Jacobi et al., 1987). It hinges on the SLOs and on the intended use of the assessment. For example, if a faculty is concerned about grammatical correctness, the SLO may be that "students will be able to identify grammatical errors in written texts." For this outcome, an error-identification grammar test can measure student skill on the SLO. If the outcome is that "students will be able to identify and correct errors in their own writing," a grammar test is inappropriate. In general, methods to gather evidence include embedded course assignments, portfolios, performance tasks, tests, surveys, interviews, and observations.

If the method provides diagnostic information, it can help identify student weaknesses. For example, holistic scoring of writing can determine overall quality, but it cannot identify particular weaknesses because a single whole-quality score is given to each piece of writing. In contrast, primary trait scoring provides a score for each trait such as organization or grammar. Analyzing the scores given for each trait can point to strengths and weaknesses in writing skill. A measurement method that provides data
which pinpoint areas where improvements are needed is likely to help institutions meet
the higher education assessment movement’s goals.

**Part 3: Use results.** After data have been gathered and assessed, the results are
communicated to stakeholders—faculty members, administrators, students, regional
accreditation commissions, and state legislators (if required). However, dissemination of
assessment results is not the last step. The overarching goal and emphasis in the higher
education assessment movement is *use*. Using the score to give status information, rank,
or place is inadequate. Reporting results without subsequent action is insufficient. Part of
the new assessment paradigm that campuses have been asked to adopt includes using
assessment results to improve teaching and learning and create a shared academic culture.

*Challenges to Assessment Implementation in Higher Education*

Understanding the challenges faced by higher education institutions when
implementing assessment is instructive. Despite sufficient literature on how to assess and
case studies to serve as models, few institutions are using and documenting the impact of
their assessment efforts (Peterson & Einarson, 2001). Trudy Banta, one of higher
education assessment movement’s heroes, called her review of a decade’s worth of
contributions to *Assessment Update* “sobering and discouraging” (1999, p. 5). Thomas
Angelo (1996) asked, “After more than a decade of assessment practice, where are the
expected gains in student learning? . . . Why hasn’t all this well-intentioned assessment
activity led to more valuable, visible learning outcomes?” (p. 3). Program- and
institutional-level assessments have not gained much ground in higher education.
Institutions are engaging in assessment only because it is required by accrediting
commissions and, in some cases, state government (Banta, 2001a, 2001b; Ewell, 2003; Institute for Research on Higher Education, 1999). The potential of assessment to improve student learning and development has not been realized.

Faculty-related challenges. Assessment is a massive undertaking, requiring a high level of coordination among faculty within and across disciplines and strong administrative leadership. In general, faculty members have resisted the assessment movement. Given that assessment and its parent, outcome evaluation, have been used to support payment-by-results accountability programs, standardized testing programs, and school take-over by private organizations, faculty resistance is typically expected. Faculty members fear a loss of academic freedom, promotion and tenure decisions based on assessment results, and individual evaluation of faculty members based on student performance (Lopez, 2004; Walvoord, 2004). Resistance will likely continue until safeguards are put in place to prevent harsh punishments (e.g., closure of programs, denial of tenure) and retain faculty control over the curriculum and pedagogical strategies.

Faculty resistance may be related to a lack of understanding of the assessment movement in higher education and its potential value (Banta, 2005; Banta et al., 1999; Lopez, 2004; Nichols, 1995a). A lack of understanding may not be their fault. Multiple uses for assessment results are possible and inconsistent use of terminology causes confusion (Norris, 2006). While assessment guidelines established by regional accrediting commissions are aimed at internal, institutional self-improvement, state and federal governments want accountability and comparability across institutions so
taxpayers are assured that money is well spent and so parents and students are better informed. Comparability requires a common element across institutions, which may not be compatible with an institution’s internal, self-improvement efforts.

The various terms associated with the assessment movement can also cause confusion. First and foremost is the word assessment. As discussed earlier, faculty members who are not familiar with the assessment movement will define assessment based on their classroom practices or experiences with external, large-scale testing programs. In addition, each regional accrediting commission created its own set of assessment terms. For example, institutions under WASC guidelines complete an “Educational Effectiveness Review” while those under the Southern Association of Schools and Colleges (SASC) write a “Quality Enhancement Plan.” Different names, but the same basic principles of assessment exist in each. Book and articles on assessment use phrases such as “continuous quality improvement” and “outcomes assessment” to describe very similar activities. No common set of definitions exists.

Campus leaders, both in administration and faculty, can help overcome these challenges by clearly promoting a primary purpose for assessment at the institution, building protections for faculty members and students so assessment results have positive impact on teaching and learning, and consistently using assessment terminology.

**Measurement-related challenges.** Measurement deals with issues of validity, reliability, bias, scaling, norming, item analysis, and with test theories such as classical test theory and generalizability theory (R. L. Linn, 1993). It is the technical, quantitative side of testing that enables the faculty members (and other interested parties) to make
decisions about the accuracy and preciseness of the information gathered (Erwin, 1991). Unlike classroom tests, large-scale tests often require measurement practices that certify accurate results.

Measurement-related challenges can thwart assessment efforts. When measurement becomes the focus (supplanting improvement of student learning), those unfamiliar with measurement are more likely to exit the conversation and not participate in assessment efforts. Also, when measurement issues do need to be addressed, few at the institution have the expertise to do so because faculty members are trained in an area of specialization, not necessarily large-scale measurement issues. The assessment-movement literature skirts measurement issues, and assessment handbooks (e.g., Maki, 2004; Nichols, 1995b; Walvoord, 2004) provide only short explanations of validity and reliability. Because measurement issues are common, technical and methodological experts can play a valuable role guiding assessment planning, monitoring data collection, and verifying the validity and reliability of the results (Jacobi et al., 1987; Lopez, 2004). Consulting measurement experts familiar with higher education assessment requirements is recommended because the method selected to gather information is more likely to be effective if it can produce results that will be useful to the faculty members.

Use-related challenges. Advocates of higher education assessment and WASC accrediting guidelines recommend that institutions use results to guide improvements, primarily in curricula and teaching strategies (Lopez, 2004; Nichols, 1995b; Walvoord, 2004; Western Association of Schools and Colleges Senior Commission, 2001). One reason assessment fails to use results is because a "well-functioning feedback loop"
(Lopez, 2004, p. 54) may not exist. The feedback loop helps faculty members close the gap between desired outcomes and what the assessment results reveal (Lopez, 2004). The Study Group on the Conditions of Excellence in American Higher Education (1984) implied that a well-functioning feedback loop would be easily created. According to the Study Group:

If faculty are involved in choosing the assessment procedures and instruments and in evaluating student responses, they will be more likely to make appropriate adjustments in the content and delivery of curriculum . . . better baseline information on incoming students should spur more realistic and effective academic and student services programs and draw students’ attention to the outcomes their college values most. (1984, p. 56)

Faculty participation is helpful. Faculty members appear to be the only element required in the assessment equation because they are the institution’s connection to the students. Leadership, resources, and technical expertise facilitate assessment, but these are insufficient without cooperation by faculty members. In the end, the faculty members who modify curriculum and teaching strategies when needed are most likely to improve an institution’s ability to help students meet its desired SLOs. When faculty members do not make changes, the probable result is assessment reports sitting on shelves. Faculty participation throughout the process is strongly recommended by assessment advocates. However, they do caution that the use of results is neither automatic nor guaranteed.

A cause may be a lack of forethought regarding the connection between the data-collection method, the results, and the use of the results. As Shavelson and Huang (2003) point out, a conceptual framework that aligns ways of measuring with appropriate and desired outcomes is necessary; failure to create the conceptual framework prior to gathering data may cause more harm than improvement. Another cause may be that
academic researchers consider the production of knowledge and the reporting of that knowledge as use (Weiss, 1972, as cited in Shadish et al., 1991).

If administrators and faculty members responsible for assessment continually strategize about how they will use results, use-related challenges may be minimized. A program-evaluation approach (Norris, 2006) and program evaluators' experiences provide several options. Utilization-focused evaluators (Patton, 2000) recommend that before, during, and after assessment, questions are asked about the intended use of the assessment and who will use the results. By attending to questions about use throughout the planning stages, the assessment cycle has a better chance of being completed.

Empowerment evaluation (Fetterman et al., 1996), in which program participants are trained to evaluate their own program, demonstrates that participation can lead participants to see the value of conducting program evaluation and this results in ongoing program improvement. Empowerment evaluation practices also suggest that when participants set evaluation goals based on their perceived needs, they link their daily activities with desired program goals, which addresses the problem of the evaluation being far removed from the intended users of the results. In general, when participants were the creators and investigators, they were likely to use the results (Akin et al., 1990).

Another factor in overcoming use-related challenges is appropriate, timely distribution and effective reporting of results. Certainly credible results are necessary, but if they are poorly presented, the chance of use decreases. Attention to the message conveyed, audience, and medium is needed (Grob, 2004). Breaking down data by
possible contributing factors (e.g., students' majors) is advised, as well as providing comparative data (Kopczynski & Pritchard, 2004).

In conclusion, the term *assessment* in higher education discussions has a distinct meaning. Because it is aimed at improving student learning and development at the program and institutional levels, this type of assessment demands a shift in higher education thinking. While faculty members are familiar with classroom assessment and judging individual student performance, assessment of students' cumulative experiences after a series of courses, program, or bachelor's degree is different. Few faculty members have dealt with large-scale writing assessment. Administrators and staff members, accustomed to earlier accreditation requirements that emphasized inputs and processes, are also unfamiliar with judging program outcomes and using results to guide decision making. To overcome challenges to assessment, it is helpful if faculty members are willing participants in all stages of assessment planning and implementation. Faculty members' participation is valued because they are in the best position to improve students' learning if assessment results show that students fall short of expectations.

*Higher Education Assessment and Testing Writing Skill*

Because large-scale writing assessment has established methods of determining student writing skill, institutions are tempted to apply those traditional methods when answering the call to assess the writing skill of students at the end of their educational program. However, large-scale writing testing techniques have not been shown to fit the current interpretation or intended uses of assessment. Those techniques are designed to
rank students, not gather information that will guide program improvement. They are designed for matriculating students, not exiting college seniors.

The literature on large-scale writing tests provides only partial answers to higher education assessment issues. The literature thoroughly covers validity and reliability issues related to different measurement instruments when the purpose is to rank and predict college success. It addresses issues related to first-year writing course placement into English or English as a Second Language courses. But it does not provide sufficient answers to questions about how to appropriately define adequate or exemplary writing skills of college seniors and how to deal with texts written in all academic disciplines.

Institutions undertaking assessment of general education programs may choose to assess writing skill first, before tackling other areas of general education. Writing is selected because a lot is known about large-scale writing tests and faculty on campus may already be judging incoming students’ skills via a course placement exam. The assumptions are that the techniques of and theory behind large-scale writing tests will translate to program-based assessment of writing. In addition, personnel conducting placement exams can be tapped. However, relying on large-scale writing tests to inform program-based assessment of writing fails to meet the spirit and the goals of the assessment movement and ultimately goes against accepted theories of writing and writing development.

First, assessment’s primary purpose is to improve learning. When institutions apply large-scale writing test techniques to determine end-of-program writing skills, they reduce writing to a score on multiple-choice exams. Or, they constrict writing to an
expository or argumentative essay on a generic topic, written in a timed setting, and scored holistically according to how well it meets typical expository-essay criteria. For example, the Collegiate Learning Assessment (CLA) purports to examine "communication skills that most agree should be one outcome of a college education" (Council for Aid to Education, n.d.-b, para. 1). CLA's writing skill test consists of writing an argumentative essay in less than 90 minutes on an issue given during the test with no opportunities for feedback from others or extended time for revision, which composition experts stress as basic elements of writing. Statements on the holistic scoring rubric such as "use colorful but relevant metaphors, similes, etc.," "use creative and engaging examples," and "the structure syntax and organization add to the interest of their writing" (Council for Aid to Education, n.d.-a, p. 3) lend themselves to humanities writing and are typical of rubrics for English course placement. Whether these statements can be equally applied to writing across the disciplines has not been determined.

Such timed writing exams with essay questions on a potentially unfamiliar or uninteresting topics do not reflect the type of writing college students do. They are external to the curriculum and artificial. They are far removed from extended writing that incorporates outside sources (e.g., library sources), typically required in higher education. The holistic scoring and primary trait rubrics used in large-scale writing tests list generic writing skills, not skills specific to types of writing required in college (e.g., lab reports) or abilities of concern to many college professors such as ability to avoid plagiarizing. Applying the techniques of large-scale writing tests appears inappropriate in higher
education assessment because it does not match what faculty members teach in their classrooms.

Second, a holistic score fails to indicate which particular aspect of writing students did better on than another aspect. It provides little information to guide program improvement. In the context of higher education assessment, a single score may be meaningless. If the goal were to rank or place students, a single holistic score would provide sufficient information.

Third, the implications and social consequences of using a test score for a particular purpose need to be addressed (Cronbach, 1980; Messick, 1980, 1993; Moss, 1994). Consequential validity, the intended and unintended consequences affecting the individual, institution, and society, should be investigated (Messick, 1980, 1993). If the consequences are negative, Messick (1993) suggests that the exam not be used, even if it adequately describes students’ writing skills. Consequential validity can be determined by the local community of teachers and administrators because they are responsible for how the test scores are used and what actions will be taken based on those scores. For example, if timed writing exam scores will be used to guide curriculum changes, a teacher-level consequence may be altering classroom teaching strategies and administrator-level consequences may be increasing resources for faculty development workshops or increasing the number of faculty teaching writing. An unintended student-level consequence may be that students are led to believe that higher education values timed writing over extended, research-based writing and that first drafts (full revisions are not possible in a timed exam) are appropriate final products. An unintended faculty-
level consequence could be fewer assignments with research-based writing and more in-class timed writing to prepare for the timed exam. These are not necessarily bad consequences: the people affected decide whether the consequences fit their educational values and goals. However, in the field of composition, there is agreement that the consequences of multiple-choice and timed writing exams are negative and alternative ways of determining writing skill should be considered and used when feasible (Conference on College Composition and Communication, 1995).

Instead of taking large-scale writing tests as they exist today and applying them when assessing the writing skills of college seniors, institutions can meet external accountability demands by beginning with the overall goal of the higher education assessment movement: improve student learning. Practices aimed at ranking and placing cannot be imported wholesale into an assessment plan. Because use of results to improve a program is the reason for undertaking assessment and because failure to use results has plagued assessors and program evaluators, institutions would do well to heed suggestions for improving use. Those suggestions influence all elements of an assessment plan from creating student learning outcomes to interpreting results. The closer that the investigation of student learning is to the personnel who are responsible for that learning, the greater the likelihood of using the results. But because use is not automatic, provisions to facilitate use are recommended in an assessment plan. Successful writing assessment plans appropriately define writing and writing skill through student learning outcomes statements, and they build use of results into the assessment process.
Cultural-historical Theory and Writing Assessment

Tension exists between assessment as carried out by those doing large-scale writing testing for purposes of placing and ranking and assessment as touted by regional accrediting commissions, U.S. Department of Education, and American Association for Higher Education. The goals are different: placement and ranking versus program-level improvement of curriculum and learning. But, because measurement methods exist to place and rank students through large-scale writing tests, the temptation to use those measurement methods is great. A mechanism to enable assessment as a means to improve programs and student learning would be very useful to higher education institutions. The cultural-historical theory of cognitive development can serve as the basis upon which effective program-level writing assessment can be built. In this section I introduce cultural-historical theory, how it has been used to explain writing differences within academic disciplines, and its effect on defining and assessing writing.

Cultural-historical Theory

Cultural-historical theory, developed by Lev Vygotsky in the late 1920s, explains cognitive development as social, internal, mediated, and cultural (Vygotsky, 1978, 1981, 1987b). Cultural-historical theorists believe cognitive development originates in and is driven by social interaction, rather than biological forces. Complex cognitive developmental processes, such as speaking and writing, are first external, social processes. For example, words by themselves contain no meaning (Bakhtin, 1981). The meaning emerges through social interaction and derives from a cultural past as well as a person's past and present. When a person uses a word, the person tries to make the word
his or her own, but the word is “overpopulated with the intentions of others” (Bakhtin, 1981, p. 294). Meaning thus emerges through social activity, and over time the persons involved with spoken and written language internalize the social activity. Vygotsky referred to this internalization process as one in which the activity moved from the “interpsychological” (social) to the “intrapsychological” (cognitive) level (1978, p. 57).

Internalization, or appropriation as Rogoff termed it (1990), is different from external actions accumulating in the brain and becoming part of a person’s existing cognitive structures. According to Vygotsky, “the structure of speech that the child masters becomes the basic structure of his thinking” (Vygotsky, 1987b, p. 120). Learning to speak and write thus creates new cognitive structures and makes new forms of behaviors possible. When a person engages in speaking and writing activities with others, the person forms new connections and begins thinking in new ways. In an academic context, this suggests that as people participate in an academic community, it alters their cognition and shapes how they speak, write, and believe. Lave and Wenger (1991) investigated the internalization process and concluded that learning occurs through active participation with others in a particular context or community. In addition, the participant is defined by and becomes a different person in regards to aspects associated with the community (Lave & Wenger, 1991). The communities in which a person participates throughout their lifetime develop their language skills.

The person does not merely copy the community’s ways of speaking and talking. Internalization is not a mirror of the community’s social activity. The internalization is mediated by the person’s previous and present activities. There is a “stimulus-means”
(Valsiner & van der Veer, 2000, p. 371) between the external stimulus and the response. A mediated reaction to an event, instead of an immediate response, allows a person to apply logic before acting (Bruner, 1987). Take, for example, a student who is given a stimulus such as a class assignment to write an essay. The student’s response is mediated by previous and present experiences that shaped the student’s understanding of what writing is, how to write, what an essay is, and how to write an essay. Those experiences are the stimulus-means that result in a mediated response, not an automatic response to the stimulus. Culture and communities influence the mediation because cognitive processes, such as speaking and writing, start as external, social activities and take place in particular communities before they are internalized.

Applying cultural-historical theory to the study of writing resulted in researchers broadening their scope from studying the text alone to studying relationships among texts, authors, contexts, and readers. In doing so, they found clear links between the characteristics of the written texts and the community that produced them (Duszak, 1997; Johns, 1997). The links were so strong that such a community has been labeled a discourse community (Bizzell, 1982) to indicate that its written texts, methodology, and spoken communication patterns follow particular rules established by community members (Swales, 1990). If discourse communities exist, as is suggested by cultural-historical theory, assessment of college seniors’ writing skills becomes complex because senior-level students specialize in a particular major which may have a distinctive conception of good writing not wholly shared with other majors.
Discourse Communities

Discourse communities produce written products, known as genres, that have patterned ways of expressing knowledge and experience. They are repeatedly (re)invented through and found in recurring social situations. Because the community shapes and is shaped by its membership (Rogoff, 2003), genres change over time as the community membership changes. They evolve through the needs of the writers and readers who are involved with that type of writing (Bazerman, 1988). They are linked to social groups and the interactions of its members (Swales, 1990, 2004). Genre conventions signal a discourse community’s norms, epistemology, ideology, and social ontology (Berkenkotter & Huckin, 1995). For example, the community of literary critics values the words that poets and novelists use and thus in their writing they frequently use quotations in their written texts. On the other hand, the community of psychologists does not place as much value on the exact words used, and thus psychologists summarize and paraphrase more frequently than they quote. Cultural-historical theory suggests that genres are much more than linguistic patterns. Their use alters the thinking and cognitive structures of the users (see Luria, 1976, 1981).

The notion of a discourse community has been criticized because pinning down a discrete discourse community for close study is virtually impossible. A discourse community’s membership is fluid and genres are in flux. People simultaneously inhabit multiple communities to differing degrees (e.g., native discourse community, school, work, church). A genre may exist in multiple communities. In addition, within a
community, members may disagree and contest ideas accepted by the majority in the community.

Prior (1998) argued that cultural-historical researchers who try to discover a community’s rules are straying from cultural-historical theory. They want to investigate community-situated language activities but fall back to seeking and documenting community rules, which Prior believes destroys the cultural-historical nature of the study. He advised cultural-historical researchers of writing to explore participants’ wide-ranging socializing practices and not presume an academic discipline is a priori the greatest influence on writing practices.

Despite its critics and the difficulties defining boundaries, the concept of discourse communities is useful when studying writing from a cultural-historical perspective. Having a discourse community as the locus focuses attention on the social, situated nature of writing (Hyland, 2000). It allows researchers to study writing as historical product and acknowledge the interactions among writers, readers, and communities and the real patterns that emerge.

In higher education, the primary communities are the academic disciplines. Ethnographer Clifford Geertz (1983) viewed academic disciplines as “cultural frames” because each has social activities, habits of mind, and particular definitions and connotations of terminology. The terminology “through which the devotees of a scholarly pursuit represent their aims, judgments, justification, and so on” can reveal what the field is all about (Geertz, 1983, p. 157). Becher (1989) in his study of academic “tribes and territories” concluded, as did Geertz, that academic disciplines have recognizable
identities and cultural attributes. The ways in which professors act, their attitudes, and cognitive styles are connected to particular knowledge domains. Becher (1989) defined the boundaries of academic discourse communities through the organizational structures of the university, professional organizations, leading journals, academic perceptions of credibility, and areas of content studied. He argued that discourse communities can be determined by staying within the local confines of a particular university. I rely on Geertz and Becher when I study three academic disciplines as separate, identifiable entities and thus view them as distinct cases.

**Writing Standards in Discourse Communities**

The existence of academic disciplines as discourse communities with particular standards that are shaped by interactions among community participants has been explored. Bazerman’s (1988) historical study of scientific journal writing uncovered how textual features changed as the field of science moved from an acceptance of nature as it exists to the belief that nature be known through experimentation. Berkenkotter and Huckin (1995) extended Bazerman’s study with more recent scientific journal articles and concluded that the textual features continue to change due to changes within the scientific community: a) titles are more informative; b) the number of journals with abstracts has increased; c) results are more frequently stated in introductions; and d) descriptions of methods are not emphasized and are shorter. Berkenkotter and Huckin also studied which textual features that experts in the field of English Composition valued when evaluating conference proposals. Experts valued proposals that problematized an issue, conveyed a novel way to address the problem/issue, and used the
specialized terminology of the area. Proposals that specified methods and results and discussed novel ideas were not particularly valued (Berkenkotter & Huckin, 1995).

Cross-cultural studies of academic research texts support Becher's (1989) assertion that a local determination of academic discourse communities is best. When comparing English-speaking researchers' texts with those written by German and Polish researchers, differences were apparent (Duszak, 1997). English-speakers had a preference for stylistically well written texts, a straight-forward identification of the main goal in the opening statements, and an explicit structure; however, German and Polish researchers valued internal and external consistency of ideas, strict grammatical correctness (over reader-friendliness and a pleasing style), methodological precision, and evidence of the writer's thinking processes (Duszak, 1997).

Researchers have found that college professors from across the disciplines value similar textual characteristics when evaluating student writing but to differing degrees (Cooley & Lewkowicz, 1997). Professors in different academic fields had different expectations for student writing (Langer, 1992; Odell, 1992; Walvoord & McCarthy, 1990). Professors in arts and social sciences valued logical development more than professors in sciences and medicine; arts professors were less likely to call attention to grammatical errors; engineering professors rarely noted style problems but often noted word choice (Cooley & Lewkowicz, 1997). Students struggled to meet the various disciplinary expectations (Marsella et al., 1992). Engineering students felt that writing expectations of college professors was different from those held by industry professionals (Winsor, 1996).
However, some professors preferred non-disciplinary-based assignments for their undergraduates (Thaiss & Zawacki, 2002). Geisler (1994) found that professors applied criteria used by their academic community to graduate student writing, but not to undergraduate student writing. In addition, professors and administrators may believe that a universal standard of good writing exists (Johns, 1997; Russell, 2002; Zhu, 2004). Evidence of this belief is found in recently developed exams such as the Collegiate Learning Assessment and institutional plans to assess student writing using large-scale writing tests with generic essay topics and generic scoring rubrics. A universal standard of good writing is also supported by surveys that list the top writing skills that all college students should have (Jones et al., 1995; Rosenfeld et al., 2004) and by textbooks on writing that teach discrete skills (e.g., comma rules). The challenge for advocates of cultural-historical-based writing assessment in higher education is two-fold: overcoming the challenges to assessment in higher education in general and overcoming the belief that a universal writing standard exists. However, given the persistent belief in a universal standard of good writing and that some researchers (e.g., Geisler, 1994; e.g., Thaiss & Zawacki, 2002) have questioned whether professors apply disciplinary criteria to undergraduate writing, uncovering professors' criteria for senior-level writing is advisable.

Assessment of Student Writing From a Cultural-historical Perspective

Assessing student writing skill from a cultural-historical perspective poses challenges because research suggests that writing is a community-dependent, social act. Good writing appears to be defined and described differently by the people operating
within each community. Cultural-historical theory suggests that academic community members learned to write in ways accepted by their discipline through social interactions within that academic community. Participation led to a shared understanding of good writing in that community. It also altered the thought processes and cognitive structures of the community members, making new forms of behavior possible. In the same way, students learn to write in ways that meet the academic community's expectations through interaction and participation with community members. The issue to explore is whether faculty members believe their majors (especially at the college senior level) have participated sufficiently in the academic community and thus they expect student writing to meet academic disciplinary criteria.

Many methods of testing writing skills are not based on the cultural-historical view of writing and development of writing skill. Instead, the methods have relied on classical test theory that assumes that writing skill is a "fixed, consistent, and acontextual human trait" (Huot, 2002, p.83). Tests such as the SAT's 25-minute writing section, the Collegiate Learning Assessment, and UHM's writing placement exam hold that context-free writing tests are appropriate. These types of tests contribute to the on-going belief that a universal standard of good writing exists and can be taught to students.

A few researchers have proposed assessment models that are consistent with a cultural-historical framework. Huot (2002) argues for writing assessment strategies that take into account the contexts in which professors assign and assess writing. One form of a contextualized writing assessment is portfolio-based assessment (Camp, 1996). Students compile pieces of writing to create a portfolio. The pieces of writing were
written in and for particular contexts: class, work, volunteer work, etc. According to White (1994), using portfolios to assess student learning outcomes (SLOs) removes the reductionism associated with other forms of writing assessment. Because portfolios “bring teaching, learning, and assessment together as mutually supportive activities” (White, 1994 p. 27), they seem particularly suited for higher education assessment’s desire to use results to improve the program. Some campuses are using portfolios to assess student writing skill (as well as other abilities): Kalamazoo College, Miami University of Ohio, Southern Illinois University-Edwardsville, Truman State University, University of Wisconsin-Milwaukee, and Washington State University. Unfortunately, portfolio-based assessments are expensive and labor intensive, which prevents most universities from using them for program- and institutional-level assessments.

An alternative to portfolios is to use a single piece of student writing that was completed for a course assignment. Because it was completed for a course, the piece represents the students’ ability to complete a complex task in a meaningful situation (Camp, 1996). Because the students wrote from within a disciplinary discourse community, albeit a very novice position in the community, the writing can provide information about writing skills that professors in that discipline value. For example, professors in professional schools may want students to learn discipline-specific genres such as executive memos in engineering, reports in accounting, and clinical observation notes in nursing. Many professors are concerned about students’ ability to avoid plagiarizing and properly integrate other peoples’ words and ideas with their own.
When applying a cultural-historical stance to writing assessment, the definitions of writing and descriptions of writing skill should come from the academic discipline community and those involved with that community. However, several layers of community exist in higher education. A question that needs to be answered is to what extent professors apply their academic community’s standards to student writing. They might also be applying different standards. For example, the academic disciplines are gathered into groups such as the College of Arts and Sciences or College of Engineering. On a higher level than college is the entire university academic community. In higher education, professors inhabit multiple academic communities: discipline, college, institution. Any one of these communities or a combination of communities may be the source of the definition of good writing for professors. Plus, professors’ histories as learners are a mediating factor in their definition and description of good undergraduate student writing.

When planning higher education assessment, faculty members might be well served by exploring their understanding of and expectations for undergraduate student writing. Those explorations can be the first step in defining and describing student learning outcomes for writing that are meaningful to them and useful from an assessment perspective. Cultural-historical theory suggests that the mechanism needed is social interaction through spoken and written language. Such interaction is mediated and culturally based (as described earlier), and it can alter the cognitive structure and behavior of students and faculty members. Developing an assessment plan can provide opportunities for faculty members to gain conscious awareness of higher education
program-level assessment and replace previous understandings of assessment that are based on classroom and large-scale testing. In addition, conscious awareness of their beliefs about writing and writing assessment can lead them to revise any notions of universal standards for good writing. Although such opportunities for participation in regards to writing assessment efforts may require guidance from someone in the assessment community, expending the effort may finally break the dam that has been holding program-level assessment captive.

Summary

In this chapter I described and defined assessment from two perspectives: large-scale writing assessment and higher education program assessment. Program-level assessment in higher education has been defined as a continual process in which the institution systematically gathers information about student learning and then uses that information to improve student performance. Higher education institutions are required by accrediting commissions to adopt and implement this type of program assessment. In the area of writing skill assessment, a tension exists because the temptation is to apply traditional large-scale testing practices and adopt a universal definition of good writing when conducting program-level assessment of college seniors' writing skills. I suggested a cultural-historical based assessment plan as an alternative with greater probability of achieving the goal of improving student learning. A plan based on this theory can thoroughly involve faculty members and identify the student learning outcomes related to
writing that they value. A first step in the plan is to uncover the faculty members’ descriptions of what constitutes good writing.
Chapter 3. Research Design and Methods

Because research has shown that definitions of good writing vary across professional communities, the construct good writing in higher education may require a discipline-based definition and not a universal definition. To investigate, I went to University of Hawai‘i at Mānoa (UHM) faculty members in three academic disciplines to uncover their descriptions of good senior-level writing.

Research Questions

1. How do UHM faculty members in Art, Biology, and Psychology describe good student writing in their academic discipline?

2. What characteristics of student writing in upper-division courses contribute to the faculty members’ determination that the writing is good student writing?

3. From the faculty members' perspectives, how does their academic discipline shape their understanding of good student writing?

4. Why do the faculty members select particular characteristics? How do they justify their rationale for those characteristics?

Design Rationale

Before I describe my research design and methods, I review research designs used by other researchers to answer research questions similar to mine. One design comes from linguistics: analysis of text features (e.g., Cortes, 2004; North, 2005; Samraj, 2005). A second design uses surveys that ask respondents to list important characteristics of good writing or to rank a list of characteristics (e.g., Jones et al., 1995; Rosenfeld et al., 2004). These quantitative designs have the benefit of being able to tackle a large number
of texts or large populations. However, the designs typically view texts as stand-alone objects, outside the community or academic discipline of writers and readers. When conducting such quantitative studies, the researcher selects the text characteristics to be analyzed and creates the survey response options. How readers understand and define the text characteristics is not explored. Designs such as these are inadequate to explain the complexities associated with disciplinary writing because they do not examine the source or significance of writers' and readers' actions (Williamson, 1988).

Research designs that take a cultural- or socio-historical view of writing development include, at a minimum, a text and writer or a text and reader. Ideally, the designs allow for the study of activity: motives for writing, goals of writing, social relations among writers and readers, and the contexts (Prior, 1998). Examples of these designs include ethnography and case study. An ethnographic study focuses on a culture, social group, or system (Creswell, 1998). Because ethnography's goal is to "describe culture or aspects of culture" (Bogdan & Biklen, 2003, p. 27), it is an effective method to study how faculty members or students participate in a disciplinary community (e.g., Carroll, 2002; Sternglass, 1997; Winsor, 1996). Case study designs (e.g., Myers, 1990) explore how writers and writing function in particular situations and include multiple forms of evidence such as written documents, observations, and interviews. The focus of a case study is on a well-defined entity such as a person or distinct group. Designs such as these can elucidate the nature and function of writing in communities because they study more than the texts produced by the communities.
Within the cultural-historical framework there are various methods of collecting data. I considered using focus groups because they have been frequently used to create scoring rubrics for evaluating student writing (e.g., Barrit et al., 1986; Haswell & Wyche-Smith, 1994). When the research goals include building new ideas, reaching consensus, or helping create buy-in of an idea, focus groups are appropriate. However, because dominant members can control the discussion, group-think mentality can appear, and some participants (particularly those with lower status) may be unwilling to share information in a group setting, collecting data through disciplinary focus groups seemed inappropriate. I was interested in uncovering individual faculty members’ conceptions of good writing first and then determining the similarities and differences within and across academic disciplines.

Another method that I considered was the think-aloud protocol. Think-aloud studies have been used to identify text characteristics that readers attend to as they evaluate a text (e.g., Huot, 1993; Pula & Huot, 1993; Vaughan, 1991; Wolfe & Kao, 1996) and to examine how writers compose texts (e.g., Flower, 1994). Protocol analysis provides the researcher with a sequenced picture of how a task is completed. However, for the think-aloud method to be reliable, the participants do not interpret their thoughts as they complete the task. They do not explain their rationale or reasoning because this interrupts their normal cognitive process. Thus the picture is limited because it does not include why they attend to particular characteristics when they read.

Interviews have proven fruitful in uncovering students’ and professors’ perceptions of writing (e.g., Lavelle & Zuercher, 2001; North, 2005; Zhu, 2004).
Interviews allow the participants to express their understandings of an event, belief, situation, or action, using their own language. In qualitative interviewing, the interview is considered a conversation on a topic of mutual interest in which the researcher seeks to understand why the participant believes and acts as he or she does (Kvale, 1996). As a conversation, the meaning and structure of the interview are jointly constructed by the two people involved (Mishler, 1986). A weakness (which also exists in other forms of qualitative methods) is the potential bias or misunderstanding because the researcher and interviewee exist in different discourse communities: they do not share assumptions and common knowledge (Mishler, 1986).

Research Design and Framework

Given my research questions and my belief in cultural-historical theory, I selected a comparative case study design with data collection primarily through interviews. Case studies are appropriate when researchers ask “how” or “why” questions and focus on a phenomenon within a contemporary, real-life situation (Yin, 1994). A case study design can illuminate understanding of an occurrence, build a typology or continuum, and can suggest relationships among variables and construct theory (Merriam, 1998). A defining characteristic of a case study is the ability to restrict the entity being studied so that data collection is clearly limited (Merriam, 1998) and case has been defined as “a phenomenon of some sort occurring in a bounded context” (Miles & Huberman, 1994, p. 25). In education, an entity such as a student, program, or school can be a case. Because academic disciplines are distinct cultural communities with recognizable boundaries
(Becher, 1989; Geertz, 1983), I treat the academic discipline as a case and my unit of study.

The interview is the most common method of collecting data in case study designs, sometimes the only method (Merriam, 1998). Interviews are especially useful in case studies because they help researchers understand experiences and meanings from the perspective of the interviewees (Nievaard, 1996; Rubin & Rubin, 2005; Seidman, 1991). Unstructured and semi-structured interviews avoid presuming what the interviewees deem important. They can capture the readers' responses to a text, interaction with texts, and their rationale. In this study, two types of interviews took place: (a) unstructured, open discussions centered on the participants' evaluative reactions to three student texts and (b) semi-structured, open-ended interviews (see Appendix A for the interview protocol). The Protection of Human Subjects Institutional Research Board reviewed my research design and methods and granted my study exemption status (Appendix B).

Site

My study took place at UHM, which is the flagship campus of a 10-campus system. As a Carnegie Doctoral/Research University-Extensive institution, UHM offers 87 bachelor's degrees, 87 master's degrees, and 51 doctorates. Nearly 1,500 instructional faculty members teach over 14,000 undergraduate and 6,000 graduate students (University of Hawai'i Institutional Research Office, 2005). With on-campus housing for only 22% of the undergraduate students, UHM is a commuter campus.
Attention to undergraduate writing has been a priority for the faculty and administration since the late 1980s when the Mānoa Writing Program was created. UHM requires that undergraduates complete a first-year writing course and five writing-intensive courses as part of their general education requirements. The first-year writing course is taught by faculty members from the English department and Second Language Studies department. Prior to enrolling in the first-year writing course, students take a writing placement exam consisting of one essay, holistically scored by graduate teaching assistants who are trained by Mānoa Writing Program staff. Less than 5% of the matriculating students are placed in remedial writing courses.

Faculty members offered the first writing-intensive courses in spring 1988. Since 1990, students have been able to choose from over 900 writing-intensive sections in 80 departments each academic year. Unlike some university writing-across-the-curriculum programs in which only English department faculty members teach writing-intensive courses, UHM faculty members teach the writing-intensive courses in their subject area. Faculty volunteer to teach these courses and apply for the writing-intensive designation. The Mānoa Writing Program offers faculty development workshops for faculty teaching writing-intensive courses and oversees the designation of courses as writing-intensive.

I chose UHM as my research site because as an employee of the Mānoa Writing Program since 1993, I have talked to many faculty members about writing, trained readers to score the writing placement exam, and offered faculty development workshops on teaching with writing. Those conversations, training sessions, and workshops piqued my interest in finding out how faculty members read and evaluate undergraduate student
writing. When UHM administrators called for program- and institutional-level assessment in response to the Western Association of Schools and Colleges (WASC) accreditation requirements, it presented me with the opportunity to investigate my interest in ways that could also assist the university respond to the call for assessment. In addition, because of strong faculty support of the writing-intensive program, I believed that faculty members who have taught writing-intensive courses would be allies in UHM assessment efforts. I could tap their working knowledge and professional expertise and ask them to participate not only in my study, but also in future assessment planning.

Cases and Participants

Maximizing learning (Stake, 1995) and showing different perspectives (Creswell, 1998) are valued when choosing cases. The cases with the greatest potential for doing that at UHM are the fields of Art, Biology, and Psychology because they are large undergraduate programs at UHM, accounting for about 13 percent of the undergraduate degrees earned and 12 percent of the declared majors. These fields represent three distinct perspectives in the colleges of arts and sciences curriculum, which graduates over half of the student population. These three fields regularly offer upper-division writing-intensive courses. Each case consisted of four faculty members from the academic discipline: Art, Biology, or Psychology. At UHM, there are twenty faculty members in Art, fifty-one in Biology, and twenty-seven in Psychology. A total of twelve faculty members participated in my study.
I used purposeful sampling to first select three key informants, one from each field. Researchers use purposeful sampling to deliberately select participants who are likely to be "information-rich" (Gall et al., 2003, p. 165). They have expert knowledge related to the central phenomenon being studied; they have the greatest potential to shed light on the research questions. In my study, the "information-rich" participants were UHM professors who have taught upper-division undergraduate writing-intensive courses. They have over a decade of experience as a member of their discipline and have experience reading and grading student writing. Two of the key informants had served on the UHM Writing Board which oversees the University’s writing-intensive program. (See Table 3.1.) The three key informants were also participants in the study.

Table 3.1. Key Informants

<table>
<thead>
<tr>
<th>Key Informant*</th>
<th>Discipline</th>
<th>Rank</th>
<th>Number of years as a professional in the discipline</th>
<th>Taught upper-division writing-intensive courses</th>
<th>Served on the Writing Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark</td>
<td>Art</td>
<td>Associate Professor</td>
<td>18</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sarah</td>
<td>Biology</td>
<td>Professor</td>
<td>34</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Rob</td>
<td>Psychology</td>
<td>Professor</td>
<td>38</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Pseudonyms are used.

I asked the key informants to nominate three faculty colleagues with experience teaching writing-intensive courses and who, combined, would represent different specializations within the undergraduate program, a range of years in the discipline, and include males and females. I chose this peer nomination method because the key informants have knowledge about other faculty members within their department. In
addition, faculty members may be more likely to participate if they receive an invitation from a colleague. The four participants (the key informant and three nominated peers) from each discipline provided a range of specializations and years in the field, and included both males and females (see Tables 3.2 and 3.3). Twelve UHM faculty members participated in the study.

Table 3.2. Participants: Rank, Gender, and Years in Profession

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Assistant</th>
<th>Rank</th>
<th>Gender</th>
<th>Years in discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0-10</td>
</tr>
<tr>
<td>Art</td>
<td>1 1 2 3 1</td>
<td></td>
<td>M F</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>2 0 2 2 1</td>
<td></td>
<td>M F</td>
<td>1 1 0 2</td>
</tr>
<tr>
<td>Psychology</td>
<td>2 1 1 2 2</td>
<td></td>
<td>M F</td>
<td>2 0 1 1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5 2 5 7 5</td>
<td></td>
<td>4 2 1 5</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.3. Participants: Areas of Specialization

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Areas of specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>• Art history (2)</td>
</tr>
<tr>
<td></td>
<td>• Design</td>
</tr>
<tr>
<td></td>
<td>• Studio art</td>
</tr>
<tr>
<td>Biology</td>
<td>• Algal biology</td>
</tr>
<tr>
<td></td>
<td>• Developmental biology</td>
</tr>
<tr>
<td></td>
<td>• Ecology and behavioral biology</td>
</tr>
<tr>
<td></td>
<td>• Marine ecology</td>
</tr>
<tr>
<td>Psychology</td>
<td>• Behavioral neuroscience</td>
</tr>
<tr>
<td></td>
<td>• Developmental psychology</td>
</tr>
<tr>
<td></td>
<td>• Human learning and research</td>
</tr>
<tr>
<td></td>
<td>methodology</td>
</tr>
<tr>
<td></td>
<td>• Social psychology</td>
</tr>
</tbody>
</table>

Text Selection

Participants discussed three student texts in the first interview. To collect the texts, I emailed each participant after they agreed to participate and asked them to select a
piece of student writing. The email listed the following criteria to guide them: a) the participant must believe the text represents good writing, b) the text was written for an upper-division course, and c) the text represents the type of writing that students do in that discipline.

I selected these criteria for several reasons. To address the assessment requirement that is part of the accreditation process, UHM must create exit standards for writing at the college senior level. The exit standards should be derived from good, senior-level student writing. Thus, I asked participants to select texts that they believed exemplified the qualities of good writing. Because characteristics of good writing are context-dependent, the piece of writing should be typical of the discipline. Generalization from the selected texts to writing in the discipline is more likely if the selected texts are representative.

I collected the pieces of student writing before the interviews began. Eleven participants provided a student text that met the criteria.¹ Three texts from each discipline were randomly selected for a total of nine texts. All identifying information (student name, course, course instructor’s name, date) as well as written comments and grades were removed from the text. I then photocopied each text and returned the original to the participant. During the first interview session, I gave each participant a clean copy of the three texts written by students in his or her discipline (i.e., a participant from the Psychology department read three texts written by students in upper-division Psychology

¹ One Psychology participant supplied a piece of writing and then decided to not participate. However, he agreed that the piece of writing could be used in the interviews with Psychology participants. The last participant in Psychology who agreed to participate did not supply a piece of writing.
courses). The texts discussed in the interviews varied in length, genre, and content (see Table 3.4).

Table 3.4. Description of Student Texts

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Text Length</th>
<th>Genre</th>
<th>Content</th>
<th>Involved outside sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>A1 3 ½ pages</td>
<td>Artist manifesto</td>
<td>Sound (music)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>A2 4 ½ pages</td>
<td>Researched essay</td>
<td>Beauty in art</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>A3 6 pages of text; 1 page of references</td>
<td>Interpretive study</td>
<td>Chinese scroll</td>
<td>Yes</td>
</tr>
<tr>
<td>Biol.</td>
<td>B1 5 pages of text; 1 page of references</td>
<td>Review of an issue</td>
<td>Introduced fish species</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>B2 5 ½ pages of text; ½ page of references; 4 figures/tables</td>
<td>Lab report</td>
<td>Plant succession after a fire</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>B3 10 pages of text; 1 page of references; 4 figures/tables</td>
<td>Lab report</td>
<td>Sea urchins</td>
<td>Yes</td>
</tr>
<tr>
<td>Psych.</td>
<td>P1 1 ½ pages</td>
<td>Essay</td>
<td>Schizophrenia</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P2 2 ½ pages</td>
<td>Essay</td>
<td>Encoding and generalization</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>P3 7 pages of text; 2 pages of references; 1 table</td>
<td>Review of the literature</td>
<td>Domestic violence</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Data Collection

I collected data through interviews with the participants, and I collected the assignment handouts that the participants had given to their students.

Interviews

Primary data collection was through two interviews with each of the twelve participants. The first interview was an unstructured, open-ended interview in which participants discussed three student texts. The second interview was semi-structured with questions related to specific issues raised during the first interview and questions from an
interview protocol (see Appendix A). The interviews were audio taped and the tapes were transcribed within several days of the interview. The interviews took place in the faculty member’s office on the UHM campus.

The unstructured, open-ended interview. The primary goal of the first interview was to elicit the particular characteristics of the student texts that made them examples of good writing in that discipline. I scheduled the first interview after I received and selected three student texts. At the first interview session, I gave the participants a copy of the consent form with a brief description of the study (see Appendix C). I then gave them verbal directions: I asked them to read each text and tell me what made it an example of good writing (see Appendix A). The verbal instructions had been pilot tested with a non-participating faculty member, revised, and then reviewed by an evaluation specialist and revised again prior to data collection. After receiving instructions, the participants read the first text written by a student in their discipline. I varied the sequence in which the participants read the student texts because reading a particular text might influence the response to subsequent texts. For example, a participant from Art read text A1, A2 and then A3 while another Art participant read A2, A3, and then A1. I started the tape recording after the participants indicated they had finished reading the first text and were ready to discuss it.

After reading, some participants immediately began talking about the text. If they did not begin, I prompted them with the question, “So what did you think was good?” Typically the participants started with a long description. I took notes and when they finished, I asked follow-up questions based on the notes I had taken. Throughout the
interview, I took notes and asked participants to explain and to use specific sections of
the student texts to illustrate their points. After discussing the first text, the same process
(silently read and then discuss) took place for the remaining two texts. The tape recorder
was shut off while the participants read.

The first interview session averaged 120 minutes, with the shortest session being
100 minutes and the longest being 140 minutes. Participants read silently for 30 to 45
minutes of the session and transcripts ranged in length from eleven pages to twenty-three
pages (single-spaced text). During one interview, the tape recorder failed when the
participant was discussing the third text. Immediately after the interview, I recreated the
content based on the notes taken during the interview.

The semi-structured interview. The semi-structured interview allowed deeper
probing into and clarification of the text characteristics the participant mentioned during
the open-ended interview. Additionally, it served as a form of member checking (Lincoln
& Guba, 1985) because I was able to verify that I understood what the participant had
said during the first interview. A week's time between the open-ended and semi-
structured interviews allowed sufficient time for me to transcribe the first interview and
conduct a preliminary analysis of the transcript.

The preliminary analysis served as the basis for most of the questions asked
during the semi-structured interview. I tailored the questions in this interview to each
participant. To develop the questions, I read the first interview transcript and wrote
marginal notes that summarized points made. I then grouped the points by content into
categories. I read the transcript again, keeping the categories in mind. When elaboration,
clarification, or the participant's rationale was needed, I created open-ended questions. In addition, I was aware of the categories created for other participants and consciously looked for evidence of those categories. If, in the first interview, a participant did not offer information related to a category that others in his or her discipline emphasized, I crafted an open-ended question or comment regarding that category for the semi-structured interview. For example, three Art professors commented that text A1 was unorganized. When the fourth Art professor did not mention that during his discussion of the text, I stated: “Some others in your department did not feel this was organized” and let the professor respond.

An interview protocol was also used during the semi-structured interview (see Appendix D). Participants answered a common set of questions after they answered their set of tailored questions. The interview protocol was needed because of the unstructured nature of the first interview: participants directed the first interview. The interview protocol ensured that participants provided a thorough list of characteristics believed necessary in good writing and shed light on their perception of whether the discipline influenced how they evaluate student writing.

Assignment handouts

Secondary data consisted of assignment guidelines written by the participants for their students. These were collected to aid in confirming participants’ descriptions of good writing. They were not shared with the participants in an effort to focus their attention on the student texts. If participants were given those documents, they might
focus on how well the student completed the assigned task or on how well the instructor designed the assignment.

Data Analysis

The data analysis process consisted of reducing the transcript data through open coding, creating data displays in the form of matrices, drawing conclusions and testing them (Miles & Huberman, 1994). The analysis process was informed by the constant comparative method which was originated by Glaser and Strauss (1967). This method involves comparing datum with other data so that a fuller understanding is reached and relationships among data are explored. Three levels of comparisons were made: within-subcase/participant, within-case/discipline, and cross-case.

Analysis of interview transcripts

Open coding. I created codes inductively from the transcripts and did not begin with any pre-determined codes. I started by reading a participant’s transcripts of both interviews. I read line by line, asking, “What is this about?” The answer to that question became a code that included the participant’s words and phrases. When the participant was answering my question about what makes the text good, I grouped the codes into an overarching category I refer to as “text-based codes.”

By following this open coding process, I started with descriptive codes based on content of the transcripts (Miles & Huberman, 1994) instead of applying conversation or discourse analysis methods (Silverman, 1993). QSR International’s NVivo software
(Richards, 2006) was used to track the descriptive codes I created and the coded transcript segments.

After coding a participant’s transcripts, I used NVivo to create a code-summary report that included the text segments for each code. The code-summary report pulled together all text segments that have a particular code and displayed them in a single report. By viewing a code-summary report for each descriptive code, I made a within-subcase/participant comparison: I examined the segments for consistency, contradictions, and whether the segments added new information or repeated (Rubin & Rubin, 2005). During this process, I created definitions and descriptions for each code (Miles & Huberman, 1994). Then I started coding the next set of transcripts. Again, I read line by line asking “what is this about?” When the answer was similar to the answer from the previous set, I used the existing code. When the answer was not similar, I created and defined a new code. After coding the set of transcripts, I did a within-subcase/participant comparison to confirm the consistency of my coding.

As I coded, I wrote memos (an NVivo feature) to track hunches and concerns I had about the coding scheme such as a code might be too broad or it might overlap another code. I frequently used code-summary reports to check whether I applied codes consistently: the code-summary report could display the text segments with the same code from all coded transcripts. By continually comparing coded segments, I confirmed or rejected hunches and modified the coding scheme as needed, adding, deleting, and merging codes and re-coding transcripts (Rubin & Rubin, 2005). For example, when I reviewed the code-summary report for a code named “clarity” after coding four
participants' transcripts, I realized the code had become unwieldy. "Clarity" segments of the transcripts referred to several distinct text characteristics such as grammar errors and ambiguous sentences. I re-coded these text segments into more fine-tuned codes and deleted the code "clarity." I also added codes throughout the coding process. Sometimes the additional code represented a difference across disciplines. For instance, I did not need a code "title" until I started coding transcripts from Biology participants. I repeated the process of coding and comparing until I had coded the 24 transcripts.

I then reviewed the coding scheme and grouped the codes into categories (see Table 3.5). These categories and codes were the basis for the matrices (Miles & Huberman, 1994) that I created in the next stage of analysis. At this point I examined the codes for idiosyncratic terminology. Because I had based the first code set on words and phrases used by the participants, some codes were unclear when taken out of the context of the interview session. For example, several participants had referred to "sophisticated thinking" and I had created such a code. Upon examining the transcript segments with the "sophisticated thinking" code, I decided "complex" better conveyed the meaning of the participants.

Matrices. Because a goal of this study was to define good writing in Art, Biology, and Psychology, I wanted to examine the similarities and differences within each discipline and across the disciplines. A visual display of data in the form of a matrix (a table with rows and columns) facilitated comparisons within and across cases/disciplines. According to Miles and Huberman (1994), a matrix provides a coherent, organized view of data, allows comparisons, and helps make and verify conclusions. I placed the codes
<table>
<thead>
<tr>
<th>Type</th>
<th>Category</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text-based</td>
<td>Structure</td>
<td>1. Focal issue</td>
<td>Establishes a focal issue through statement(s) that delineate scope, often by a thesis statement or hypothesis.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Organization</td>
<td>Sets up global organizational expectations and then fulfills them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Coherence</td>
<td>Forms relationships across ideas by paragraphing, using transitions, consistently referring to concepts (e.g., a word or phrase is used throughout the text to identify the same concept).</td>
</tr>
<tr>
<td>Development</td>
<td>Development of Ideas</td>
<td>4. Definition</td>
<td>Defines terms, operationalizes concepts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Evidence and explanation</td>
<td>Develops or supports ideas by providing evidence and explanation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Contextualize</td>
<td>Places the student writer’s ideas in the context of what’s already known, often by comparing or relating writer’s ideas to those in other sources.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Hook</td>
<td>Opening paragraph captures the reader’s attention.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Inference</td>
<td>Makes inferences from data or evidence.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Significance</td>
<td>Justifies or provides rationale for the importance of the text’s focal issue.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Complex</td>
<td>Contains complex ideas; goes beyond superficial, commonplace ideas; reveals deep content knowledge; goes beyond repeating of sources; indicates sophistication of ideas and thinking; suggests nuanced thinking.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Tell a story</td>
<td>Tells an “academic story” about the text’s focal issue through background information, discussion of problem, and solution or results.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Unique contribution</td>
<td>Contributes to the existing body of knowledge on an issue.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13. Voice opinion/stance</td>
<td>Voices the student writer’s opinion, stance, observation, belief, idea, or hypothesis.</td>
</tr>
<tr>
<td>Quality</td>
<td>15. Sources</td>
<td>Uses reliable and valid sources in regards to type, publication date, expertise of author. (Sources include library items, Internet sites, and personal communications.)</td>
<td></td>
</tr>
<tr>
<td>Genre</td>
<td>16. Title</td>
<td>Informs reader of text’s focal issue in the title.</td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td>17. Abstract</td>
<td>Opens with a stand-alone section that summarizes the entire text.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18. Methods</td>
<td>A “methods and materials” section that describes the methods used to collect data or evidence.</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.5. (continued) Codes

<table>
<thead>
<tr>
<th>Type</th>
<th>Category</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text-based</td>
<td></td>
<td>19.</td>
<td>Results A &quot;results&quot; section that provides the results obtained through the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>stated research methods.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.</td>
<td>Data display Incorporates tables, figures, charts, pictures, graphs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21.</td>
<td>Conclusion Ends with the appropriate elements of a concluding paragraph or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>section.</td>
</tr>
<tr>
<td>Style</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jargon</td>
<td>23.</td>
<td>Employs jargon or technical terms instead of student writer's own words or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>simple language.</td>
</tr>
<tr>
<td></td>
<td>Poetic</td>
<td>24.</td>
<td>Contains poetic or imaginative words, phrases. Rhythmic.</td>
</tr>
<tr>
<td></td>
<td>Tone</td>
<td>25.</td>
<td>Conveys a mood such as boring, monotone, spirited, formal, academic,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>conversational.</td>
</tr>
<tr>
<td>Rules</td>
<td>Word choice</td>
<td>27.</td>
<td>Chooses precise, effective words.</td>
</tr>
<tr>
<td>General</td>
<td>Citation</td>
<td>28.</td>
<td>Follows a style guide’s rules for citing sources.</td>
</tr>
<tr>
<td></td>
<td>Grammar and</td>
<td>29.</td>
<td>Follows grammar, mechanics, and punctuation rules.</td>
</tr>
<tr>
<td></td>
<td>mechanics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>30.</td>
<td>Appeals to the reader because it provokes reader interest, piques reader</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>curiosity.</td>
</tr>
<tr>
<td></td>
<td>Audience</td>
<td>31.</td>
<td>Communicate to an average reader; communicate so that a non-specialist could</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>understand.</td>
</tr>
<tr>
<td></td>
<td>Publication</td>
<td>32.</td>
<td>Achieves a quality that is close to publication quality.</td>
</tr>
<tr>
<td>Participant-based</td>
<td>Discipline</td>
<td></td>
<td>Participant’s perceived influence of the discipline (the academic community)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>on his/her evaluation or view of student writing.</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td></td>
<td>Participant commented on the possible gender of the student writer.</td>
</tr>
<tr>
<td></td>
<td>Knowledge</td>
<td></td>
<td>Participant’s perceived ability to evaluate the content of the student text.</td>
</tr>
<tr>
<td></td>
<td>Learned</td>
<td></td>
<td>Where and how participant learned to write.</td>
</tr>
<tr>
<td></td>
<td>Student capability</td>
<td></td>
<td>Participant’s perception of student preparedness for college writing, writing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>capabilities of undergraduates and seniors (particularly majors).</td>
</tr>
<tr>
<td></td>
<td>Student circumstances</td>
<td></td>
<td>Participant inferred the student circumstances surrounding the production</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>of the text (e.g., student did not have sufficient time to complete the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>assignment, student had completed prerequisite courses).</td>
</tr>
</tbody>
</table>
Table 3.5. (continued) Codes

<table>
<thead>
<tr>
<th>Type</th>
<th>Category</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>Teaching</td>
<td>• Teaching</td>
<td>Participant’s strategies for teaching writing-intensive courses.</td>
</tr>
<tr>
<td></td>
<td>Tradition</td>
<td>• Tradition</td>
<td>Participant-identified tradition, practice, or value of the academic/professional community</td>
</tr>
<tr>
<td></td>
<td>Values</td>
<td>• Values</td>
<td>Participant’s beliefs about the value of learning to write, being a good writer.</td>
</tr>
<tr>
<td></td>
<td>Writing across the academy</td>
<td>• Writing across the academy</td>
<td>Participant’s perception of good writing in academic communities across the curriculum, writing in other academic communities.</td>
</tr>
</tbody>
</table>

and representative text segments into matrices as a way to better compare within and across participants and disciplines. I created three types of matrices.

*Within-subcase/participant matrices.* The within-subcase/participant matrix visually displayed the categories and codes by participant. I filled in the matrix with codes and data from each participant (see Appendix E for an excerpt). The matrix allowed me to see the text characteristics that the participant did and did not mention, and it contained a representative quotation for each code.

*Within-case/discipline matrices.* Next I created a within-case/discipline matrix for each discipline, Art, Biology, and Psychology by taking data from the within-subcase matrices. On the discipline matrix I recorded the number of participants who mentioned each text characteristic (see Appendix F for an excerpt). The discipline matrix allowed me to understand each case studied in depth before moving to a cross-case analysis. I was able to make and verify conclusions such as the Art participants valued texts in which students voiced a personal stance or belief.

*Cross-case/discipline matrix.* The last matrix I created was a summary of the within-case/discipline matrices. I listed each discipline and code and filled in the number
of participants from each discipline who discussed that code when they read the student
texts. This matrix allowed me to clearly see the similarities and differences across the
cases/disciplines. When all four or none of the participants from a discipline mentioned a
particular text-based code, I wrote an assertion for that code that included the other
disciplines. For example: “All participants valued texts that establish a focus.” “Art and
Biology participants valued sophisticated content while only two Psychology participants
did.” “Several Biology participants valued texts that contributed to the body of
knowledge on an issue while none of the Art and Psychology participants did.” I then
reviewed the assertions with the participant-based codes in mind in order to develop a
possible reason for the assertion. For example, Art and Biology participants appeared to
value sophisticated content because they believed undergraduate students were capable of
high-quality thinking.

Analysis of assignment handouts

I summarized the assignment guideline sheets and grading criteria, which made
comparisons possible. To summarize, I read each document and created a list of features
found in each, such as task, purpose, topic/hypothesis, format (page limits, citation
requirements). Then I created a simple yes/no checklist indicating which features were
present for each participant. To compare within discipline, I counted the number of
participants within a discipline whose assignment handouts listed the features. To
compare across disciplines, I listed the features found in all three disciplines, in two
disciplines, or unique to one discipline.
Role of the Researcher

According to Rubin and Rubin (2005), the interviewer’s personality, interests, moods, and biases affect the interview. In addition, the interviewer can properly or improperly shape the data because the interviewer is essentially the data collection tool. Knowing this, I took steps to increase the likelihood that the information I gathered during the interviews reflected the participants’ emphases and points of view. For example, I did not schedule more than one interview on the same day because I needed to be fully focused and engaged during each interview. Before entering the participant’s office, I prepared by reminding myself that my conduct would set the tone for the interview session and thus I needed to be friendly, curious, and thankful for their time. For the second interview, I arrived well prepared with questions that would clarify concepts for me and that had the potential to be interesting for the participant to answer. With most participants I think I succeeded because at the conclusion of the interviews, interviewees made several positive comments. Some stated that they felt they better understood what they looked for in student writing, which they only tacitly knew beforehand. Others stated that the interviews were thought provoking. Several commented that the interviews were hard work: they had to carefully read student texts, discuss them in detail, and answer my probing questions.

The role that the researcher assumes, or is placed in by the participants, influences the quality of the interview (Rubin & Rubin, 2005). My role varied, depending on the interviewee. Because I have worked at UHM for over thirteen years, I knew three of the participants because they served on the Mānoa Writing Program’s Faculty Board when I
was working with that Board. Two participants had attended my faculty development workshops and I am a friend of one participant. I believe that knowing these participants helped to quickly establish a trusting relationship between us. I did not know the remaining six participants, but they were aware of my position at the Mānoa Writing Program. Because they volunteered to teach writing-intensive courses, I felt we shared a common interest related to student writing. I communicated to them my genuine curiosity in finding out what they considered good student writing. I think they viewed me as credible, capable, and thus they were willing to describe in-depth their conception of good student writing. The amount of time (at least 160 minutes) they were willing to spend with me, explaining their evaluative reactions to student texts, partly showed the success of the interviews. They took the time to reference particular sentences and phrases in the student texts to illustrate their points.

According to Mishler (1986), outsiders to a community do not share the community members' assumptions or knowledge common to that community which can cause misunderstanding and misinterpretation. So one of my goals was to comprehend the terms, meanings, and understandings associated with student writing from the participants' points of view. Participants were aware that I was not of the same community and this may have been advantageous because some appeared to make an extra effort to explain concepts that required discipline-based knowledge. For example, a Biology professor described his current research project and showed me photos from his research site to explain what he meant by “tell a story.” An Art professor brought me articles from an art journal and pointed out different sections to help me understand
writing in contemporary art criticism. Rubin and Rubin (2005) report a similar effect in cross-ethnic interviewing when the interviewer is not of the same ethic group as the interviewees: the interviewees realize the need to explain cultural knowledge that is taken for granted by member of the community.

Because researchers' biases can shape the data collection and analysis, I spent time assessing my beliefs before collecting data. The composition and rhetoric program that I had completed and writing-across-the-curriculum literature that I had read taught that disciplinary differences exist and manifest themselves in written products. A tenet of the writing-across-the-curriculum movement is that writing is best taught by practitioners within a discipline. Thus at UHM, subject-area professors taught writing-intensive classes, e.g., biology professors taught biology writing-intensive courses. Reflecting on this, I knew that I agreed and believed that academic disciplines have different epistemological beliefs or ways of knowing, which cause differences in written products. I surmised that the participants would talk about how evidence is used in their field to create or demonstrate knowledge. In addition, I became conscious of my assumption that undergraduates are not aware of disciplinary differences and therefore have difficulties successfully completing writing tasks. Because they typically take courses from multiple disciplines in the same semester, students have to shift how they write to meet disparate demands and conceptions of good writing.

I believed (and continue to believe) that most faculty members were not adequately communicating their expectations for writing to their students. In addition, I anticipated a lack of a common language or terminology across disciplines. I had a hunch
that terms like “clarity” and “organization” would be defined in different ways by the participants. I entered the interviews prepared to ask the participants to clarify terms and use examples from the student texts to illustrate their meaning.

These preconceptions became clearer to me as I did the preliminary analysis of the first interview sessions. The follow-up questions in the first few interviews were typically related to my preconceptions. In most situations this was appropriate because my preconceptions had shaped my research questions and my desire to find answers led to my line of questioning. However, I became aware that I often asked follow-up questions related to the use of evidence because of that bias entering the study. I began to monitor my questions in this area and worked to ask follow-up questions in areas that the participants had stressed.

**Trustworthiness**

Several steps were taken to ensure the accuracy of the results. During the second interview, I encouraged each participant to do a member check (Lincoln & Guba, 1985) by clarifying and correcting any misunderstanding that I had after preliminary analysis of the first interview. The participants helped by being forthcoming in the level of detail and the examples they described. As mentioned earlier, they referenced specific sections of the student texts. They also included examples and stories beyond the three student texts that helped orient me to the context in which they worked. For example, one Biology professor described how plants recover after fire in Oklahoma fields compared to Hawaii’s mountainsides. She noted that published research in this area was geographically specific.
She also explained how non-native species can alter the nitrogen composition of the soil, making it impossible for native plants to survive. Native plants then become endangered. She gave these examples to help me understand which library sources are considered appropriate and how writers justify significance of the topic.

My previous experience interviewing, transcribing, and coding qualitative data taught me the benefits of an audit trail (Guba & Lincoln, 1982). I carefully tracked the development and evolution of the coding scheme in a researcher's journal, defined each code, and used the NVivo memo feature to also track my thought processes. To reduce the effect of biases during the coding and interpretation process, I enlisted the help of a peer debriefer (Cooper et al., 1998; Ezzy, 2002; Lincoln & Guba, 1985). A professor in the English Department who is knowledgeable about writing across the curriculum and has experience conducting ethnographies met with me to discuss my coding scheme.

Representativeness and triangulation also contributed to trustworthiness. The participants varied in their years of experience in the profession and in their specializations, giving me a good representation of faculty in each discipline. Triangulation came from having four faculty members' perspectives on the same student texts. In addition, the findings from the analyses of the transcripts were compared to the analyses of the assignment handouts to confirm or raise questions about the results.

I also paid attention to outliers and unexpected findings (Miles & Huberman, 1994). When some, but not all, participants in a discipline believed that a text characteristic (e.g., coherence) was needed in good writing, I searched the transcripts of the "non-believers" to figure out the reason for this difference. Unexpected findings were
documented and explored in terms of what they revealed about my underlying assumptions or beliefs about good writing. I found that writing and thinking about these little surprises helped me to consider rival explanations and alternative conclusions. As mentioned earlier, I asked follow-up questions about evidence and support because I considered that a possible explanation for differences across cases would be related to the use of evidence. I initially presumed that the professors’ answers would reveal differences in ways of knowing across the three disciplines. However, the participants did not discuss ways of knowing in relationship to the use of evidence. Upon further reflection, I started to believe that their immersion in the disciplinary community and ability to fluently incorporate evidence in their writing led them to deemphasize this aspect of writing. Overall, tracking my thinking throughout the interviewing and analysis processes aided my ability to examine the results from different perspectives.

Summary

To answer my research questions, I used a comparative cross-case research design with interviews as the primary method of collecting data. Three cases, Art, Biology, and Psychology, were investigated. Four faculty members from the discipline were subcases. Each of the twelve faculty members who participated met with me twice to discuss student texts and their conceptions of good writing. I analyzed the transcript data by creating codes, categories, and matrices to visually display the findings. I conducted within-case and cross-case analyses. To enhance the trustworthiness of my study, I
followed procedures recommended by Miles and Huberman (1994), Rubin and Rubin (2005), Guba and Lincoln (1982), and Lincoln and Guba (1985).
Chapter 4. Findings: Art, Biology, and Psychology

As I described in chapter 3, I interviewed 12 participants who read three student texts from their academic discipline and analyzed the transcripts. This chapter, devoted to findings, is divided into three main parts, one for each academic discipline (or case): Art, Biology, and Psychology. In each part, I present the findings for a single academic discipline. First, I describe the student texts supplied by the participants. Next, I present the Text Characteristics mentioned by 4 participants of the academic discipline, which suggest answers to my first and second research questions: How do UHM faculty members in Art, Biology, and Psychology describe good student writing in their academic discipline? What text characteristics of student writing in upper-division courses contribute to the faculty members’ determination that the writing is good student writing? Unless otherwise stated, the text characteristics were discussed by all 4 participants in a case.

Then, in the Sources of Beliefs About Writing section, I present findings that shed light on my third and fourth research questions: From the faculty members’ perspectives, how does their academic discipline shape their understanding of good student writing? Why do the faculty members select those characteristics? The findings that dealt with the participants’ understanding of good student writing in both their academic discipline and in other disciplines are described in the section entitled Perceptions of What Good Student Writing is in the Academy-at-large. The text characteristic codes, brief code descriptions, and a summary of the findings can be found in Appendix G.
Findings: Art

Descriptions of the Art Student Texts and Assignment Guidelines

The 4 Art participants read three student texts written by Art majors in three different 400-level Art courses. The texts, which the participants selected as examples of good student writing, represented three distinct genres: artist’s manifesto, essay, and interpretive study of an artwork. The assignment guidelines for the artist’s manifesto only specified a “composition” of two pages due on March 14. The student’s text was three-and-a-half pages and was titled “Composition” and the word “Sound” appeared in the top left corner between the professor’s name and the student’s name. The participant who selected the assignment and the other 3 participants all referred to the text as an artist’s manifesto.

The manifesto did not draw from any library or Internet sources and consisted entirely of the student writer’s beliefs and observations. The student wrote in the first person. The student began with this opening paragraph: “I deal with the impermanence of meaning. Meaning is constructed by institutions that wish to gather power. Meaning is defended by those who benefit from its existence. This is why music, and all forms of art, are historically stagnant” (Text A1, p. 1). The next paragraph continued, “At the core of every institution is something beautiful. There are people everywhere, some of them in school, some not, some pierced, some in suits, who truly want to experience something new and explore the human mind with nothing but exploration as a motive” (Text A1, p. 1).
Because the artist's manifesto is a genre unique to the Art field, Dave², the participant who selected the assignment, helped me to understand its function:

"Manifestos are usually the stuff of radical thought" (1: 8790-8882), and they are a means by which the artist conveys to the readers/viewers "what it is [that] motivates your compositional attitude and . . . understand where you stand as an artist" (1: 12800-12913). An excerpt from the student text expresses the "radical thought" of a manifesto:

There should be no rules, and there should not be a rule against rules. If I were to participate in politics I would run the country the way I compose music. I like to write constitutions, overthrow governments, enslave populations, and set fire to my own white house and get elected as president and shoot myself in the head while invading another country with fast food. (Text A1, p. 3)

In contrast, the second Art text was an essay that presented a balanced view of the issue of beauty in contemporary art and concluded with the student writer's beliefs. The four-and-a-half page essay supported points with library sources but did not include a bibliography. The directions on the written assignment handout were minimal. Seven possible essay topics were listed on the handout; the student writer chose number 6.

Topics: choose one [of these seven].
1. The most exciting and creative photographic work being done today is being done in the realm of advertising and fashion. Discuss.
2. The author is dead. Good riddance. Discuss. . . .
6. Beauty has no place in contemporary art. Discuss. . . . (Assignment Guidelines Text A2)

The only other statements on the handout were these: "Whichever topic you choose, feel free to agree or disagree. Use specific examples as appropriate, hopefully including some of the images that we discussed in class" (Assignment Guidelines Text A2).

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² Pseudonyms are used.
The student writer, writing in the first person, chose to disagree and modify the topic:

But despite many contemporary art pieces' unattractiveness, or even grotesqueness and perverseness, beauty is in the eye of the beholder, and as ugly as the subject matter of the art piece may be, I believe that one can still find some elements of beauty in the art piece itself. It is human nature to want to create objects that are beautiful. Though many contemporary artists may not admit it, even they are probably guilty of inadvertently trying to "beautify" their art. (Text A2, p. 4)

The student followed the assignment directions by discussing the artwork of eleven contemporary artists and citing two art critics. For example, the student wrote:

Though an art piece does not need to be grotesque in order to have a significant meaning behind it, if the artist is not yet well-known, it unfortunately would probably not receive as much attention as a controversial one that shocks and surprises the audience would. In an article entitled "Of Mother Nature and Marlboro Men: An Inquiry into the Cultural Meanings of Landscape Photography," Deborah Bright explains how the explicitly beautiful landscape images of photographer John Pfahl which depict nuclear power plants suggest a lack of any significant meaning. (Text A2, p. 3)

The third Art text was an interpretive study of a Chinese scroll painted in the 1300s. The three-page assignment guidelines named the genre of the assignment as an "interpretive study" (Assignment Guidelines Text A3). The students were instructed to "produce an interpretation of the painting which is grounded in the historical and cultural context of its production" (Assignment Guidelines Text A3). The guidelines specified a length of eight to ten pages. It stated that the grade would be based on the quality of the text's main claim, clarity of the argument, and use of evidence. In addition, a suggested organizational structure was given: a) main claim at the end of the introduction, b) visual analysis of the painting after the main claim, c) then several types of historical and cultural evidence, and d) a concluding paragraph in which the main claim was repeated
and loose ends tied up. Finally, the guidelines indicated that at least five reliable and authoritative sources should be included and that any bibliographic format could be used.

The student’s six-page text fell short of the eight-page minimum requirement, but it did follow the suggested structure and included eight library and Internet sources, listed in a bibliography. The student’s main claim appeared as the last sentence of the first paragraph of the student text:

*A Breath of Spring,* painted in 1360 by Zou Fulei, is a stunning handscroll showcasing his technical virtuosity in ink monochrome painting... His seemingly straightforward depiction of a plum branch gains deeper significance as the viewer understands that Zou was a scholar-painter during the Yuan Dynasty, using a calligraphic style of painting and including supplemental poetry in his work. Considering the historical context in which Zou lived and the particular painting style that he used, it becomes apparent that his choice of subject matter was very deliberate and carries references to his present stance regarding the Mongolian government, to traditions and better times of the past and to his longing for and confidence in the return of peace and stable rule in the future. (Text A3. p.1)

The second paragraph described in detail the scroll which was the focus of the interpretive study. Then the text moved into a discussion of the historical context and cultural interpretations of the objects in the scroll. For example, the student explored meanings associated with the plum branch depicted in the scroll:

Furthermore, the plum carries still more significance as an “old tree,” which refers to its old and gnarled appearance and to its perhaps fabled reputation of being able to live for over a thousand years (Barnhart 1972 37). Since the fourth century BCE, Chinese scholars have admired old trees as symbols of “integrity, dignity, and enduring strength oblivious to superficial standards of value,” and Yuan Dynasty scholars identified with and aspired to these traits (Barnhart 1972 10). (Text A3. p. 4)
The interpretive study's closing paragraph referred back to the main claim and noted that the scroll attested to the artist's talent as well as encouraged debate about the political situation at that time.

As a method of triangulation, I had collected the assignment guidelines and grading criteria to confirm, add, and explain the participants' descriptions of good writing. I had reasoned that the participants would inform students what text characteristics they valued and what characteristics were needed to earn a high grade. To the contrary, in Art only the guidelines for the interpretive study were sufficient for that purpose. The other two guidelines did not provide enough information.

The interpretive study guidelines were prescriptive regarding the structure and appropriate content. When the participants read the student's study of the Chinese scroll, they looked for and found a focal statement (main claim) and appropriate organization of content. They took note that the points were supported with source-based evidence, but they did not emphasize the reliability of the sources.

Text Characteristics: Art Participants

The Art participants highlighted a variety of text characteristics in response to my question: what makes this a good text? (See Table 4.1. Appendix G contains the full list of codes, descriptions, and results. Appendix H provides the text characteristics mentioned by individual participants.) The 4 Art participants noted seven characteristics in common that contributed to their determination that the student texts represented good writing (see Table 4.2). The characteristics they mentioned were in part dependent on the
Table 4.1. All Text Characteristics: Art Participants

<table>
<thead>
<tr>
<th>Text characteristic</th>
<th>Number of Art participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish a focal issue</td>
<td>4</td>
</tr>
<tr>
<td>2. Set and fulfill organizational expectations</td>
<td>4</td>
</tr>
<tr>
<td>3. Create coherence</td>
<td>3</td>
</tr>
<tr>
<td>4. Define terms</td>
<td>1</td>
</tr>
<tr>
<td>5. Provide evidence and explanations</td>
<td>4</td>
</tr>
<tr>
<td>6. Contextualize the writer’s ideas, focal issue, or results</td>
<td>0</td>
</tr>
<tr>
<td>7. Hook the reader</td>
<td>2</td>
</tr>
<tr>
<td>8. Make inferences from data</td>
<td>0</td>
</tr>
<tr>
<td>9. Justify significance</td>
<td>2</td>
</tr>
<tr>
<td>10. Contain complex content</td>
<td>4</td>
</tr>
<tr>
<td>11. Tell an “academic story”</td>
<td>0</td>
</tr>
<tr>
<td>12. Make a unique contribution</td>
<td>0</td>
</tr>
<tr>
<td>13. Voice student’s opinion/stance</td>
<td>4</td>
</tr>
<tr>
<td>14. Avoid plagiarizing</td>
<td>2</td>
</tr>
<tr>
<td>15. Choose reliable and valid sources</td>
<td>2</td>
</tr>
<tr>
<td>16. Informs reader through title</td>
<td>1</td>
</tr>
<tr>
<td>17. Summarize text in an abstract</td>
<td>0</td>
</tr>
<tr>
<td>18. Describe methods in methods section</td>
<td>0</td>
</tr>
<tr>
<td>19. Present results in results section</td>
<td>0</td>
</tr>
<tr>
<td>20. Incorporate data displays</td>
<td>0</td>
</tr>
<tr>
<td>21. Conclude effectively</td>
<td>1</td>
</tr>
<tr>
<td>22. Avoid wordiness</td>
<td>3</td>
</tr>
<tr>
<td>23. Employ jargon or technical terms</td>
<td>2 (negative quality)</td>
</tr>
<tr>
<td>24. Include poetic phrases and/or rhythm</td>
<td>4</td>
</tr>
<tr>
<td>25. Set the tone</td>
<td>3</td>
</tr>
<tr>
<td>26. Use unambiguous sentences</td>
<td>3</td>
</tr>
<tr>
<td>27. Choose precise words</td>
<td>2</td>
</tr>
<tr>
<td>28. Follow citation rules</td>
<td>1</td>
</tr>
<tr>
<td>29. Follow grammar and mechanics rules</td>
<td>3</td>
</tr>
<tr>
<td>30. Interest the reader</td>
<td>4</td>
</tr>
<tr>
<td>31. Communicate to the average reader</td>
<td>1</td>
</tr>
<tr>
<td>32. Achieve publication quality</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 4.2. Text Characteristics Discussed by 4 Art Participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Text Characteristic</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Artist's Manifesto</td>
</tr>
<tr>
<td>Structure</td>
<td>Established a focal issue</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Set and fulfilled organizational expectations</td>
<td>3</td>
</tr>
<tr>
<td>Development of</td>
<td>Provided evidence and explanations</td>
<td>3</td>
</tr>
<tr>
<td>ideas</td>
<td>Contained complex content</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Voiced student's stance/opinion</td>
<td>3</td>
</tr>
<tr>
<td>Language and</td>
<td>Included poetic phrases and/or rhythm</td>
<td>4</td>
</tr>
<tr>
<td>style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Interested the reader</td>
<td>3</td>
</tr>
</tbody>
</table>

Not all participants mentioned the same characteristic when reading a text (see Table 4.2).

**Established a focal issue.** The Art participants concentrated on the opening paragraphs of the three texts to learn the focal issue of the text and how the writer delineated the scope of the issue. Three participants identified the writer's focal issue in the interpretative study of the Chinese scroll from this thesis sentence:

> Considering the historical context in which Zou lived and the particular painting style that he used, it becomes apparent that his choice of subject matter was very deliberate and carries references to his present stance regarding the Mongolian government, to traditions and better times of the past and to his longing for and confidence in the return of peace and stable rule in the future. (Text A3, p. 1)
In reference to that sentence, the Art participants stated:

I liked the way the person who writes that defines what they are going to do in the first paragraph. . . . That's good writing. I think that the essence of what they are doing should be stated right at the beginning. (Joe, 1: 196-1679)  

It opens with the basic argument. It's set up nicely. The idea that this painting contains references that go beyond the specific image, has to do with the broader context, and the attitudes of the artist. (Mark, 1: 10929-11263)  

The paper has a clear main point, which appears at the end of the first paragraph. Which is where you'd expect to find it. Lines eight to eleven. Last four lines of the first paragraph. (Tracy, 1: 4373-4547)  

While the interpretive study text had a single, clear statement of focus, the essay on beauty in art did not provide a thesis statement in the opening paragraph. Instead, the opening paragraph focused the reader's attention on the issue of beauty in art by stating a traditional and contemporary viewpoint. None of the participants found the lack of a thesis statement problematic and commented on the first paragraph:

It has a very clear introduction, which, while it doesn't provide us with the author's own opinion on the subject, it does give us a very clear sense of what's at stake. "But what exactly is beauty, and is it dead as far as contemporary art is concerned?" So there's a question or a problem that starts us out, rather than a point or an assertion. . . . That works for this genre. (Tracy, 1: 24796-25584)  

[The student wrote,] "Traditionally, art without beauty would be seen as a contradiction in terms. As odd as it may sound, calling an art piece beautiful nowadays . . . may not be taken as a complement." That's the premise for everything else she talks about. (Dave, 1: 25868-26156)  

The participants were satisfied that the essay delineated the focal issue in the opening section through a series of statements and a question.

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3 Quotations are referenced as follows: 1=first interview, 2=second interview: character range in the transcript, e.g., 10100-10500. My questions and comments as the interviewer are in italics and preceded by "Interviewer."
The importance of the student writer opening with statements that delineate the focus of the text was evident in 3 participants’ reactions to the perceived lack of a focal issue in the artist’s manifesto. Mark, Tracy, and Joe were not convinced the manifesto had a focal issue. The piece was titled “Sound,” which led Joe to expect that would be discussed in the opening paragraphs.

I’m going, “What? Sound?” The first page has nothing about sound. . . . I think it was the third page before I realized that this all has to do about music, or something to do with music. . . . I’ve [read] more than two pages out of a slightly more than three page [paper], and I haven’t gotten to what this is all about. (1: 10714-11356)

Mark stated: “I’m not really quite sure . . . what it was really about, especially if it was supposed to be about sound” (1: 23645-23763). Tracy had this comment: “I don’t know what this piece is supposed to be doing” (1: 45687-45741). On the other hand, Dave believed a focal issue was provided. He felt that the manifesto started with the focal issue: “He opens things up by talking about impermanence of meaning” (1: 16940-16999), which according to Dave was an overarching idea woven throughout the manifesto. That the text was an artist’s manifesto was not a factor for the participants. Regardless of genre, they desired texts in which the writer set content boundaries in the introductory section.

Set and fulfilled organizational expectations. The participants discussed the overall organization or structure of the texts that they read. Each text had a different structure but that was a non-issue because the participants did not have a rigid outline that they applied to the student texts. Instead, they evaluated the overall structure on a text-by-text basis. For them, an appropriate organizational structure was dependent upon the focal
statement(s) and their notion of logical connection and sequence. With the essay on
beauty in art and the interpretive study, the participants agreed on the established focal
issue and the four of them applied their understanding of logic to determine whether the
text was organized. To do so, they judged whether the sections of the text were directly
related to the focal statement(s). The essay and interpretive study were considered
logically organized because the student writers created an expectation through the focal
statement(s) and then fulfilled it by including content that directly related to that
statement(s). For example:

Succinctly stating what they are doing,. . . deeply describing, and then concluding
it. It was very organized. . . . I think they provide a structure, a framework in
which to work. There’s a logic to it. It flows through just sort of logically. (Joe: 2,
424-1218)

Everything else that happens after [the first paragraph] is about the question of
beauty. . . . How beauty used to be more a prerequisite and now it’s almost a
negative because things have turned around to social commentary and activism. . .
. She talks about what people think, what artists have done, the controversy from
both points of view, and then she says what she thinks. That’s just logical. A B C.
Makes perfect sense to me. (Dave, 1: 25580-26688)

[The thesis statement of the interpretive study] is a kind of statement that I tell
students that if they can produce something like this, it will basically write the
paper for you because the structure of the paper is kind of inherently in that point
statement. It’s not necessary that that be the case, but this is one of those points
that do a lot of the work for you. As far as the structure of the paper is concerned,
it moves from concrete to abstract. . . . She starts with a description. . . . followed
by some background on the artist, followed by some background on artists of the
period. There’s a logical progression of what I would consider the level of
evidence that’s being deployed. (Tracy, 1: 7126-10153)

You have to start it off well, get the logic started. Start the process moving so that
everything that follows, follows from something. So if you have a question,
premise, or problem, then what follows somehow relates back to that. Answers
the initial question, or furthers the basic argument that is signaled at the
beginning. (Mark, 2: 1458-1788)
Mark and Joe commented negatively about the organization of the artist’s manifesto.

They were unable to discern an overall structure that was sequential or logical.

Didn’t really seem to develop in any kind of logical manner that I could follow easily. Maybe if I went back and read it once or twice more I could get the structure a little better, but I don’t suspect that there is all that much structure. (Mark, 1: 24092-24334)

I was most amazed when I get to the end of it and I see that this is what this person is doing. Maybe this should have been at the beginning. Or begin with some of this idea and use the rest of this to support your premise or what this is all about. (Joe, 1: 122173-12639)

Tracy hesitated to judge the artist’s manifesto. She did not want to speak negatively because she had recently learned of the genre:

I’m reluctant to get too into this piece from a professorial point of view because the truth is I don’t know how art is taught. I’ve never taken an art course. I’ve sort of gathered things from being around here . . . but the teaching of studio art is not my field. (1: 42304-42586)

I’m reluctant to be too picky about this piece because I’m aware of the limitations of my own knowledge with respect to this [genre]. (1: 51801-51926)

Dave, the participant who selected the text for this study, was the sole participant who believed the artist’s manifesto had an established focal issue and was logically organized:

It’s well organized. It reads sequentially. Not like this paragraph should have been up first and that kind of thing. **Interviewer: How would you describe the organization?** Logical. A B C D. Starts out with a big statement. “I deal with the impermanence of meaning.” And he goes on into more details: institutions, beautiful, balance is beautiful. (1: 15422-15763)

The determination of whether a text had a focal issue was partly dependent on whether the text was logically organized and vice versa. Hypothetically, a text could have a clear focal statement and lack logical organization. However, the lack of logical organization may cause doubt regarding the existence of the focal statement. This is seen
in the case of the artist's manifesto. Dave was able to discern both a focal issue and logical organization. The other 3 Art participants were unable to locate a focal statement in part because they were unable to recognize a logical structure.

**Provided evidence and explanation.** The Art participants expected that good student writing would support and explain ideas using evidence as opposed to writing that is only a listing of ideas. Scattered throughout his discussions of the student texts, Dave mentioned that the texts had detailed examples, library sources, and that the interpretive study, in particular, was well researched. The other Art participants also discussed whether the student writer provided an adequate amount of evidence:

You're speaking to someone who doesn't know about this artist, and I don't think I've seen this painting. I don't really know about the situation very much. Conceivably this could be very wrong, but [it] seems like a persuasive argument. . . Each point seems reasonable enough, except maybe the color which I mentioned before. But even that was backed up by a reputable authority. And then the other points seem reasonable points. And it's the accumulation of points that added strength. (Mark, 1: 21395-21945)

I think it's the number of ideas that they're presenting here. I think the student had an idea in mind of what they wanted to say ahead of time. It doesn't really show a lot of what I would say, divergent research, or something like that. . . I think they're looking at sources that would support their opinion rather than you know going to others. (Joe, 1: 16425-16798)

The proof is arrived at by a kind of matching between external sources and her observation of the painting itself. There's a kind of balancing act that is going on here. . . . And it is a balance between sources: quoting others and using her own observations. (Tracy, 1: 18351-19904)

The participants found the essay on beauty in art and the interpretive study of the Chinese scroll to contain sufficient evidence and explanation of that evidence. In both, the student writers cited library and Internet sources. However, the artist's manifesto
posed problems for Tracy, Mark, and Joe. Tracy pointed out specific statements that needed explanation or supporting evidence. For example:

There are sweeping assertions. Line 27, "All forms of collective creative institutions exist because of the assumption that intelligence, freedom, and inventiveness can be bought." That’s an immense assumption about the nature of art school . . . There is a certain amount of truth to it. And yet it’s such a sweeping statement that it needs a whole complex of argument behind it for it to be convincing in any way . . . I would have liked more explanation of the implications of the statements. They’re just made and thrown out there. (1: 44472-45403)

Mark lamented that the manifesto “covers a lot of bases in a very short span of time” without explanation or development (1: 24700-24751). The manifesto read as if it were a list of ideas without support. Joe came to a similar conclusion and suggested the student develop the ideas by explaining what the student wanted to say:

I would like to see the student develop it. That’s what I would like to see. I would like to push the student to develop this farther, develop these ideas and really think about what they are really trying to say . . . There are too many different ideas that are being presented. (1: 14869-15509)

The Art participants wanted to see writing in which the student writer had given adequate evidence and details to each idea so that the participant felt comfortable believing the writer’s point. When the writer of the artist’s manifesto moved quickly through ideas, the participants had a negative reaction. They were more positive toward the essay and interpretive study because the evidence led the participants to accept the writers’ conclusions as reasonable. Whether the participant agreed with the writer was irrelevant according to the participants.

*contained complex content.* The Art participants paid attention to the quality of the content and praised texts that showed, in their estimation, complex content that
suggested the student writer took time to carefully consider the focal issue. Although each participant pointed to different sections of the student texts for different reasons, I grouped these comments together because they were based on the participants’ beliefs that the content was of higher quality than was seen in typical art majors’ texts. The participant’s individual preferences for a particular type of complexity appear in their comments. Tracy stated several times in her interviews that students need to realize nuances exist, and issues are not black and white. When she saw signs of nuanced statements, she praised them. Here Tracy discussed the essay on beauty in art.

After all this discussion about the role of ugliness and how powerful it is and how it’s seen as a positive thing, then the author . . . says, well actually there is some beauty in these pieces. [Beauty] is not irrelevant. It’s an example of sophisticated thinking because the author is showing that the claim and the reality are not the same thing. That the claims that are made about modern art—that beauty is not important—don’t preclude beauty actually appearing in contemporary art. (1: 32149-32679)

Mark pointed out instances where the student writer challenged ideas that were normally unquestioned.

She’s going against the grain of what is the current thinking. Some might even say this is backward thinking, that we’re past this idea [that art should be beautiful] and we’ve gone beyond it. But she’s taken it a step beyond that and [is] turning . . . current thinking on its head. (1: 4370-4675)

Dave commented in his interviews that students have not been taught how to think because society and education encourage conformity. When the student texts exhibited to him that the student was generating insightful ideas, he praised the texts.

[The student wrote,] “I deal with the impermanence of meaning.” Think about how complex a thought that is for a 20-year-old. “I deal with the impermanence of meaning. Meaning is constructed by institutions that wish to gather power.” That’s also perceptive for a 20-year-old. “Meaning is defended by those who benefit from its existence. This is why music and all forms of art are historically
stagnant.” That’s smart. He’s a young kid. I would expect that from a much more mature and worldly person. (Dave, I: 9231-9713)

Joe did not comment that the student texts showed evidence of insightful or nuanced thinking. However, he did note where the student revealed deep content knowledge, beyond a superficial understanding.

"I think that the way the student has gone into some of the more philosophical aspects of why this artist painted this at that particular time of his life, what it was saying, the analysis of what it’s saying about the government and the system of government at that time. It’s nice to see students thinking about that... I find that our art students now will do something that is just so obvious. And it’s like oh my gosh... I’m glad to see that students are realizing that you don’t have to be so explicit... So the student is getting at understanding [the scroll] very well within the context of Chinese painting. (Joe, I: 2956-4399)

Three of the participants felt the essay on beauty in art and the interpretive study of the Chinese scroll included high-quality content. Only Dave believed the artist’s manifesto exhibited high-quality content throughout the essay. Tracy found isolated examples of complex content in the manifesto but also expressed doubt about its complexity because she was unsure whether the examples reflected “actual deep understanding” (I: 50975-51012). Joe stated that he found the manifesto “trite” because the writer was “ranting and raving” (2: 1334-1561).

**Voiced student writer’s stance/opinion.** The Art participants noted sections of the essay on beauty in art and the artist’s manifesto where the student writer voiced his or her opinion or stand on the focal issue. Joe noted the connection between a goal of studio art and the art professors who appreciated students who voiced their opinions:

A lot of professors in the art department like to see this [artist’s manifesto] because it’s just pouring out personal emotions or opinions much like they try to encourage students to do in their own creative work. (Joe, I: 9231-9424)
Mark commented after reading the artist's manifesto, "It comes off as a kind of a rant. That's fine. Students should be encouraged to rant" (1: 24335-24420).

Tracy and Dave were pleased that the student who wrote the essay on beauty in art took a firm position in the last paragraph. If the student writer did not, they would have thought less of the essay:

The author does not fail to take a stand on the question that he has raised. On the last page, you get the author's opinion. I think if we hadn't gotten it, then this essay would feel kind of weasely. Where it's like, where does this leave us? All these questions have been considered but there's no final pay off. (Tracy, 1: 32680-33025)

Content-wise, that's what impressed me about that paper. The student took a stand. Got a brain. Thinking. Thinking for themselves. Where do I stand? Well I stand here damn it. They drew a very specific line and said, "This is what I think." (Dave, 2: 17765-18190)

Mark noted that a positive about the essay on beauty in art was the writer's inclusion of her own experiences as an artist.

It may even reflect her resentment of comments about work she made herself. I don't know what her work is like so I have no idea. She even does talk a little bit about...how even when the assignment is to make something ugly, it ends up being more beautiful than it's supposed to be. It may be in her more deliberate efforts, not specifically addressing that challenge, but maybe in her own work she tends in that direction and has been shot down for that in class and this is her response to that. (1: 17066-17621)

The issue of voicing a stance or opinion was not discussed by Dave, Joe, or Mark in relation to the interpretive study of the Chinese scroll. Only Tracy, who selected the text for the study, noted that students should form an opinion about the artwork that they examine.

*Included poetic phrases and/or rhythm.* The Art participants paid attention to the language and style of the student texts. They appreciated poetic phrases, imagery, and
texts with rhythm. Four participants singled out the artist's manifesto from the three texts and commented positively on its aesthetic quality.

"Pre-conception, chaos, mood, structure, emotion, dynamics, inorganic vs. organic, traditions, hi-fi, lo-fi." It's not a sentence. But poetically, it's very nice in this personal manifesto he's writing. . . . Interviewer: Why does it work? How? Rhythmically. Again, we're back to poetry now. This is almost a combination of prose and poetry. (Dave, 1: 6934-7303)

There are some ideas that I thought were just wonderful and that hit me and I thought, wow, that's a great image. Like line 12, "Balance is beautiful—but what is involved in that balance is limitless. You can balance two girls on a seesaw, or a refrigerator and 20,000 bags of leaves." That's a wonderful image about the possibility of equivalency and balance. (Tracy, 1: 38928-39288)

Mark and Joe also pointed out the poetic qualities of the essay and the interpretive study.

There were occasionally passages where it was actually quite nice in a poetic kind of way, "Beauty can be equated to a whisper into the ear of the viewer, while ugliness can be seen as a yell." That's nice language that goes beyond straightforward prose in most college papers. (Mark, 1: 979-1256)

I think that [the interpretive study] is quite beautifully written. What it is about seemed appropriate to the subject matter. A kind of poetry. (Joe, 2: 34028-34166)

The poetic quality of the artist's manifesto appeared to be its strength, but for Tracy, Mark, and Joe, written texts require focus, organization, evidence, and explanation of evidence (as explained above) to be considered good student writing. For these three participants, poetic quality was an enhancement. According to Mark, it makes the writing more pleasurable to read (2: 25693-26187). By itself, however, poetic quality did not lead these three participants to view the artist's manifesto as good writing.

Interested the reader. The Art participants preferred texts that engaged their personal interest. Interest could be piqued by a text that added to their own knowledge, reminded them of past issues in the art world, caused them to think, or matched a
personal preference. Whether the participant found the text interesting was related to their previous experience and personal interests. For example, when he read the essay on beauty in art, Dave recalled the controversy over art funding:

The content was actually interesting to me. Some of the things that she was saying. She told me things I knew but had forgotten. Like I forgot it was Senator Demato that made the big stink about censoring art that was paid for by taxpayer money. (1: 28452-28697)

The artist manifesto interested 3 Art participants because of its chaotic, ranting qualities. Joe stated that “it appeals to me because it is a kind of anarchy, has a certain anarchy quality that I like” (1: 13003-13093). Mark agreed: “I think it’s important to allow students to let it all hang out. I think it’s interesting for instructors to hear” (1: 23324-26441). The manifesto also included statements that caused the participants to think. Mark pointed out this particular sentence: “‘You can balance two girls on a seesaw, or a refrigerator and 20,000 bags of leaves’ . . . That’s all kind of nice and thought-provoking . . . [and] made me sort of scratch my head a little bit” (1: 25854-26255).

Participants had opposite reactions to the same texts or text segments. For example, Dave found the artist’s manifesto to address issues that interested him while Tracy did not. When she read the artist’s manifesto, Tracy noted her lack of interest: “I actually have a rather negative reaction to it. . . . It’s not a question that I’m mentally interested in myself” (1: 43778-44205). Dave and Tracy also differed on the interpretive study. Dave was not interested, although he did believe it represented good writing: “We have the personal thing that reading through this bored me. . . . I have nothing against art historians, but they are known for monotone kind of lectures and this read like a lecture”
Tracy, who selected the text for the study, believed the study of the Chinese scroll was interesting.

To briefly recap, the Art participants read three student texts that represented different academic genres in the Art. The participants identified seven characteristics that contributed to the quality of the texts: established a focal issue, set and fulfilled organizational expectations, provided evidence and explanations, contained complex content, voiced student’s stance/opinion, included poetic phrases and/or rhythm, and interested the reader.

**Sources of Beliefs About Writing: Art Participants**

In addition to describing the text characteristics that were found in good student writing, the participants explained the sources of their beliefs about writing. These comments provided information pertaining to two of my research questions: From the faculty members’ perspectives, how does their academic discipline shape their understanding of good student writing? How do they justify their rationale for those characteristics? I investigated these questions because cultural-historical theory posits that meaning and understanding emerge through social interaction and derive from a community’s cultural past as well as an individual person’s past and present. I was interested in where the participants in my study traced the sources of their beliefs about good writing. The Art participants believed their criteria for good writing were influenced by the following:

- adherence to traditions and practices of the art community,
- philosophy that college should teach widely-applicable writing skills, and
c) observations of writing-thinking and reading-writing connections.

Adherence to traditions and practices of the art community. The Art participants felt that members of the art community esteemed those who showed individuality and voiced opinions. The text characteristics of complex content and student opinion/stance were primarily from the participant's sense of the art community's values. Dave stated that "it's part of the art thing. You reward bravery... I want to see people assert themselves, and take a stand, and make a statement. It's not about sitting in a corner being quiet if you're an artist" (2: 16267-17023). They looked in the student texts for signs that the student "shows some willingness to think about things for themselves, not necessarily agreeing with the perceived knowledge that is available" (Mark, 2: 16129-16261). When discussing the essay on beauty in art, Joe drew an example from a job interview talk given by an applicant because it went against current thinking in the field.

I found it very refreshing to have one of our applicants in this department talk about beauty because that is something that artists don't do... To use the word is even, aahhh. To have someone come and actually give a lecture on beauty and art. This is very refreshing because it isn't done in an academic situation. So in that sense, I think that the student needed to concentrate on beauty rather than on non-beauty. (Joe, 1: 20562-201003)

Tracy added that she highlighted complex content and stance/opinion because the "ultimate goals of art history are basically interpretive... [and] on a certain level, there's no proof to be had... [It is a] series of increasingly educated interpretive guesses" (1: 20158-20401) in which the writer's "guesses" are based on concrete observations of the object and research. To aid students, she stated, "I tell them, 'Look, your gut reactions are important. That's where some of your best observations will come from'" (1: 22029-22140). Tracy helped her students learn how to carefully examine art objects, form an
opinion, and then examine that opinion. By doing so, the students learn to voice their opinion about artwork and to generate complex content through careful evaluation of that opinion.

In their professional lives as professors of Art, the participants found that writing played (and continues to play) an important role. Being able to fluently state a position aided them in justifying curriculum changes, getting external funding, preparing for course lectures, conveying theoretical concepts underlying artwork, and publishing research.

When you want a grant, when you want a show, you better be able to articulate . . . what you're throwing out is all about . . . You've always got to get back to communicating with the academically minded. (Dave, 2: 34980-35264)

If you send out a publication and there are a lot of mistakes in it, it reflects on the quality of this institution . . . Reputation. You have to establish your credibility . . . My first big exhibition I did here, I made sure that I pulled out all the stops. And people were just blown away . . . And as a consequence, when I went out and asked someone for some money. Here. I could get it because they were willing to invest in me and this institution because they knew we would do a good job. (Joe, 2: 9113-10665)

Joe also described an incident involving work he did for a local exhibit.

[Students] need to start realizing on their own that they have to constantly rewrite these things and look at them. So I go, “Don’t write this the day before it’s due . . . Tonight start working on this and get it to where you think it’s as good as you possibly can, and then set it aside. And after two or three nights, look at it again.” . . . When I was doing this [job] for the [local gallery] for the exhibit that opened last Friday . . . I decided I’d better look at [my entrance text and exhibit labels] just one more time. I thought they were perfect because I had gone through revisions of them. And I found, this has got to be changed and this has got to be changed. And there were verb agreement errors. Things that weren’t clear. Things I thought were clear on Sunday, they weren’t clear any longer. Because I was away from it, I had a chance to forget about it and then come back to it fresh. (Joe, 2: 14475-15562)
Thus Joe requires his students to submit multiple drafts (up to six drafts for short assignments) to check that students are honing organization, focal statements, and editing for grammar errors.

*Philosophy that college should teach widely-applicable writing skills.* The Art participants held a personal philosophy that college should teach students writing skills that are important to employers in all career areas. They brought up general career-related writing concerns in relation to different text characteristics: established a focal issue, set and fulfilled organizational expectations, contained complex content, avoided wordiness, used unambiguous sentences, followed grammar rules. They also described classroom practices that grew out of their experiences with writing.

Joe stated, “I think that writing is extremely important for anyone who wants to get ahead in the world to learn. This is why I like to see our art students writing” (1: 22653-22806). Later in the interview, Joe added:

> The main reason I’m retiring is so that I can work on everything else . . . and a good portion of it will involve writing. And this is why I think that students need to realize that writing is absolutely essential to their career. (1: 30120-30379)

Dave stated that “writing will bug you all your life. You’re always going to have to write. No matter what you do” (2: 24415-24514). Thus Dave felt obligated to help students become better writers:

> As a teacher, you don’t just do what’s important to you . . . you got to be trying to think what’s best for the students and I really do feel they will benefit by learning these kinds of things [organization, communicating an idea]. It’s as simple as that. To me, it’s all about the student. My number one concern. (2: 31534-31827)

Mark and Tracy also commented that writing is a necessary career skill for all college graduates.
I think basically anyone going out into the world with a college degree, whether working in the academic sphere or the art world in any way or some totally different area, law or business world or wherever, they need to be able to [write]. (Mark, 2: 4961-5218)

The ability to grasp, understand, and articulate complex points is one of those things that the student will take with them, which will be useful no matter what they decide to do. So as a teacher, when I think about it, what we train our students to do, really, [is] to think clearly, to write clearly, to say what they mean. . . . If they can take these skills away with them, they’ll be useful wherever they go. So it’s one of those things, one of the kind of skills that I think that is important to a good undergraduate education and that those are the kind of skills that will be of use to students anywhere. I think that’s pretty important. (Tracy, 1: 33425-34127)

The participants provided examples of writing during their lives that influenced how they approached writing with their students. Dave recalled how word processing helped him to organize his ideas better. In turn, he takes class time to talk to students about how to organize ideas and advantageously use word processing.

So right at the beginning of the class, I’ll just spend, probably not long, 15 or 20 minutes, just talking about organizing and structure. I mention to them how much my writing life changed when I no longer could hand my writing in pidgin scratching to the secretary and pick them up a day later. And the way my own mind works is—I could either be schizophrenic or a divergent thinker, it depends how you look at it. A lot of things come in and out, I get ahead of myself, and I write the same way. And when I got a word processor . . . it became very clear to me that oh, this paragraph should be up here and this sentence—my writing was fine, but if I totally restructured the page or two, it would make a whole lot more sense. So I do tell [students] a little about how to, you know, premise, explain, and close. Just like you would in a music composition. (1: 24099-24030)

Tracy remembered receiving little systematic writing instruction. However, when she was a teaching assistant, she learned a method for teaching writing and talking about writing that she continued to use.
In terms of language to talk about what makes writing good, I don't think I had a model for that until the Little Red Schoolhouse.\(^4\) I felt like I knew [good writing] when I saw it. . . . That's why so many of my models come from that. . . . The fact that [the Little Red Schoolhouse method] did prove to be pretty effective when you are putting it in use, is why I continue to base my teaching on that. (2: 20668-21276)

For her current students, Tracy created four short writing workshops with detailed handouts. The handouts address topics such as writing for the reader, writing for research and how to not plagiarize, how to make a point, and the structure of an argument. When I mentioned that not everyone is able to talk about writing as fluently as she did, Tracy responded: "Which I think is really understandable given the way writing is often taught. But unfortunately it's really unfair to the students. You have to be able to tell them what you want" (2: 41063-41242).

Observations of writing-thinking and reading-writing connections. Three Art participants believed that writing promotes better thinking and understanding. The text characteristics the participants felt were improved upon through writing were primarily focus, evidence, complex content, and student opinion/stance. Here Mark explained that writing can help clarify thinking:

I think that may be one of the problems: people do not think clearly about what they are doing and never are forced to think about it hard enough in order to clarify their thinking. Writing in this kind of way helps clarify thinking. Even if you don't end up with a real good piece of writing, just the act of doing it forces you to think about things, makes you realize sometimes, hey, there's no real logical connection between this and this. Or I was all wrong. Or I thought this made sense. This needs to be looked at again. (2: 5271-5840)

Dave, who required students to explain their art projects in writing stated, "People will change their whole project based on having to think about it and write about it. . . .

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\(^4\) The Little Red Schoolhouse is a method of teaching academic and professional writing. It focuses on writing process, understanding audience needs, and producing clear, effective prose.
It's just human nature" (2: 32323-32467). From the teacher's view, Tracy noted that
“teaching writing also involves teaching a sort of thought process. When you teach
students to construct an argument, you're teaching them techniques for thinking through
as well as writing through” (2: 1263-1461).

The 4 Art participants attributed their writing skills, in part, to reading throughout
their lives. Dave stated, “I think also you become a good writer by reading a lot. What it
really comes down to is reading when you're a kid. That may be the essence of all this”
(2: 25109-25260). The participants saw a direct connection between reading and writing
in terms of setting and fulfilling organizational expectations, including poetic phrases
and/or rhythm, choosing precise words, and following grammar rules. Tracy noted that
her writing teachers were “unscientific” because they did not teach parts of speech and
she learned to write by reading (2: 19030-19268). She felt that her students’ minimal
reading experiences affected their writing skills: “They just don’t have the vocabulary or
they don’t have the ability to puzzle out what a word means in context.” This, for
example, resulted in students choosing wrong words such as “literary” instead of “literal”
(Tracy, 2: 3852-4023). Mark believed that writing problems were linked to the amount of
reading and writing students had done:

I think a lot of the problems that students have with writing has to deal with the
fact that a) they don’t read and b) they don’t write. So the things that sound
obviously wrong to me or jarring, don’t jar them because they don’t have the
reserve bank built up in themselves of good writing that sets off the alarm bells
when they say something. I mean I’m not big on rules. I’ve never been very good
at it. But I think I’ve read enough in life and paid attention to what I was reading
and writing that things just sound wrong. (2: 30813-31381)
Joe extended his discussion of the reading-writing correlation to professors: "When you have a professor saying that they don’t like to read and they are teaching writing intensive, to me there’s a question about that. . . . I question the validity of allowing professors to teach writing intensive if they don’t like to read at all" (1: 25825-26136). In his opinion, Joe felt such professors should not teach writing-intensive classes.

The participants developed their understanding of good writing, in part, by modeling or imitating texts they read. Joe and Mark recounted how they paid attention to the language, style, and structure of texts and then applied what they liked when composing, teaching, and evaluating student writing.

I notice certain things about what I’m reading, “Oh that’s an interesting way of doing things” and “That’s kind of nice.” A lot of it is unconscious but some of it is conscious enough that I might even find things to make use of myself, or things that I might hold up as a good example in class or a way of doing things or a way of not doing things. (Mark, 2: 32159-32964)

I love to read good literature. I like to read it in its unabridged version because I want to see its complexities and the subtleties that the author is putting in there. . . . I can see the richness of how the author was putting words together, the pace, the feeling. . . . I think that our students need to be more aware that the use of language, the use of sounds, both in written form and in speaking can be very exciting. It's an art. (Joe, 2: 16597-18284)

Art Participants’ Perceptions of What Good Student Writing is in the Academy-at-large

I asked the participants whether they believed that the characteristics they described would be different from characteristics valued by professors in other disciplines. The Art participants varied in their responses. Dave believed that differences exist across fields, but the personal characteristics of the professor play an important role in determining how the professor defines good writing.
I think definitely different fields have absolutely different criteria. I think you’re going to discover that. I think the question will be, [these three student texts are] within one field, and it’s not just the writing criteria and the style and quality, it’s the personal point of view of the reader. This [Dave points to the artist’s manifesto] is me. This is the kind of kid I like. This [he points to the interpretive study] is what I used to hate in college. And nothing—you know, not a problem with it. (1: 45130-45621)

In the second interview, Dave elaborated:

I don’t think that separating or identifying myself as an Art professor versus an English professor versus a Dance professor . . . is as important or significant as being a whomever-I-am-personally professor. There may or may not be stereotypes of the artist, or the art stereotypes of the artists may or may not be consistent, realistic. But there are reasons I am an artist and they have to do with a lot personality quirks and other things. I think that’s what the difference is. There may be another kind of artist sitting right next to me and I would be different in my criteria for writing from this person, but very similar to someone in the Biology department. I sort of assume what you’re getting at. But I’m just trying to say, don’t say Art professor. Say, how does being who I am, my personality essentially, my value system and all of that. I think there is a difference from one professor to another. (Dave, 2: 32688-33603)

Mark felt that the characteristics of good writing should be similar across the curriculum but was uncertain: “It should be. I don’t know. In some spheres it must be. I would hope that it is. I don’t know if it’s true or not” (2: 29475-29589). Joe held a similar view and explained why he was uncertain:

Possibly. Yeah. Pretty sure. . . . It might be totally different. But I don’t know. It’s a hard thing for me to say because I’ve really been so busy in my 29 years here at the university keeping the gallery going, I don’t interact with people outside the department . . . I never talked to anyone, I don’t think, about writing. Other than editors. And when I’m team teaching . . . we talk about writing. But I don’t think I even discuss it with people from my own department. (2: 28545-29529)

Tracy felt that academic fields shared a general epistemological framework and a desire for “clarity and fluency” in texts, but that the written expression of those characteristics varied across discipline:
So like the scientist has to be able to evaluate the quality of his or her data. . . . Similarly, the social scientist or the art historian or the literary scholar is doing very much the same thing. How do we know what we know. And similarly, clarity and fluency I think are required for all the disciplines. Although the standards of clarity and fluency are different. Right. So in the hard sciences . . . and in medicine and in experimental sciences, there's a particular form for conveying information that is different from the form that we would use in the humanities. . . . For example, the general acceptability of the passive voice in scientific reporting. The passive voice has the effect of taking the scientist or scholar out of the picture entirely. And in the humanities in particular, but also in the social sciences like anthropology and so on, that's not acceptable because whenever you're studying human beings the fact of the investigator also being a human being is considered relevant. (2: 38893-40065)

**Summary and Description of Good Senior-level Writing: Art**

The Art participants noted text characteristics associated with structure, development of ideas, language and style, and interest to the reader. They wanted to see a focal issue that was contestable, logical organization, and evidence and explanation in the three different genres they read. Taken together, these added up to a text communicating a message to the participant.

If we're talking about any kind of academic writing or expository writing, it needs to . . . preferably address a particular question and then everything else kind of falls into place behind that and then it's interesting to read. Otherwise it's a kind of collection of observations or descriptions or I don't know what else. But it just doesn't add up to anything. (Mark, 2: 2855-3313)

I always go back to what is the big idea, what am I trying to express. What do the people need to get out of this. What is the message that needs to be conveyed. When I go back to helping students with writing, that's what I try to do. (Joe, 2: 23342-23808)

Tracy also commented along these lines when she stated, "I don't think the author is trying to communicate anything to me" (1: 44080-44145). The participants also wanted to be interested in the text, although interest was not considered a prerequisite for good writing. A text could be exemplary and uninteresting to a participant.
They praised the artist’s manifesto for its poetic qualities and the student's opinion/stance; however these characteristics were insufficient for 3 participants who felt the manifesto did not represent good student writing. Lack of a focal issue, organization, evidence, and explanation left 3 participants feeling as if the text was not communicating a message to the reader. Only Dave believed the manifesto should be considered good student writing; he did not find it wanting in these three text characteristics.

The interpretive scroll was uniformly praised by the Art participants as representing good senior-level writing primarily because of its clear thesis statement, logical organization, and accumulation of evidence as support. Tracy found that “a couple things make this paper work well” such as how it established a focal statement and used unambiguous sentences. Dave stated that “it’s an excellent example of excellent scholarly writing.” (1: 32827-32886). Several times during the interview Joe noted the quality of the interpretive study: “I thought it was a very good paper” (1: 156-191) and later, “I like it. I admire this. I would be happy if I got a paper like this” (1: 5661-5731). Mark was also impressed: “I thought this was very good” (1: 10819-10847) and later, “It’s really quite impressive” (1:11615-11643).

The essay on beauty was also praised by the participants, in part because the student writer advocated her own opinion which ran counter to current thought, namely that art should be beautiful. They also felt the essay established a contestable focal issue, followed through on organizational expectations, and provided evidence. Dave called the essay “impeccable” (1: 18151-18162). Mark and Tracy pointed out many positive text characteristics and did not find much that detracted from the essay’s quality. Joe agreed
that essay was good but believed it to be of lower quality compared to the interpretive scroll. He commented that the essay on beauty in art was “pretty well written” (1: 21885-21905) and summed his evaluation up by saying, “I’m not disappointed” (1: 24072-24092).

The core principles underlying their selection of the text characteristics included the art community’s traditions and practices, belief that writing skills are a general necessity in post-college careers, and perceived connections between writing and thinking as well as writing and reading. The Art participants viewed writing as dynamic. It can communicate something interesting to the reader as well as alter or clarify thoughts for the writer. For them, written texts seemed to be more than words in a document. The participants acknowledged the potential power of writing for readers and writers. In regards to writing across the academy, they had different opinions as to whether the characteristics they valued were also valued by professors in different academic fields.

Findings: Biology

Descriptions of the Biology Student Texts and Assignment Guidelines

The three student texts that the Biology participants read represented two genres: review of an issue and reports of experimental research (also called lab reports). The guideline sheet for the review of an issue assignment that students received stated the following:

Topic: Marine invasive species—can they really be controlled? Assignment: Within the 5-page limit (12 pt font, double-spaced, excluding references), discuss whether you think the battle to control marine invasive species is one that can be won... Whichever your point of view, use specific case studies to present your
arguments, and primary literature citations to support these ideas. There is no


correct answer for this essay—but you need to make a convincing case for your


point of view. (Assignment Guidelines Text B1)


The guidelines listed five readings to serve as the student’s starting point, and students

were cautioned that those five “should not comprise the majority of the papers” cited for

the assignment. The grading policy described the penalty for late assignments that were

not accompanied by a medical note. No evaluation criteria were provided on the sheet.


In response to the assignment, the student wrote a five-page review of an issue

that examined the concerns and “potential harm [to] native fisheries” (Text B1, p.1) of

four fish species introduced to Hawaiian waters by the Hawai‘i Division of Fish and

Game between 1956 and 1961. The student writer explained that this is a “particularly

sensitive issue in the Hawaiian islands” because of Hawai‘i’s unique biota (Text B1, p.

1). For each of the four fish species, the student writer provided a brief history of its

introduction, salient characteristics and data (e.g., habitat, feeding habits, tons caught per

year), and the local fishermen’s and fish-buyers’ perception of the species. The review

included possible methods to lessen negative effects of the introduced species, and it

ended with a brief summary of points made in the review. The student writer cited

library, Internet, and personal communications, and the text included a reference list.


There were two reports of research that the participants referred to as lab reports.

The participants recognized the genre immediately, in part because each report gave

standard experimental report headings: Abstract, Introduction, Methods, Results,

Discussion, and References. The first was a five-and-one-half pages lab report on plant

succession that collected data on and analyzed the growth of koa after a fire. The
professor who gave the assignment explained that data collection had been ongoing since a fire in the 1970s in the Koʻolau mountain range on Oʻahu. The professor's classes had visited the site every other year to collect new data at the same location. When writing their reports, the students used the previous classes' data so they could analyze longitudinal trends.

The students in the course received two 2-page handouts. The first handout explained the grading procedure and explained that “points for each section are awarded on the basis of whether the section has the right stuff” (Assignment Guidelines Text B2). The sections and possible points were listed (e.g., 20 possible points for “Quality of Writing”, 5 for the “Abstract,” 22 for the “Discussion”). Each section was described and included guiding questions for self-evaluation: “Quality of Writing: ... you will receive a grade on the overall quality and clarity of the written portion of the paper ... Are the spelling, punctuation and grammar correct? ... Say what you mean, clearly and concisely” “Abstract: Are all the major components of the research described in a succinct and complete manner?” (Assignment Guidelines Text B2).

The second handout was a five-page description of a lab report and the type of content in each major section, from the title to literature cited. It also stated, “While you might spend a good deal of time in gathering data for a study, the information is of no use until it has been properly written up. ... Your lab write-ups are to be in the format of a journal article and the quality should be as close to professional as you can manage” (Assignment Guidelines Text B2). Because these handouts included evaluation criteria and expectations, triangulation was possible.
In the lab report, the student writer defined plant succession using library sources and the course textbook and stated the goals of the study: "We used the density and girth of koas growing on a burned mountain slope as an indicator of the progress of the succession we studied. We also studied the site to determine the species composition of the post-fire community" (Text B2, p. 2). The one-half page methods section included the site, location, sampling method, and calculations performed. The results section was also one-half page and gave the changes in species composition and the girths of the koa trees. In the discussion section, the student writer explained the results. For example, the writer stated, "Over time, the density of koa trees decreased on the burn site. This can be attributed to the self-thinning effects of intraspecific competition on a cohort of similarly aged individuals" (Text B2, p. 5). Two library references and the course textbook were cited as sources. The text included appendices with three figures (diversity of plants, girths of the koa sample, mean density of koa) and one table (types of species present at the site).

The second lab report was five pages and reported the results of a laboratory experiment on the egg activation process in sea urchins. The student writer had formatted the text to simulate the appearance of a published journal article. The report was titled: "Regulation of the cortical reaction by Ca\(^{2+}\)-activated Ca\(^{2+}\) channels on isolated egg cortices of the sea urchin Strongylocentrotus purpuratus" (Text B3, p. 1). The lab report was the culminating assignment for the course and the professor who submitted the report stated that the experiment was a semester-long research project. Prior to writing the lab
report, students submitted a written proposal for the experiment and gave two oral reports. Students worked in teams but each student wrote his or her own lab report.

The four-page assignment guidelines provided objectives such as “design and conduct critical experiments with alternative possible outcomes” and “clearly and effectively communicate your conclusions in both oral and written form” (Assignment Guidelines Text B3). The necessary content for each section of a lab report (abstract, methods, etc.) was described. In addition, nine pieces of writing advice were given. For example:

- Outline the report and write a quick draft of each section well in advance of the due date. Set aside the draft for a few days. When you return to it, you will do so with a fresh, objective outlook.

- Use the first person. E.g., “I tested for fertility by . . .”, not ‘This author tested for fertility by . . .”

- Check each sentence for completeness and agreement (subject, verb, object), and for correct grammar.

- Check punctuation by reading aloud your report. Listen to how it sounds.

- Check spelling. Use a dictionary for words you don’t know. . . Avoid “flowery” language. (Assignment Guidelines Text B3)

These guidelines were useful in triangulation, as was the other lab report’s guidelines, because they specified criteria and writing advice.

In the introduction, the writer of the sea urchin report reviewed the current research related to the experiment using library sources and stated the hypothesis:

We set out to observe the effects of the IICR or CICR when the other was inhibited, hoping to show a stronger effect by the CICR independent of the IICR, thus supporting the hypothesis that the RyR are essential in the mediation of the $\text{Ca^{2+}}$ wave and the cortical reaction. (Text B3, p. 2)
The methods section detailed the exact procedures used. The results section was divided into sections: controls and experimental conditions. The discussion recapped and explained the results, brought in library sources to support conclusions, and ended with a suggestion for a future study that could confirm their results: “Immunofluorescent staining for P-type channels in the CGs before activation of the fertilization reaction and observing the behavior of these throughout the cortical reaction could lend further support to these findings” (Text B3, p. 5). The lab report contained six figures (photos of the experimental slides before and after treatment), three data tables, and a list of references cited.

The 4 participants commented on the organization of the lab reports and evaluated whether the reports followed the structure given in the assignment guidelines. They also wanted to see appropriate content in each section, also as described in the guidelines. The advice on language given to the student writers was less emphasized by the participants compared to their emphasis on organization and development of ideas.

*Text Characteristics: Biology Participants*

The 4 Biology participants independently agreed on fourteen text characteristics as indicators of good student writing when asked what was good about each of the three written texts. (See Table 4.3. Appendix G contains the full list of codes, descriptions, and results. Appendix H provides the text characteristics mentioned by individual participants.) Certain characteristics were associated with particular genres (see Table 4.4.).
Table 4.3. All Text Characteristics: Biology Participants

<table>
<thead>
<tr>
<th>Text characteristic</th>
<th>Number of Biology participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish a focal issue</td>
<td>4</td>
</tr>
<tr>
<td>2. Set and fulfill organizational expectations</td>
<td>4</td>
</tr>
<tr>
<td>3. Create coherence</td>
<td>3</td>
</tr>
<tr>
<td>4. Define terms</td>
<td>2</td>
</tr>
<tr>
<td>5. Provide evidence and explanations</td>
<td>4</td>
</tr>
<tr>
<td>6. Contextualize the writer’s ideas, focal issue, or results</td>
<td>4</td>
</tr>
<tr>
<td>7. Hook the reader</td>
<td>0</td>
</tr>
<tr>
<td>8. Make inferences from data</td>
<td>3</td>
</tr>
<tr>
<td>9. Justify significance</td>
<td>2</td>
</tr>
<tr>
<td>10. Contain complex content</td>
<td>4</td>
</tr>
<tr>
<td>11. Tell an “academic story”</td>
<td>3</td>
</tr>
<tr>
<td>12. Make a unique contribution</td>
<td>2</td>
</tr>
<tr>
<td>13. Voice student’s opinion/stance</td>
<td>4</td>
</tr>
<tr>
<td>14. Avoid plagiarizing</td>
<td>1</td>
</tr>
<tr>
<td>15. Choose reliable and valid sources</td>
<td>4</td>
</tr>
<tr>
<td>16. Informs reader through title</td>
<td>1</td>
</tr>
<tr>
<td>17. Summarize text in an abstract</td>
<td>3</td>
</tr>
<tr>
<td>18. Describe methods in methods section</td>
<td>4</td>
</tr>
<tr>
<td>19. Present results in results section</td>
<td>4</td>
</tr>
<tr>
<td>20. Incorporate data displays</td>
<td>4</td>
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<tr>
<td>21. Conclude effectively</td>
<td>0</td>
</tr>
<tr>
<td>22. Avoid wordiness</td>
<td>4</td>
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<tr>
<td>23. Employ jargon or technical terms</td>
<td>2</td>
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<tr>
<td>24. Include poetic phrases and/or rhythm</td>
<td>0</td>
</tr>
<tr>
<td>25. Set the tone</td>
<td>2</td>
</tr>
<tr>
<td>26. Use unambiguous sentences</td>
<td>4</td>
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<tr>
<td>27. Choose precise words</td>
<td>4</td>
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<tr>
<td>28. Follow citation rules</td>
<td>4</td>
</tr>
<tr>
<td>29. Follow grammar and mechanics rules</td>
<td>3</td>
</tr>
<tr>
<td>30. Interest the reader</td>
<td>0</td>
</tr>
<tr>
<td>31. Communicate to the average reader</td>
<td>3</td>
</tr>
<tr>
<td>32. Achieve publication quality</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 4.4. Text Characteristics Discussed by 4 Biology Participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Text Characteristic</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lab report: plant</td>
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<tr>
<td></td>
<td></td>
<td>succession</td>
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<td></td>
<td></td>
<td>Lab report: sea</td>
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<tr>
<td></td>
<td></td>
<td>urchins</td>
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<tr>
<td>Structure</td>
<td>Established a focal issue</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Set and fulfilled organizational expectations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Development of ideas</td>
<td>Provided evidence and explanations</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Contextualized the writer’s ideas, focal issue, or results</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Contained complex content</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Voiced student’s opinion/stance</td>
<td>3</td>
</tr>
<tr>
<td>Research quality</td>
<td>Chose reliable and valid sources</td>
<td>4</td>
</tr>
<tr>
<td>Genre element</td>
<td>Described methods in methods section</td>
<td>0</td>
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<td></td>
<td>Presented results in results section</td>
<td>0</td>
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<tr>
<td></td>
<td>Incorporated data displays</td>
<td>0</td>
</tr>
<tr>
<td>Language and style</td>
<td>Avoided wordiness</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Used unambiguous sentences</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Chose precise words</td>
<td>2</td>
</tr>
<tr>
<td>Rules</td>
<td>Followed citation rules</td>
<td>4</td>
</tr>
</tbody>
</table>

Established a focal issue. When asked what made the texts good, the 4 Biology participants noted a particular section or sentences that contained focal statements. They looked in the title, abstract (when available), and opening paragraphs. For example, in the lab report on sea urchins, they each pointed to the same paragraph that contained a hypothesis statement.

The last paragraph of the introduction, “We set out to observe the effects of the IICR or CICR when the other was inhibited, hoping to show a stronger effect by the CICR independent of the IICR, thus supporting the hypothesis.” That’s what they want to do. (Mike, 1: 45431-45917)
They explain what the problem is that they are specifically going to look at. And they state their hypothesis so it’s really a hypothesis-based experiment that they are pursuing here. (Chris, 1: 1522-1954)

She raises a specific question . . . about which there is debate. Different hypotheses. And then says that she sets out to test how this mechanism works. (Sarah, 1: 31232-31876)

Karen also pointed to the same paragraph, and she added this comment:

They word it like this: “We set out to observe the effects of the IICR or CICR when the other was inhibited, hoping to show a stronger effect.” This is really unusual in scientific writing to say that you hadn’t a preference to find something. Because scientists are at least attempting to be objective so they would state the problem . . . but they don’t usually say what they hoped to find. I thought that was a little bit unusual. (Karen, 1: 19720-20231)

In addition to looking within the body of the text, the participants felt the title and abstract were also necessary locations for establishing the focal issue. Mike pointed out, “I go to the end of the introduction very often to see what the purpose is. Although I could have gotten that from the title and the abstract. But it’s a third way of getting the direction”. (1: 64778-64966). No abstract was written for the review of introduced fish species and Chris commented that the writer appropriately conveyed the focal issue in the title: “The title says, ‘Introduced Food Fish in Hawai‘i: Their Impacts and Controls.’ So basically this author is looking at the impacts of introduced fish species and looking at possible ways to control the damage that has been caused by them” (1: 24879-25116).

Set and fulfilled organizational expectations. The organizational expectations differed depending on the genre of the text the participants read. In regards to the lab reports, students were given the organizational structure in the assignment guidelines and were evaluated on how well they followed that structure. When the participants saw the section headings in the plant succession and sea urchin reports, they expected the typical
lab report structure (title, abstract, introduction, materials and methods, results, discussion). The participants believed the lab reports followed the appropriate structure and that the content was in the correct section.

The project and then the outline of the paper did follow the expected or contain the expected things you would want in a scientific paper. Abstract, introduction, methods, results, and discussion. (Sarah, 1: 38656-38852)

They have the components here. They have an abstract, an introduction, they have separated out the materials and the methods, and the results from the discussion. So like the [sea urchin] paper, they have done a pretty good job of keeping the results separate from their discussion; they’re not doing a lot of inference in the results section. (Karen, 1: 30010-30348)

The person understands how to organize something into a scientific paper. They understand how to build the introduction up to a statement of purpose. They understood what was appropriate in the materials and methods section. (Mike, 1: 48147-48371)

The review of the introduced fish species was not an experimental lab report and it had no section headings. Although some participants would have preferred headings, all four believed the review fulfilled their organizational expectations. Sarah was one participant who preferred section headings in all types of papers, but she does not require them:

I do like to ask students in papers to divide the paper into sections because I think it helps the reader follow things. And that would have been nice in this [review of introduced fish species]. But it’s so well organized. . . . Each paragraph follows from what’s previously been said in such a logical fashion that I think that even if there aren’t headings, sections, that doesn’t impair your understanding of what the student is writing about. (Sarah, 1: 1280-1696)

The writer of the review set up organizational expectations in the introductory paragraphs. Sarah stated that the student “sets up what’s going to follow in the rest of the paper in a one-sentence paragraph after the introduction by naming the fish that she’s
going to write about” (1: 2158-2315). Mike concurred: “You have this list of species on line 15 . . . that signals that they are going to deal with each of those in the following parts” (1: 35311-35467). The review did then discuss each fish species in a case by case manner. Chris pointed out that the review also set up a chronological sequence in addition to discussing each fish species:

It was very clear that this person had thought about how this review was going to be organized. Going from the history to the problem and then to solution . . . the sequence was very clear. It was going from step to step discussing different species and the problems associated with them. And then at the end coming up with a possible solution to this particular problem. (1: 31893-32364)

When asked, Karen stated that a review should “introduce the topic and make some kind of statement about the problem that they are addressing and then present the different sides and then conclude with some kind of argument for one or the other” (2: 14685-14884). She believed the review of introduced fish species accomplished that.

The Biology participants’ organizational expectations depended on the genre. They shared an understanding of the appropriate structure of lab reports and they applied that to the two lab reports they read for this study. They independently agreed that the review of introduced fish species created its own organizational framework through a statement of the fish species and fulfilled the expectation by systematically discussing each species.

Provided evidence and explanation. Biology participants expected the texts to provide library and Internet sources and observational data to support the points made in the text. With the review of introduced fish species, 3 participants were satisfied with the amount of evidence and explanation. In particular, they commented positively on the
range of evidence used to develop the focal issue, from personal communications to
government data to scientific literature. The participants felt that the variety of sources
strengthened the student’s claims.

He’s got papers from peer reviewed journals, opinion pieces cited from local fishing journals, scientific presentations cited from scientific meetings, fishery statistics cited from Division of Aquatic Resources. So he’s actually tying together a bunch of different sources. He also has web site information. . . . If he was to only present information that he’s gleaned from scientific articles he’d be getting only one of these points of view. But here he’s got that together with information that he’s gathering from the fisheries departments and from the fishermen themselves. (Karen, 1: 4803-5577)

Different types of data, the catch data, the research data, personal communications. I like that. The fact that they have used a broad source of information. . . . You can go to, for example, the primary research articles . . . Biological Invasions might look at the experimental effects of removal of one species and see what it does to the existing populations, but that doesn’t tell you . . . how extensive is the fishery for these introduced species. But you go to the catch data, I mean it’s very clear: so many pounds was caught of this particular species and you know, far fewer of these introduced species were landed. (Chris, 1: 30092-30818)

[The student] comments on whether or not there . . . are available good scientific data or studies that support or refute the negative perceptions about the fish. And those negative perceptions range everywhere from these introduced fish competing with native fish, consuming native fish or their larvae, and in the case of one species here, being unsuccessful as a food fish because of its reputation for carrying a very serious kind of toxic material that could be harmful to people. . . . Covers everything from whether or not the fish are good eating to how much it might bring on the market. (Sarah, 2: 2646-3908)

The type of evidence and explanation expected in the lab reports was different. Range was not mentioned. Instead, a sufficient amount of findings were expected along with explanation of those findings. Additionally, evidence from recent primary sources was needed to justify the study’s rationale and support conclusions, which is discussed later in this section.
The lab report on plant succession evoked comments in regards to its lack of findings and explanation:

[The student wrote,] "Increasing variation in growth rates led in turn to an increasing variation in girths." Well, where is the growth rate data? It’s just not here. . . . The first problem here is that she really doesn’t present data at all on growth rates. What she presents is data on average girth size. (Sarah, 1: 46183-46624)

They do have a few sentences here summarizing the general trends, which is good. A combination of figures and tables included here. But again I think it’s too general to understand the trends in the data. It would really help if they had given some summary statistics about percent cover of different species and how that changed over time, or whether there was a trend towards woodier species over time, or something like that. But they don’t have enough in here to really get an understanding of what they found and the importance of it. (Karen, 1: 35586-36125)

The lab report on sea urchins was praised because of the amount of primary sources that were included and the students’ understanding of those sources.

The [student] has had to become familiar with a bunch of literature. They’ve had to be able to discuss what these literature are. . . . The [student] has got to have fairly good understanding of what people have done. (Mike, 1: 59786-60491)

I didn’t know the [articles cited] and I didn’t know the topic titles of the [articles], but it seems the student was able to make a series of statements that were referenced and that was a good pattern. They had arguments they were presenting and they were referencing them. (Mike, 2: 15117-15388)

The [student is] gleaning from these [articles] the important things, the relevant things to their study and taking that information and writing it down so that you can actually find citations for the facts that they are including in the story that they are telling. (Karen, 1: 17842-18100)

Good use of the literature. It’s not that they just read a couple of papers. There’s 1 2 3 4 5 6 7 8 9 10 11 12, 12 papers that they read. And they know exactly what’s in them. It’s not that they just read the titles. So all those things I think made this a good paper. (Chris, 1: 4460-4729)
There was no disagreement among the Biology participants about what evidence was required in order for a text to be considered good student writing. Although they highlighted different aspects depending on the genre, the participants wanted comprehensive coverage of the focal issue: a thorough discussion of primary literature and findings in a lab report and a wide range of evidence sources in the review of an issue.

*Contained complex content.* The quality of the student writer's ideas, evidence, and explanation was a factor for the participants. Writers were praised if they demonstrated knowledge of a difficult subject area or methodology, went beyond commonplace knowledge, or showed awareness of the nuances of an idea.

The 4 participants commented on such examples of complex content found in the sea urchin lab report. Sarah believed the student writer showed deep knowledge: “The student obviously has a good grasp of some extremely complicated mechanisms that cause these series of events once the egg is fertilized” (1: 37739-37880). Chris stated that the content demonstrated a high-level of methodological knowledge:

> I like the fact that they are aware of what the problems are with the experiment. Anything that compromises the results, they talk about these possible problems so the reader is aware [that] these types of issues [exist] when they are using these [invertebrate] systems. That shows the level of sophistication that these undergrads had. . . . They are aware of what kind of problems could arise from the type of manipulations that they are doing. (1: 3179-3674).

The other two participants did not comment on specific parts of the lab report, but did offer a general comment on the entire sea urchin study and written report. They stated that they were unfamiliar with the science involved. Karen stated: “It’s pretty
complicated and I don’t want to be quizzed on the science here (18932-19009). And

Mike explained to me:

You’re talking to an ecologist, not used to membranes and molecules and stuff like this. So it’s harder for me to read because there’s less background in my mind that would allow me to easily slot things in and know where we’re going here. I don’t have any expectations for anything like, oh that’s a good thing to do, based on what I know. I don’t have clue. (1: 59056-59414)

Although they noted their unfamiliarity with the complicated science, they used their knowledge of the lab report genre to help them determine what was good in the sea urchin report.

Two participants appreciated the introduced fish species review in part because it contained complex content similar to that found in professional scientific writing. Karen stated that the review appealed to her because “there really is an idea in there that has a lot of scientific merit and could be investigated at the graduate student level” (2: 8670-8795). Sarah noted that “with respect to the scientific aspect of the [review], it’s good scientific writing because the student clearly pinpoints what the problems are ... but goes on to say in several different ways that we don’t really know if these are problems, perhaps they are just perceptions” (1: 546-844).

Unlike his peers, Mike did not mention complex content when discussing the three texts. However, he did note that the student writer of the introduced fish species review could have improved the content quality by taking a critical stance on the issue:

The critical element would be: Here’s two explanations for the decline of the goatfish. One is the ta’ape was introduced and they’ve driven the goatfish down in abundance. The other is that people continue to fish goatfish and as they remove the goatfish, the ta’ape has increased because there is more food available. Which is true? (1: 43462-43795)
Mike also highlighted areas of the lab report on plant succession where the student could have asked critical questions that, if answered, would have led to complex content in the report.

They could have looked at the tagged trees between an earlier year and their year and said, well since the numbers were declining, which of the trees were part of the decline. Was it the biggest trees? Did they die? Or was it the smallest trees? . . . Or they could have analyzed the growth of individual [trees]. (1: 7479-8143)

Two other participants also found the plant succession lab report lacking in complex content that they wanted to see in good scientific writing.

I think that the quality of the writing is poor primarily in the scientific context. And it isn’t just the writing. It was also the analysis itself. So obviously this person didn’t collect all the data. They focused on analysis and didn’t do a very good job of analysis. . . . Like this business of increasing variation of growth rates. Well you didn’t analyze that. So it has a lot of scientific flaws. (Sarah, 1: 624258-62909)

[The student wrote,] “It did not show the expected low value in the early years following the fire, however. This could be because the first sampling did not occur until two years after the fire.” Which is good. But then they go on after that to say that they would have to sample a lot earlier in the study to find the data that would actually make it fit into the trend. To me that was a little bit unsatisfying. . . . They didn’t really talk about problems that they found in their study (Karen, 1: 37744-39209)

Contextualized the writer’s ideas, focal issue, or results. For the Biology participants, placing the focal issue and lab results in the larger context of the field by comparing them to what others have written was an important text characteristic. In the introductory sections of the lab reports and the review, the participants wanted the student to present the current knowledge and explain, given that knowledge, why the focal issue was important to study.

She did introduce the problem. She did say why the problem exists. So, why the situation is seen as problematic. (Sarah, 1: 6368-6478)
I think he or she does a very good job of... introducing the problem of how this problem came about in the first place, the thinking behind it—that it would provide food for locals—and points out why that goal was not reached. Some of the problems associated with ciguatera poisoning or the lack of interest by locals in these types of fish. (Chris, 1: 25125-25470)

He starts off with a good rationale in the first paragraph for the topic that he's chosen... He's pretty successful in immediately laying out... what is the issue, why is it important. (Karen, 1: 605-937)

The conclusion of the introduction doesn't quite state the purpose as clearly as is desirable, but they have in earlier parts in the introduction said why they are doing this. (Mike, 1: 743-918)

The location where the contextualization appeared in the review and lab reports was in the introductory paragraphs. Additionally, in the lab reports the Biology participants looked to see if the student contextualized the experimental results in the closing paragraphs, the discussion section.

[In the sea urchin report,] they place their results in the context of the literature. Again, it's pretty much ideal. So the two places you concentrate on citing literature are the introduction and discussion of the scientific paper. So here in the discussion, they're going back to the literature. They're saying, here's what we found. Does it make sense in terms of what's out there already and what other people are proposing in pathways and reactions? How do the results of their experiment compare or differ from what other people have found? That's really good. (Karen, 1: 21689-22228)

[In the sea urchin report,] they put their study in the context of the broader question. They use the literature very well in the discussion... They also look at the literature within this particular field and they are aware of what's been published and they can put their own results in the context of those other studies. And really set up more studies that they can specifically look at those questions in more detail. (Chris, 1: 4109-5681)

[The results] should be put into context. Well, [the student could explain that] we expect this in every case, however, in such and such a case it doesn't happen. And this is why we expect koa to be typical and that her data show that it was typical. (Sarah, 1: 49749-49955)
You draw out of the data patterns that you see. Get the reader to see those patterns. Once you get to the discussion, you’re going to draw conclusions based on those patterns. The conclusions will either be comparisons with other studies where you’re going to say, these conclusions cause you to reject some hypothesis or cause you to build a new hypothesis. Or look at this place in a new way. (Mike, 1: 11149-11545)

The 4 Biology participants independently agreed that the lab report on the sea urchins placed the results in the context of the current literature. But, the 4 participants pointed out areas where the plant succession report did not.

She should at least say, “as other reports have shown” or “as we expect, this particular species of tree shows the pattern that we expect large trees to take in a succession.” (Sarah, 1: 49359-49534)

If they took the time to look more at what had been published . . . they might be in a position to use their data to comment on other people’s results or compare with other people’s results. So at least this person had the Scowcroft and Wood paper but they didn’t have anything else. They relied on the textbook. In the best of all possible worlds it would be nice to have more papers referenced. (Mike, 1: 23899-24308)

I’d encourage them to look more at primary literature to come up with explanations for this. (Karen, 1: 38556-38649)

Most of the information has been gotten from that particular textbook, which is not the primary literature. They could have used more studies on succession after fire to sort of show how their particular study fit into other studies in other ecosystems, and maybe even similar ecosystems. (Chris, 1: 22031-22322)

The lack of contextualization, in part, was because the student had not researched the primary literature and used only two acceptable outside sources in the report. The student relied on the textbook, which the participants criticized (discussed below in my section on valid sources).

Voiced the student writer’s opinion/stance. In the review of introduced fish species, participants mentioned instances in which the student writer voiced his or her
own opinion, observation, or conclusion as a positive characteristic. Three participants praised the review when the student presented his own ideas that were based on personal observations or were responses to expert findings.

I like the way this author brings in personal experience. For example, "It is the opinion of the author that this species is more common than generally believed due to similarity in appearance to Toau when seen underwater." So this person has an interest in this problem and has first-hand experience and brings that into this . . . so connects personal experience into that as well . . . It's something probably that this person is interested in, these introduced species into Hawai‘i, and obviously somebody has made personal observations on this problem before they actually started writing this paper. So I don't know the [writer's] qualifications to judge. It might be somebody who has worked in this area for a while and then has come back to school. But clearly, they have an opinion of some of the problems associated with the lack or dislike of these fish by people. (Chris, 1: 25504-27083)

His own opinions are coming through. . . . You could tell that he had a real opinion on the topic they are talking about. This is someone who got into the literature, who also has first-hand experience. He’s aware of the problem, it’s something he thinks about . . . He has direct knowledge of the subject and has formed a careful opinion on this. I think he’s presented that well. (Karen, 1: 3818-4328)

Sarah explained more about how she wanted students to voice opinions or take a stand:

I say [to students] at the end, "I want to hear what you think about this." . . . Why shouldn’t they be able to express an opinion? I certainly do that all the time when it comes to conservation issues, which is what we deal with here. And I know that I'm not necessarily right. I just say, well I’ve considered all this information and this is what I think. I think that’s fine for them to do. I think it’s a good idea to ask them to make that judgment. In fact, sometimes if they don’t do it, and they’ve written about a controversy, I’ll say at the end, well gee I was kind of disappointed, I want to know what you think. So then maybe I’ll engage them in conversation before they depart after the class is over and say, “What did you think about this?” (2: 10882-11827)

Mike also appreciated student writers who entered their opinions and conclusions into the text, but he did not mention observing any in the review of introduced fish species. He expected, but did not find, the writer’s own conclusion:
It's a workman like study of what's out there. He clearly presented what's out there. But a critical view? No. I think I would have written a comment, saying, you know, "What have you concluded here? What is the impact of what was done?" (1: 38589-38824)

None of the participants mentioned that they expected students to voice an opinion/stance in the lab reports. They highlighted this characteristic only when they discussed the review of an issue.

Chose reliable and valid sources. The 4 Biology participants read and evaluated the lists of references at the end of the three texts. They wanted to see current, up-to-date sources from a peer-reviewed journal or book or from a recognizable expert. Unless the subject matter was historical, the participants looked for recent information because they were interested in what is currently known. Mike taught his students to use information only from peer-reviewed journals or books because the "statements will be safer because you can find the reference behind your statement. You can also be somewhat more assured if it's passed scrutiny that it's a fairly good idea" (2: 21153-21335). The other Biology participants also commented that peer-reviewed science journals and recent publications were expected in good student writing.

I like to take a quick look at the . . . composition of the literature cited or references, bibliography, whatever you want to call it. And this is a good cross-section of references. It focuses primarily on scientific references. . . . They are quite specific in respect to the species she’s discussing. And the quality of the references is what I would call either good or appropriate. For example, having a couple examples from Hawai‘i Fishing News is good because she’s talking about the perceptions of local fisherman about these things. . . . And then the other journals are appropriate and of good quality. . . . She’s trying to get the most recent references. . . . Unless you’re writing about a historical topic in science, you want to know, what do we know right now about this? Sure we might have known that back in 1990, but don’t we know something new? (Sarah, 1: 17180-19860)
They have a lot of relevant literature cited in there. These are all peer-reviewed publications from what I can tell. . . . They've got good coverage of the literature and they've restricted their citations largely to relatively recent stuff in the field of cell biology. Things move so quickly that unless you're citing a paper that's seminal in establishing the field, you typically don't go back more than a decade or 15 years at most. They've got some pretty good, recent citations in here. (Karen, 1: 16703-17504)

The lab report on plant succession cited a textbook (as one of its three sources), and the participants criticized the lab report because of that. They gave their reasons why a textbook should not be used or extensively relied upon.

One of them is a textbook and I strongly recommend to my students not to use textbooks, but rather go to the primary literature . . . because in most fields, especially in my field, by the time the textbook has been published it's already out of date. (Chris, 1: 23335-23660)

I was a little surprised that they didn't have more literature here because this is a topic that has a lot of background here in Hawai'i. There are a lot of people studying this. There should be dozens and dozens of papers available they could have cited to give background specifically about what's going on in Hawai'i in this kind of case. Taking a textbook that was published on the mainland as pretty much their only citation for background into the problem seems a little irrelevant. It's not Hawaiian to begin with and it's very generalized. . . . I think it's too general for a scientific paper. I think I mentioned this before, but it's an understanding essentially that when you're writing a scientific paper you exclude or extremely limit the number of textbooks you cite. You generally limit it to papers . . . because textbooks generally have very distilled views on things and in a paper you're looking for the complexities, the detail. (Karen, 1: 31480-32565)

The author of the textbook has gone through a lot of trouble to reference things, and for the papers [students are] writing, they could really find things from among those references that would be the original work, not the interpretation of the original work. . . . As much as possible, I would reference the original. (Mike, 2: 15643-16066)

In both the lab reports and the review of introduced fish species, the participants applied the same criteria: sources should be recently published and primary, preferably peer reviewed.
Described methods in the methods section. When reading the lab reports, the Biology participants expected particular content to be organized under a particular section heading as I described earlier. The participants stressed the nature of the content required in each section.

The participants did not bring up methods when they read the review of introduced fish species. When they read the lab reports, they looked for a detailed description of the procedures and techniques in a methods section. They found the methods section of the sea urchin lab report to be well written.

The materials and methods are very clear, again. There’s a very clear explanation of the methods. Wherever necessary they cite the paper that they took the method from so somebody who wants to repeat it, can repeat it. All of the information is there. An extremely important aspect of the scientific paper is that somebody should be able to repeat the experiment or at least find where they got the methods from. And I think that’s all there in this particular case. (Chris, 1: 1959-2435)

In this case it’s very important to say a lot about how you dealt with the eggs and exactly which chemicals you use and when you injected them and how you did it. Because . . . the description must be clear enough that someone else can come along and go, I don’t think this experiment worked out; I think maybe they didn’t do something right. They could then take this and repeat the experiment themselves. So it’s always very important whenever you’re giving a report on original research to say exactly what you did. (Sarah, 1: 26980-27580)

Overall they’ve included a lot of detail in their materials and method section so that you could go out and replicate what they did. Which is the aim of a materials and method section for the reader to be able to replicate the experiment. So they’ve got a lot of detail there. (Karen, 1: 20406-20682)

They’ve told you enough about what they did. You know sometimes it seems like its ridiculous detail but you need to know these things. Like, [the egg] was never in the air because the membrane might be altered by exposure or something like that. (Mike, 1: 52709-52947)
Three of the 4 participants were not satisfied with the methods section of the plant succession report. Unlike the sea urchin report, this report did not provide sufficient detail and 3 participants were uncertain what techniques the student applied and what data were collected.

[The student wrote.] “Point sampling was performed.” . . . Well, when I used this method, I used cover repetition . . . So is that what they did? Maybe not. I don’t know. It’s not clear what they did. (Sarah, 1: 59444-60409)

There were some things that were left out in the methods section, like for example where was the data from, who collected it. (Chris, 1: 37412-37536)

It’s a little too brief just in terms of what you’d normally include. They’re talking about their site being on one section on one ridge in a particular mountain range. Normally you’d have it down to GPS coordinates . . . so you’d know exactly where this was. They don’t have the exact dates in here when they did this sampling . . . You never do find out how many times a year, which dates, which time of year, was it rainy or dry season when they were out doing these kinds of surveys. A lot of details are omitted . . . The third paragraph, “some trees along the slope were also tagged.” Okay, but how did they choose these trees? Which species were they? (Karen, 1: 33398-34979)

The fourth participant, Mike, had selected the text for this study. Instead of discussing the student’s method section, he explained to me what the students in the class did that year:

Their year went up and collected their year’s worth of data. What the cover was, what species were in the transect. They went around and looked for the tags on the trees and got the girth and height of the trees. They bring all of that back and we sit down at the lab and we collate all the data and we say, “Here’s the data from the previous years. You take your data and the previous data and tell us [what’s going on].” (1: 8678-9082)

Presented results in the results section. The Biology participants expected the students to present only results in the results sections of the lab reports. They did not discuss results in relation to the review of introduced fish species because the writer did
not conduct an experiment. When reading the lab reports’ results section, Karen checked whether the student had included interpretation or discussion points.

A really good thing about this paper is that they’ve achieved separation between the results and the discussion which can be really difficult to do sometimes. So they’ve got a well defined results section where they are, appropriately, only presenting the results of their experiment. (Karen, 1: 20687-21031)

The participants positively mentioned results that were directly and cleanly presented.

Sarah stated that the sea urchin text had results that were “clearly described” (1: 32407-32424). Mike and Chris also found the results clearly described in the sea urchin report:

The results are broken down and dealt with in individual sections with topic sentences. [For] each treatment the paragraphs state what the purpose was and then tell you the result. (Mike, 1: 45956-46132)

In the results, they use controls. It’s very clear what controls they used [and] why they used those particular controls: so they have something to compare their results to. In every case, they are using these controls that they can match up their experimental samples to. Then they go to their results. The results are basically what they got, what they’ve done. The replications. They present that data very well. It’s very clear how they present it. (Chris, 1: 2439-2896)

Similar to its lack of methods in the plant succession report, the report also lacked sufficient results. Two participants discussed the inadequacies of the results because not enough information was provided.

The last section of this results section, it’s just a single sentence that summarizes a large amount of data, “the mean girth of the tagged koa trees has shown a steady increase over the years, while the mean density of koa trees in the sampled quadrants has shown a decrease, figure 3.” So here they have a large amount of data all wrapped up in one sentence without a lot of extra detail given about how many trees they actually tagged to derive the averages, things like that. (Karen, 1: 36137-36620)

I would like to see greater development of the results. . . . I imagine if I were looking at this to give back to the student I would have suggested that there could have been more detail, more information could have been drawn out and
presented in the results section... They talked about the diversity index, but they didn’t talk about the cover of the organisms. (Mike, 1: 549-1338)

**Incorporated data displays.** Data displays were in both lab reports, but not in the review of an issue. In the report on sea urchins, the results section included color photos and tables. The report on plant succession referenced tables in the results section and the tables themselves were in the appendix. The Biology participants believed that data displays were necessary elements in the lab reports. Karen explained that good data displays convey a lot of complex information: “Without the table it would be a very onerous paragraph to read to get all the words in there. So it’s a summary graphic essentially to put it out there without having to spend a lot of words talking about every iteration of this experiment” (1: 25091-25330). When the data displays worked well, the participants remarked on it:

In the results she says, “there was no significant change in the calculated diversity index” but there was a change in species composition. And she shows that in the table and the graph so that’s good. Presented the information and that’s it. (Sarah, 47564-47807)

They’ve used figures and tables very effectively here. Data are presented in tables. They have micrographs of what is actually happening to parts of the cell as they are actually working on it. And they are also summarizing these figures and tables in paragraphs. (Karen, 1: 21142-21406)

When data displays didn’t work well, the participants commented. For example, Mike questioned a table in the lab report on plant succession because it did not summarize and highlight important features of the data:

Why are they blasting us with all of this stuff? Why didn’t they distill out the main points? And the points that are relevant to the questions or issues that are out there. You’re not going to impress us by giving us a quantity of information. What’s going to be important is whether you have extracted interesting patterns. (1: 22014-22339)
Chris found tables in the plant succession report were not labeled clearly:

I want the figure and the legend to be self explanatory. So somebody does not have to go back into the paper itself to figure out what that table or figure says. So I’ll have a legend that explains exactly what that figure is about. So I can go to a figure and say, well, what do the data mean? I can look at the legend and know exactly what the results are. (1: 22774-23134)

Avoided wordiness. The participants commented positively when sentences used as few words as needed. Karen noted there should not be “too many words that aren’t necessary (2: 14932-15002) and appreciated those texts that were “fairly trimmed down” (2: 15016-15035). When reading the review of introduced fish species, Sarah commented:

Here’s an example. This is a sentence about the composition of Hawai‘i fauna, “distinct from other island groups and characterized by a high level of endemism.” She has expressed in those very few words . . . a lot of information. (1: 9527-9767)

Chris commented about the review of introduced fish species: “The sentences were short. And very clear. It was not like in [the plant succession report] that we’ve read where the sentences went on and on” (1: 32387-32525). When asked why he preferred short sentences, he responded:

Especially for science writing, a short sentence is a lot easier to read than a longer sentence. . . . If you are reading a pile of papers that highlights one particular issue, you want to get the facts. . . . You don’t care about the flowing prose or whatever. (Chris, 2: 16982-17574)

Mike identified sentences that he considered wordy. He pointed to this sentence of the sea urchin report, “Our results, though not what we originally expected, shed some light on the mechanisms involved” (Text B3), and he stated it “could be more specific than that wording” (1: 54617-54756).
Overall, the participants identified few sentences in the three texts that were concise or wordy. However, they did explain the need to be concise from the perspective of publishing in a science journal, which I discuss later in this section.

*Used unambiguous sentences.* Unambiguous sentences were desired by the participants because they did not have to guess the student writer’s intent. Karen stated most student texts she has read contained ambiguous sentences:

> So it’s actually very rare at least among the essays that I have read at the fourth-year level to find a piece of writing where you could read through it and it wasn’t hard work. Where you weren’t always wondering, what did they mean by that? . . . This [review of introduced fish species] is something that read really well. (Karen, 2522-2949)

The Biology participants located sentences in the student texts in which the intended meaning was not clear to them:

> For example, this last sentence in the introduction, “In this study we found the Shannon-Weiner diversity index, which Pielou found it was the most appropriate indicator for large collections from which a random sample can be drawn, but which includes an unknown number of species.” That’s sort of a long, awkward sentence. It’s not clear exactly what they are trying to say. (Chris, 1: 15747-16122)

> [The student wrote,] “Although unfounded as of now, organizations such as . . . have accused the . . . Indians of giving other tribes pointers on how to initiate a court case claiming tribal cultural rights involving hunting of endangered animals.” So what does she mean by “although unfounded as of now”? I have no idea. (Sarah, 2: 19307-19619)

> [The student wrote,] “Studies of the removal of the lutjanid snappers from reef system have shown that abundance of fish in heavily fished areas is significantly less than those receiving only light fishing pressure.” . . . Is that the food fish of the predators or is that the predators themselves? (Mike, 1: 29969-30299)

The participants wanted to understand the sentence and not question it. They desired unambiguous sentences in the lab reports and the review.
**Chose precise words.** Precision of word choice from the biology perspective involved objective terminology, appropriate descriptions, and using technical words correctly. Sarah voiced concern when the lab report on plant succession discussed the height of the koa trees being studied: "The adjectives that we use should be objective. They should be specific. . . . [The student wrote] 'tall trees.' More than forty feet tall? Is that what you mean by tall?" (2: 14952-15605). She also highlighted a word that has a technical meaning in the science community:

Okay, [the report] says, "there was no significant change in the calculated diversity index for the burned areas." Okay, well when a scientist says the word *significant* then they better have done statistical tests. And there's no statistical tests that's discussed here. . . . Usually when you say *significant* in a scientific paper you're talking about statistical tests and you should say what the test is, why you used that particular test. (1: 60489-61911)

Karen explained that the student writer should not have used only common words; the scientific terms would have conveyed the meaning precisely:

They have all their common names here for their species, and the most descriptive names they come up with are things like "grass, foxtail"; "grass, unknown" things like that. In a real scientific study they would probably have a hard time getting this published without the Latin names associated with them. (1: 40291-40598)

Chris praised texts in which the student writer chose a particular phrase or word:

The use of the language, you know, good descriptive terms, was very good. . . . second page, first complete paragraph, "As with ta'ape, concern has been expressed that burgeoning populations of roi are having adverse effects upon native fish." That's a good term for an undergraduate to use, *burgeoning*—sort of increasing. I thought that was a nice word to use with that. (1: 31077-31812)

The participants did not highlight many instances of word choices that were particularly good or bad in the student texts. However, all 4 explained the importance of choosing precise words. Two gave me examples from previous experiences working with
students. Mike recalled a prior experience with a student who used the term “struggle” in a lab report. He explained:

I didn’t mean to be overly harsh, I was trying to be fairly lighthearted about it. I said, you know, “Don’t use [struggle] because it’s anthropomorphic.” It was something left over from an English class. He was using words that were very different from what are used in science. . . . You tend to strip those out of writing in science. Like stress. How do I know whether an organism is stressed or not? It can’t tell me. I can’t ask it questions. (2: 35869-36422)

Sarah also gave an example from a previous experience:

There was a student who was writing about, I don’t remember what group of Indians in Alaska and hunting, I think it was bullhead whales . . . . So she wrote a proposal. I suggested that she needed help . . . and whoever she had in the writing workshop, suggested to her . . . to write in a way that was very unscientific. There were emotional terms, subjective judgments, and that sort of thing. That’s a pretty important basic thing that you want to get across even in a freshman-level science course. . . . If you’re writing about something from a scientific point of view or if you’re making an assertion that implies there is empirical evidence to support it, then it needs to be stated in, well, I guess what you’d call neutral or non-judgmental language. (2: 8787-10039)

The participants mentioned this characteristic with both the review and lab reports. It was not frequently mentioned when the participants read the texts. However, they did comment on it during the second interview which suggests that precision is important to them.

Followed citation rules. As mentioned earlier, the 4 Biology participants read the items in the reference list. However, all 4 paid attention to the proper formatting of the citations only with the review of introduced fish species. With the review, they noted whether the in-text citations and the reference list were formatted correctly and rules had been followed. Sarah commented, “The references are done in good format. Consistent. I have a terrible problem with that with my students. It’s really important for scientists to
learn how to do that” (1: 17441-17609). And Karen also found that the references were correct: “He’s done this [referencing] in a consistent format, one that would be acceptable in a scientific publication. And he’s done this in several different ways, all of which are acceptable” (Karen, 1: 4438-4609).

Chris was the only participant to comment on citation rules in the lab reports. He pointed out an in-text citation error in the plant succession report: “The use of the references, ‘Begon 1996.’ It actually should be ‘Begon et al.’ It’s more than one author” (1: 19264-19364). Other than this instance, the participants did not comment on the citation format in the lab reports. Their primary concern regarding citations in the lab reports appeared to be whether the sources were reliable, valid, and recently published.

Sources of Beliefs About Writing: Biology Participants’ Perceptions

The Biology participants’ beliefs about what constituted good student writing came from

a) adherence to traditions and practices of the biological science community, and

b) observation that seniors are capable of imitating professional genres.

I grouped the Biology participants’ comments about the nature of science writing; writing- and research-related activities they did as biologists; requirements for publishing in science journals; and learning about biological writing under the general heading “adherence to traditions and practices of the biological science community.” Comments the participants made about their personal observations of the skills of majors in the biology program were grouped under the heading “observation that seniors are capable of imitating professional genres.”
Adherence to traditions and practices of the biological science community. The Biology participants frequently mentioned the biological science community’s traditions associated with “scientific writing” or “biological writing” as the reason for highlighting particular text characteristics in student writing. The participants emphasized science writing because “the prevailing mechanism in science is the scientific paper” (Mike, 2: 39739-39799) and they wanted students to be “writing little scientific papers” (Mike, 1: 24508-24540). The participants preferred student writing that came closest to their expectations of how biologists write. However, the participants did not see science writing as monolithic; they acknowledged that variation exists, particularly across subfields (e.g., developmental biology, behavioral biology) and genres.

The participants’ description of science writing included both general characteristics and characteristics associated with specific journals. In general, the standard organizational format (title, abstract, introduction, methods, results, discussion) of a report of experimental research was expected in the students’ lab reports. The participants had a clear picture of what content belonged in each section and the lab report assignment guidelines gave analogous descriptions of that content. Mike and Karen explained why lab reports follow the community’s agreed upon structure:

In science you often don’t read something from cover to cover. When you go to a scientific paper like the [lab report on plant succession], you have the sections, and so depending on what your goal is at the time—the sections create predictability for where you find information. So you go to those sections and get that information. You don’t read the thing from cover to cover. You know what you’ll get if you go to the methods section. (Mike, 1: 35570-35993)

Scientists are trained to scan. We often don’t read papers the whole way through. We glean what was the point. You know where to go. Most people know what
part of the articles you need to read to find out whether or not you're going to
read more of it. (Karen, 2: 14705-14884)

The participants commented that, in general, lab reports have “excruciatingly detailed
descriptions of methods” (Sarah, 2: 17756-17803). Mike explained why:

Part of scientific writing is showing that something is repeatable. If someone
publishes a result, you should be expected to repeat it, or be able to repeat it.
That’s what happened with those Utah guys that had the low temperature fusion.
No one could repeat it. Supposedly the methods were clear enough that people
could repeat it. They tried to [repeat] it, but they couldn’t get it. So the whole
thing turned out to be terrible. (Mike, 1: 51175-51601)

When they read the lab reports, they checked that the results were reported separately
from the discussion of those results. Here, Karen describes why the results are discussed
in their own section:

If you were to only present the results in a discussion-type format, there’s the
potential for slanting the reader’s perception of your results. By separating them
and putting the results in their own section, [the author is] not allowed to
subjectively tackle those results there. Just sort of by agreement of what you do in
a results section. You don’t interpret your results in a results section; you only
present them. You say, here are the data and then you go to the discussion section
and say, this is what I think the data mean. And by keeping that separate, people
have the opportunity to go in and say “but I disagree” in a different paper. Or a
reviewer can look at your results again and say, “I don’t think it means that at all.”
So I think in terms of science, it’s important to keep those things separate. (1:
23708-24515)

Karen’s quote relates to another general aspect of science writing described by the
participants: in science, each published article should contribute to an ongoing
conversation on a particular topic. As Karen stated, “Science is not a closed door” (1:
23367-23396). One technique to add to the ongoing conversation is described by Sarah:

[The student writer] is very cautious about drawing inferences from data that
might not be justified. So I think a scientist would say, well there’s some right
pepperering of “this may be,” so on and so forth, instead of “this is proved that.” A
lot of students, even a lot of graduate students, make too free a use of the concept
of proving things in science. So this is good. This student has a good perception of what constitutes scientific writing. (1: 849-1276)

Another technique is contextualizing the focal issue of the study as well as the results so readers understand how the study contributes to existing knowledge. The Biology participants wanted to see student writers also do that.

What we’re trying to get students to think about is placing their idea—it might be a small idea, it might be just one tiny piece of a framework of a much larger puzzle and that’s okay. But you have to be able, in your piece of writing, to place it in that [larger] context. (Karen, 2: 9187-9453)

In their description of science writing, the participants paid attention to objective terms and jargon or specialized language. Subjective terms such as “tall” and “struggle” were labeled inappropriate in biological science writing. Based on community expectations of science writing, the participants preferred objective terms because.

“Science is based on assumptions like empiricism. If you can’t measure it, then you can’t really describe it scientifically” (Sarah, 2: 38973-39096). When we discussed the plant succession lab report, Sarah noted the use of superlatives and why they are not used in science writing:

Page 2, that last paragraph. “The best way to describe the composition of a community that takes into account both the abundance patterns and the species richness is by using a diversity index.” Who says it’s the best way? Begon [textbook]. There might be some other opinions out there. Very often seeing in scientific writing words like “best,” “most,” “proven”—I never say something is proven. I would say that this experiment demonstrates that. As sure as you say something is proven, which kind of puts the final character on your results, you’re going to find out something is different. It’s this basic characteristic in science that there are no final proofs. Look how long we all believed in the theory of relativity. And now we believe in something else. (1: 56777-57579)
Jargon or specialized language was expected in science writing. When Chris, a developmental biologist, read the lab report on plant succession, he pointed out that he was not part of the intended audience and thus did not fully understand the terminology:

This is geared to a specialized audience. You wouldn’t find a developmental biologist reading something on plants. [The student uses] the term “climax community.” So again, sort of a casual reader would not know what a climax community is. It’s a very technical term. But again, it’s a question of style in the field. I suppose a botanist reading this would know right away what a climax community is. Interviewer: How do you feel about that? Of course in most scientific journals . . . your audience is a specialized audience. So unless it’s something like a review, you would use specialized language. (1: 17962-18588)

Even though he did not fully comprehend, Chris approved the student’s use of the term because members of a subfield in the biological science community would readily understand. Chris further explained that the audience determines the appropriate word choice. In some situations, less specialized terms are needed:

People actually say that when you are writing a grant, even though you are writing for the specialized audience, you write at the level of USA Today. . . . You sort of make it a very general type of application rather than for somebody who’s exactly working on what you’re working on . . . so that a broader audience would appreciate what you are saying. (1: 18604-19042)

Chris also noted that journals such as Nature “really want a broad impact so people in many different disciplines can read a paper and appreciate it” (1: 22315-22413).

The participants noted that the desired science-writing characteristics vary depending on the intended journal. Karen talked about the use of scientific, Latin species names when writing for popular science magazines or layman-aimed newsletters compared to peer-reviewed science journals. For example, local Hawai‘i fishermen reading Hawai‘i Fishing News need the local fish names (e.g., ta‘ape), non-locals need its
common name (blue-striped snapper), and scientists need the Latin name (Lutjanus fulvus).

If you’re a fisherman and you’re reading this or if you’re someone who has an idea of these broader groups of fish, you know what he’s talking about by the informal names he’s got listed. But if you were a scientist, and you wanted to look up the distribution of these fish, their tolerances in terms of temperature or salinity, their food preferences or anything like that. You would need these scientific names to go to the literature to start digging out published information about the species. (1: 10308-10806)

When scientific names were not included, she believed the text would not be published in a peer-reviewed science journal. Sarah also commented about terms as appropriate for certain publications but not others: “If this were going to be published in a popular magazine, she’d probably have to explain what endemism is” (1: 9771-9876).

Another example of science community publication requirements dealt with conciseness: “Most journals have a space issue” (Chris, 2: 5836-5868) and their “preferred version is certainly the short, succinct format” (Chris, 2: 24994-25054). Mike criticized student texts that were not concise: “If this were *Nature* or *Science*, where the premium is on very few words . . . you’re really constrained. . . . You don’t even get to be so lavish in the way you present the citations” (1: 54831-55102).

Three participants explained why the focal issue of a text should be placed in the title and abstract and not only in the body of a science article: electronic searches of library databases would uncover the article.

In the biomedical field, you go to NCBI and look at PubMed and search for somebody who is working on the cortical reaction. They go and type “cortical reaction.” So it brings up all these papers, things that were published, things like this paper. And it gives you the abstract. So somebody can just read the abstract and they know exactly what these people did and what their results were. (Chris, 1: 8972-9359)
If you’re trying to deal with a lot of papers and are trying to figure out which ones you want to work into your introduction, or which ones you want to comment on, when it comes time to write your own paper, you look at the abstract to see what the person is saying. . . . You get the abstract through the library searches. (Mike, 1: 19723-20180)

You want to be able to tell really quickly: Is this paper interesting, worth reading, relevant? So a glance at the title should give an indication of exactly what it is they did. (Karen, 1: 28965-29143)

The participants increased their understanding of the biological science writing while in graduate school. Chris recounted how he learned to organize a scientific report: “I had an advisor who would give us papers and ask us to write reviews. . . . He actually sat down and we would talk about the structure of the paper” (1: 35202-35515). Mike recalled an advisor who had a plastic ruler that said “study nature not books” that contributed to his understanding that evidence in science writing should be from primary sources and direct observations. Sarah believed she started learning science writing as an undergraduate and then learned more as a graduate student. She remembered graduate school professors who were “very exacting about referencing your sources” (2: 34324-34369).

The Biology participants improved their ability to adhere to the traditions and practices of the science community through submitting articles to peer-reviewed journals and reviewing articles. Chris stated that he learned expectations of science writing through “writing your own papers for publication and getting back all of these red marks” (1: 35983-36062). Mike also believed that “working with your own writing. . . . writing publications” (2: 33979-34101) taught him to value certain text characteristics. Sarah
learned the importance of accurate and sufficient referencing of information through publishing and reviewing:

When you publish papers, if you’ve left out a reference, if you’ve made a statement—for example, this paper [Sarah picks up a paper on her desk that she’s reviewing] was supposedly written by this very well-known biologist. I’ve written comments like, “What’s the reference for this? Who found this out?” “Where are these numbers?” . . . You find out in the process of having what you’ve written reviewed and in reviewing other people’s material. (2: 34297-34820)

Karen chose to wear her “reviewer hat” when she made this comment about the methods section of the plant succession report: “If I was getting this as reviewer for a journal I would send it back saying I don’t know what you did, this can’t be published” (1: 41506-41632). She also commented that as a reviewer and reader of biological reports:

I would really look twice if I saw a methods paper from decades ago in a current scientific article. It’s possible it’s still valid, but more likely it’s something that isn’t entirely relevant, it’s an older thing that has been replaced by some kind of update since then. (Karen, 2: 16795-17066)

*Observation that seniors are capable of imitating professional genres.* The Biology participants held high standards for the student texts because they believed seniors were capable writers, ready to model professional writing. The participants drew from the biological science community’s expectations as they read the student texts. They expected high-quality, complex content, which included content that went beyond regurgitation of published reports or descriptions of results. When I asked Mike why he held these sorts of expectations for students he said:

Because that’s the purpose. Why are trees being cut down to make the paper for this report? What are you going to tell us that’s new, that’s worth telling us. Rather than just telling us what the patterns are. Presumably you’re going to operate on a level higher than that. Not just tell us the patterns. You’re going to
Karen believed that the student writers were capable of doing more than parroting back what they read, and they could develop their own content:

They are taking it an extra step further which I think is the proof that it’s actually circulated in their brain a little bit. That they have actually mulled some of these thoughts and concepts over and thought about it to the degree that it’s not just speaking back the same words that they find in the [published] paper or the exact same idea that’s presented in the paper. But they have gone a little bit further with it. (2: 6615-7028)

Sarah felt that upper-division students could comprehensively provide evidence to support an issue or problem: “I think they can do really quite well. And I think that they do much better when they are able to do effective searches in the library or effective searches on the Internet” (2: 27239-27411).

Karen, Sarah, and Chris read the student texts with an eye toward publication and commented during the interviews about the publishable nature of the review of introduced fish species and the sea urchin report. Karen believed the review of introduced fish species “could be an introduction to a real scientific article. It’s well on its way to being polished enough to be at that level” (1: 3677-3804). Sarah stated that the sea urchin report is “really written as though it was going to be submitted to a journal” (1: 26363-26435).

Chris, the professor who submitted that text stated:

I like [the sea urchin report] partly because the particular experiment that they did was quite sophisticated for undergraduate students at the senior level. So the design of the experiment was very sophisticated, the question, the interest, was very sophisticated. So the science itself is pretty good. In fact I told them that with a few more experiments they could actually publish this. (1: 171-540)
The Biology participants recognized that not all senior-level writing would be at a level of publishable quality because professional science writing was typically original, unique research. But they still expected the student writer to make their own contribution to the text they wrote. Karen explained:

I'm reasonably happy if it's new to them and they've made a good attempt at synthesizing the literature. Even if there's nothing terribly new coming out of what they are saying, if they are able to at least put together what they've read into something cohesive and make an argument one way or the other based on a series of papers they've read, that's pretty good. (2: 8133-8498)

**Biology Participants' Perceptions of What Good Student Writing is in the Academy-at-large**

The Biology participants felt they lacked the necessary knowledge to decisively comment on how writing in Biology compares with writing in other academic fields. Mike explained: “There's not been sufficient amount of base touching . . . So in other words, I haven’t engaged in a lot of interdisciplinary discussion of the goals one’s trying to accomplish” (2: 35126-35356). However, Mike felt the goals of Biology may be fundamentally different from other fields.

It's not style, but content. It's a predilection for wanting to know how things work. Conveying your understanding of how something works, which may not be always the case. Other people [in different academic fields] might be emphasizing expression, self-expression. (2: 35555-35795)

He continued:

I imagine there’s certain goals and tasks that are advanced in some fields that aren’t advanced in scientific writing . . . [Biological writing presents] your understanding of how something is working . . . In History they might be trying to interpret or re-interpret. Find connections that people haven’t understood before. Look for patterns. I imagine a lot of English writing would be trying to get across how you feel about some large or small issue, or what it causes you to think. (Mike, 2: 36662-37702)
Chris believed his judgments would match science professors more than those outside the sciences, but he was not firm in his belief:

My thoughts are probably more consistent with other faculty in the ... natural sciences rather than outside. I would think. *Interviewer: Why do you think that is?* It’s a different—basically like I said, science writing is boring, right. It’s writing that is very technical stuff and that’s probably not what represents good writing in English or psychology or something like that. That’s just my guess. . . . I haven’t read outside that much. (2: 25696-26302)

Karen was also unsure but leaned towards commonalities across the departments:

I think it’s probably much the same. That’s my guess. I don’t know. I haven’t done a lot of writing outside of science. . . . There may be different styles involved, but it has to be a lot of the same things going on in your mind to achieve [conciseness, correct grammar, contextualization, quality content]. (2: 27537-27845)

When she took a broad view of writing, Karen saw similarities cutting across fields:

Maybe there are actually a lot of commonalities that everyone is trying to help students write in a way that makes sense. Whatever field you are in, you have to be able to read it and actually get something out of that paper. You want to be able to not get all bogged down in grammatical mistakes, typographical errors, gaps in the flow from one paragraph to the next. Things like that. (Karen, 2: 19624-20011)

When asked whether faculty in other fields would value the same characteristics as her, Sarah stated:

Certainly not everybody. Certainly not in creative writing. Those [text characteristics], most of those things don’t matter in creative writing. . . . I certainly do think though that clarity would matter. And then again, comprehensiveness, it would all depend on the subject . . . of a particular piece of writing. (2: 38560-39466)

Because the participants had not read student texts from other fields or talked to colleagues in other departments, they were unsure whether their expectations of student writing would match.
Summary and Description of Good Senior-level Writing: Biology

Mike summed up what the Biology participants looked for with these questions that writers should address: "What are we doing here? Why are we doing this? . . . What’s the relevance of what we’re doing?” (1: 2977-3219). Participants expected the “what” to be answered in a focal statement. The “why” and “relevance” were achieved through contextualizing the focal issue and results. Reliable and valid sources enhance the contextualization. Participants looked for content organized according to genre rules when reading the lab reports or an identifiable pattern when reading the review. They preferred evidence and explanations that were comprehensive. Demonstration of complex content was preferred and, with the genre of the review, the student opinion/stance was praised. Some characteristics were associated with the lab reports: methods, results, data displays.

The Biology participants agreed that the sea urchin lab report and the review of introduced fish species were well written and should be considered good writing at the college senior level in biology. They felt that the plant succession lab report had flaws that led them to question its quality. The flaws mentioned include a poor description of research methods, no contextualization of the issue or results, and inadequate references.

[The review of introduced fish species] is good. Obviously I liked this one [points to the sea urchin report]. The [report on plant succession] . . . if that was the final version that was turned in to me, I would have been pretty tough on that one. 

Interviewer: The main reason being? Like I said, there wasn’t a good flow, there wasn’t enough use of the primary literature. As I said the data analysis was good, but there were some things that were left out in the methods section, like for example where was the data from, who collected it, and things like that, that were just missing. (Chris, 1:36993-37583)
I think the [sea urchin report and review of introduced fish species] are good. I would be disappointed if I received this [plant succession report] in a fourth year class. (Karen, 1: 43700-43800)

Sarah found the review of introduced fish species and the sea urchin lab report to be good (1: 280-313; 1: 37884-38155), but the plant succession lab report “about average” (1: 64721-64734) and that the “quality of the writing is poor primarily in the scientific context” (1: 62428-62512).

Mike, the participant who submitted the plant succession lab report as representative of a good paper, concurred with the others about the flaws in the paper. However, he justified the report as being a good paper because of the circumstances of the assignment:

This comes at the end of the semester when [students] are under a lot of pressure and they tend not to tell as much as we would hope to get in terms of tangible results, which can be seen by the shortness of the results section. (1: 271-526)

And later, he stated:

And you know, at this time in the semester, finals are coming on and they usually have a bunch of these reports to do and so these [reports] often get short changed with regards to how far they will look into the data. (1: 2119-2327)

The underlying reasons for their beliefs about good student writing included their desire to adhere to the traditions and practices of the biological science community that they learned through experiences with writing as a professional and while in graduate school. In addition, their view that seniors are capable of high quality work led them to evaluate student writing using similar criteria as professional science writing.

A theme which ran through many of their comments was the functions of writing in their academic community. For them, good biological writing contributed to and
advanced knowledge. The participants were sensitive to how the focal issue related to current knowledge, which led them to discuss the publication dates of sources. They desired explicit focal statements in titles and abstracts to aid others who were electronically searching for current information. Working with students to generate complex content and voice their opinions/stands was partly seen as preparing them to make contributions in the future.

The participants were able to provide extensive descriptions of what they considered good writing. However, they were unsure about what text characteristics were valued by other academic areas and were unable to compare qualities of good writing across fields.

Findings: Psychology

Descriptions of the Psychology Student Texts and Assignment Guidelines

The Psychology participants read two essays and a review of the literature. The first essay was a one-and-a-half page, four-paragraph description and discussion of Mednick's 2-hit model of the causes of schizophrenia (Text P1). The guidelines stated that the text should describe the 2-hit model and discuss why Mednick's research is important in understanding the origin of schizophrenia. The assignment had a word limit of 325 words. The grading criteria stated that the essay would be evaluated for conciseness, clarity, and integration of theory with findings (Assignment Guidelines Text P1). In addition, students were given writing advice: "The writing should be formal (e.g., no contractions, avoid 'I' statements), avoid rhetorical or other forms of questions, use
The student’s opening paragraph addressed the required content:

Research suggests that fetal neural disruption leads to developmental abnormalities in the central nervous system, which then interacts with stressors, and can lead to the onset of schizophrenia. The 2-hit model outlines this interaction between vulnerabilities and stressors. Research done by Dr. Mednick emphasizes the role of fetal neural disruption in the onset of schizophrenia. (Text P1, p. 1)

Paragraph two described the two “hits”: genetic or environmental fetal neural disruption and environmental stressors such as a traumatic event or illness during pregnancy. The next paragraph stated that studies have linked environmental stressors to schizophrenia.

The final (fourth) paragraph summarized the essay’s content.

Although the student writer referred to Mednick’s research, the student did not provide citations in the text or in a list of references. For example, the student wrote in paragraph 3, “One study shows the increased rate of schizophrenia in individuals whose mothers had influenza during their second trimester of pregnancy” (Text P1). The title and year of that study was not provided to the reader.

The second essay was two-and-a-half pages and discussed the role that encoding and generalization play in cognitive development (Text P2). The assignment guidelines stated the following:

What are the most important ways, in terms of their impact on cognitive development, in which the processes of (a) encoding and (b) generalization change with age? Support your assertions about the ways in which these processes change with empirical research findings from the readings, and then explain why you believe these changes are important for cognitive development. (Assignment Guidelines Text P2)
The readings were provided to the students in the class. Because additional information about specific grading criteria was not included, triangulation was limited.

The text opened with several broad statements before discussing two specific types of problems used to test children's encoding and generalization skills.

Information processing theories maintain that the mind is like a computer. They focus on the information children represent and process, memory limitations, and the structural characteristics (basic organization) and processes (which allow for the manipulation of information) of the cognitive system. Encoding and generalization are processes that are basic to learning and cognitive development. Encoding is the process of taking in information through the senses and organizing it into schemes in the mind. Generalization is applying information to appropriate circumstances, schemes, or problems. . . . Two cases illustrate these differences using the rule assessment method devised by Robert Siegler. The rule assessment method determines the predominate rule a child uses to solve problems based on his pattern of responses. (Text P2, p. 1)

The bulk of the essay described two cases—a balance scale and shadow problem—that psychologists have used to identify children's encoding processes. The student described how the problems are set up and presented to the children and then provided the results on different age groups of children. In the concluding paragraphs, the student drew conclusions and commented on how knowledge of encoding and generalization processes can help educators.

As illustrated by the balance scale and shadow problems, older children encode more relevant information and make generalizations when appropriate; younger children struggle to do so. Such limitations prevent younger children from fully understanding the world, because they often fail to correctly apply the information they gather to other situations. . . . A focus on encoding and generalization could help us modify current forms of instruction to guide children who are learning, further promoting their cognitive development. (Text P2, p. 2-3)

The student writer cited one experimental study in the text (e.g., Siegler 2005) but did not provide a bibliography at the end of the text.
The third text was a six-page literature review on the effects of witnessing domestic violence as a child (Text P3). The participant who assigned the review of the literature stated that he verbally explained what a literature review consisted of to his students during a class session. In another class session, students discuss their topic and he offers insights into how the literature review should be organized. He stated that he grades on the basis of content and organization consistent with the *Publication Manual of the American Psychological Association* (American Psychological Association, 2001) requirements for language and manuscript writing style.

In the student’s literature review, there was a separate title page and an abstract. The literature review was the only Psychology text to include in-text citations along with a list of references. Eighteen sources were cited. The text also contained one table entitled, “Spouse abuse witnessed in family of origin” (Text P3). The student followed the American Psychological Association (APA) style guide for research articles. For example, where the table was to be printed in the body of the text, there appeared, “Insert Table 1 about here” (Text P3, p. 7) and the table itself appeared on the last page, after the references.

The student stated the scope of the review at the end of the introductory section:

This review focuses on the prevalence of witnessing violence, what we know about its effects on children, and how such information can be used to develop effective prevention and intervention programs. (Text P3, p. 3)

After the one-half page introduction section, the text was divided into three main sections with headings: “Prevalence of Witnessing Domestic Violence,” “Children’s Problems Associated With Witnessing Domestic Violence,” and “Conclusion.” The first two
sections contained subsections with headings such as "Statistics" and "Problems in Reports." In each of these sections, the student discussed outside sources, using them to support points made. For example:

Studies using the Child Behavior Checklist and similar measures have found that child witnesses of domestic violence exhibit externalized behaviors such as aggression and antisocial behaviors as well as internalized behaviors such as fear and inhibited behaviors (Fantuzzo et al., 1991; Hughes, 1988). Children who witnessed violence were also found to show more anxiety, depression, trauma symptoms, and temperament than children who did not witness violence at home (Hughes, 1988; Sternberg et al., 1993). (Text P3, p. 5)

The literature review ended with a one-page conclusion section that summarized the previous sections and included a statement that the student's hypothesis had been supported. The conclusion also noted that additional research should be conducted in particular areas.

The guidelines for the essay on schizophrenia were reflected in the participants' comments when the read the three texts: conciseness, clarity, content directly related to focal issue. However, none mentioned looking for or finding examples of integration of theory into findings.

Text Characteristics: Psychology Participants

The Psychology participants brought up a variety of text characteristics in response to my question: what makes this a good text? (See Table 4.5. Appendix G contains the full list of codes, descriptions, and results. Appendix H provides the text characteristics mentioned by individual participants.) As a group, the 4 Psychology participants identified eight text characteristics in common when asked what made the
Table 4.5. All Text Characteristics: Psychology Participants

<table>
<thead>
<tr>
<th>Text characteristic</th>
<th>Number of Psychology participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish a focal issue</td>
<td>4</td>
</tr>
<tr>
<td>2. Set and fulfill organizational expectations</td>
<td>4</td>
</tr>
<tr>
<td>3. Create coherence</td>
<td>4</td>
</tr>
<tr>
<td>4. Define terms</td>
<td>4</td>
</tr>
<tr>
<td>5. Provide evidence and explanations</td>
<td>4</td>
</tr>
<tr>
<td>6. Contextualize the writer's ideas, focal issue, or results</td>
<td>2 (did not apply to undergraduate writing)</td>
</tr>
<tr>
<td>7. Hook the reader</td>
<td>1</td>
</tr>
<tr>
<td>8. Make inferences from data</td>
<td>1</td>
</tr>
<tr>
<td>9. Justify significance</td>
<td>4 (2 did not apply to undergraduate writing)</td>
</tr>
<tr>
<td>10. Contain complex content</td>
<td>2</td>
</tr>
<tr>
<td>11. Tell an “academic story”</td>
<td>0</td>
</tr>
<tr>
<td>12. Make a unique contribution</td>
<td>0</td>
</tr>
<tr>
<td>13. Voice student’s opinion/stance</td>
<td>0</td>
</tr>
<tr>
<td>14. Avoid plagiarizing</td>
<td>2</td>
</tr>
<tr>
<td>15. Choose reliable and valid sources</td>
<td>0</td>
</tr>
<tr>
<td>16. Informs reader through title</td>
<td>2</td>
</tr>
<tr>
<td>17. Summarize text in an abstract</td>
<td>2</td>
</tr>
<tr>
<td>18. Describe methods in methods section</td>
<td>0</td>
</tr>
<tr>
<td>19. Present results in results section</td>
<td>0</td>
</tr>
<tr>
<td>20. Incorporate data displays</td>
<td>1</td>
</tr>
<tr>
<td>21. Conclude effectively</td>
<td>4</td>
</tr>
<tr>
<td>22. Avoid wordiness</td>
<td>2</td>
</tr>
<tr>
<td>23. Employ jargon or technical terms</td>
<td>2</td>
</tr>
<tr>
<td>24. Include poetic phrases and/or rhythm</td>
<td>0</td>
</tr>
<tr>
<td>25. Set the tone</td>
<td>1</td>
</tr>
<tr>
<td>26. Use unambiguous sentences</td>
<td>3</td>
</tr>
<tr>
<td>27. Choose precise words</td>
<td>3</td>
</tr>
<tr>
<td>28. Follow citation rules</td>
<td>4</td>
</tr>
<tr>
<td>29. Follow grammar and mechanics rules</td>
<td>4</td>
</tr>
<tr>
<td>30. Interest the reader</td>
<td>0</td>
</tr>
<tr>
<td>31. Communicate to the average reader</td>
<td>2</td>
</tr>
<tr>
<td>32. Achieve publication quality</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 4.6. Text Characteristics Discussed by 4 Psychology Participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Text Characteristic</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Essay: schizophrenia</td>
</tr>
<tr>
<td>Structure</td>
<td>Established a focal issue</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Set and fulfilled organizational expectations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Created coherence</td>
<td>1</td>
</tr>
<tr>
<td>Development of ideas</td>
<td>Defined terms</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Provided evidence and explanations</td>
<td>3</td>
</tr>
<tr>
<td>Genre element</td>
<td>Concluded effectively</td>
<td>2</td>
</tr>
<tr>
<td>Rules</td>
<td>Followed citation rules</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Followed grammar and mechanics rules</td>
<td>1</td>
</tr>
</tbody>
</table>

written texts good student writing (see Table 4.6). Participants also mentioned a different set of characteristics with each text (see Table 4.6).

*Established a focal issue.* Although I asked the participants to identify what was good about the texts, the Psychology participants often pointed out weaknesses. This characteristic, established a focal issue, is an example of that. The 4 participants believed that focal statements that delineated the scope of the text’s content should appear in the introductory paragraphs, title, and/or abstract. However, they were not of the same mind on whether the texts had focal statements. With those texts, they highlighted flaws.

Only one text, the literature review of domestic violence, was deemed to have a focal issue and focal statement by the 4 participants. In the literature review, the student
wrote, “This review focuses on . . .” and the participants keyed in on that sentence as giving them the focal issue.

The last sentence of the introduction clearly indicates that this review focuses on the prevalence of witnessing violence, what we know about its effect on children, and how such information can be used to develop effective prevention and intervention programs. (William, 1: 22684-23040)

She’s kind of giving us a methods statement for the paper. She’s going to talk about prevalence of witnessing violence, what we know about the effects, and then how to develop effective prevention and intervention. (Jennifer, 1: 23647-23861)

Jennifer and William believed that the schizophrenia essay began by establishing its focus through several focal statements.

I like the intro sentence, “fetal neural disruption leads to developmental abnormalities which then interact with stressors and can lead to the onset of schizophrenia.” So I know right there that this 2-hit model is about fetal neural disruption in the central nervous system. That can interact with stressors and can lead to schizophrenia. . . . The second sentence, “2-hit model outlines the interaction between vulnerabilities and stressors” so I think he’s going to look at vulnerabilities and stressors. I like that because I know what I’m supposed to get from this. And then I know in the next sentence that this is about Dr. Mednick and his research. So we’re not really reviewing all of schizophrenia. We’re just going to talk about Dr. Mednick. So it’s fine. (Jennifer, 1: 1019-1999)

The writer starts off by telling us about the 2-hit model that looks at the interaction between an individual’s predisposition vulnerabilities and the effects of stress on the development of schizophrenia. (William, 1: 16538-16746)

Unlike Jennifer and William, Rob did not identify any focal statements in the introductory paragraphs of the essay on schizophrenia. Because he could not locate such statements, he looked to the remainder of the essay to guide him. When the body of the essay and its conclusion also fell short of his expectation, he expressed his confusion.

I’m not even sure what the paper was about. In other words, was it an attempt to describe the 2-hit model? It didn’t do a very good job of that. Was it designed to
point out research that supports the 2-hit model? Didn't do a very good job of that. (1: 12325-12573)

Lisa also found no focal statements and no demarcation of content boundaries. She identified several possible focal statements but she felt the body of the essay did not adequately discuss those statements. This led her to offer advice to the student writer.

So the 2-hit model illustrates how the vulnerabilities and stressors can interact. . . . Never really talks about the interaction so much. . . . [I recommend] thinking through a concept and applying it and taking a step back and thinking, what am I saying? What's the whole idea here? What's the purpose of all of this? (1: 35228-40427)

Rob and Lisa's comments point to the interdependency of the focal statement and the organization and selection of content for the body of the text. A text can have a focal statement, but if the body of the text does not address that focal statement, the reader later returns to the focal statement and reverses his or her opinion as to whether a focal statement exists.

Jennifer and Rob felt the encoding and generalization essay established its focal issue in the opening paragraph.

She introduces the topic saying “information processing theories maintain that the mind is like a computer.” . . . It's telling us that encoding and generalization are two processes that are important in cognitive development and they come from the information processing paradigm. . . . She’s telling us that she’s going to talk about generalization and encoding. She introduces it. We know. We’re not surprised when we get into it. (Jennifer, 1: 52283-58334)

Has a nice summary of what the general point of the paper is going to be and then says two case studies are going to illustrate and really lays these out in some detail. So it’s very easy to see how they relate to the point that he or she is ultimately going to make. (Rob, 1: 18942-19209)

On the other hand, Lisa and William felt the opening paragraph led the reader in too many directions and did not focus the reader on a particular issue. Lisa explained her
difficulties, and she and William indicated how the student could make the focal issue
clear to the reader.

The first two sentences are part of a different paper, I would say. Whereas, if you
just took those off and started with, “encoding and generalization are processes
that are basic to learning and cognitive development.” A very nice start to the
paper and it’s actually relevant to the purpose and title of the paper. (Lisa, 1:
2291-2607)

What I would suggest, if this was a person who turned it in the first time, you
want to organize it. You start off by telling us what the paper is all about, the
purpose of the paper. Be clear about what you’re telling the reader the major point
of the paper is . . . It’s not that clear in the beginning of the paper. (William, 1:
966-2585)

When the Psychology participants read the essays that did not contain a writer-
identified focal statement such as the one found in the literature review, they did not
independently agree on whether a focal issue was established. The Psychology
participants’ comments indicated that they preferred a direct, explicit statement of the
focal issue. In addition, their discussion suggested an interdependency of focal statements
and organization of content. When a focal issue was not found or could not be inferred
from the body of the essay, the participants discussed the global issue of whether a
message was being communicated to the reader.

*Set and fulfilled organizational expectations.* The participants did not appear to
hold different criteria in the area of organization for the different genres they read. They
commented positively about the organization when the text had a focal statement,
discussed the focal issues, and summarized its discussion in a concluding paragraph.

Three Psychology participants did not differentiate between statements that established a
focal issue and statements that set organizational expectations for the reader. For Jennifer,
the focal statement and an organizational statement could be the same statement. She had mentioned a “methods statement” and when I asked her to explain what it was, she replied:

The thesis statement. Sometimes people use them interchangeably. The thesis, though, could be different. Because the thesis could be, the use of red in the novel indicates death or passion or whatever. That’s the thesis statement. Then the methods statement would be, you can see the use of red in people’s clothes, the setting... So then that says how you are going to support the thesis about red. Then you write it out. So sometimes it’s all in one. (2: 12377-12852)

Other Psychology participants made similar comments about focal statements serving double-duty as creating organizational expectations. They did not always distinguish the two and they expected both to appear in the opening paragraphs.

This is what I’m going to talk about: bing bing bing. Like there is a little outline. She kind of described that outline in the introduction. She followed it. She summarizes it in the conclusion. Interviewer: Is that a common organizational structure in psychology? Yeah. It’s not necessary, but particularly if I’m teaching a student writing, I’ll have them do that at first... So that it’s clear to the reader where you’re going and how you’re going. Nothing wrong with hitting them over the head at first. (Rob, 1: 6147-6980)

You start off by telling us, the readers, about this 2-hit model and Dr. Mednick’s involvement in the model. And then they go into what the 2-hit model is all about in the second paragraph. And then the third paragraph is Dr. Mednick’s contribution to the development of this 2-hit model. Okay. Then the last paragraph is like a summary... that’s the 2-hit model and Dr. Mednick’s research. As I said, it’s easy to read and it’s well organized. (William, 1: 18308-18779)

She’s telling us that she’s going to talk about generalization and encoding. She introduces it. We know. We’re not surprised when we get into it. She gets into a couple of things. And then she sums it all up. So it’s clear what it’s about and what the evidence is. (Jennifer, 1: 58189-58453)

Lisa suggested that the student who wrote the encoding and generalization paper could more effectively set up organizational expectations.
[The writer] talk[s] about how young children and older children use rules or use dimensions differently. It would have been good to set that up. Then... I know what this paper is about. We're going to talk about different dimensions in cognitive development. There might be a difference in younger and older children in their rule use and how many dimensions they apply. So now I can expect that I will read about why that is and examples of what's going on. So kind of telling you what I can expect from the rest of the paper. (1: 9719-10241)

The Psychology participants were in accord regarding the organizational expectations created by the literature review because of the student's focal statement (or "method statement"). But when the text did not fulfill those expectations, Lisa and Jennifer reacted differently. The literature review's abstract and opening paragraph led them to believe that the text would have three sections: a) prevalence, b) effects, and c) prevention and intervention programs. But the section on prevention and intervention programs was combined with the conclusion. Lisa suggested modifying the opening paragraphs so the reader would not expect three separate sections while Jennifer accepted a combined third section/conclusion. Here Lisa explained how the text could be changed:

Well, the introduction leads one to believe that three things are going to be discussed: the prevalence, the effects on children, and information that can be used to develop effective prevention and social programs. And the first two are dealt with and the third one isn't in a section. So if the goal is not to talk about specifically prevention and intervention programs, then maybe [revise it to say]: This review focuses on A and B and last talks about prevention. But not make it seem like [prevention and intervention are] going to be a third of the paper. (1: 18820-19329)

On the other hand, Jennifer thought that including the prevention and intervention content in the conclusion was acceptable:

Then it has the conclusion which tells us about the intervention stuff that she promised in the methods statement. I was sort of expecting another section on [prevention and intervention], but it's okay that it's in the conclusion because if she didn't think it was necessary to write a whole section then you just have it in the conclusion. (1: 36645-36961)
Neither Rob nor William addressed this issue; both felt the literature review was well organized.

The Psychology participants evaluated whether their organizational expectations were fulfilled in part by judging whether the text contained only content that was directly related to the focal issue. Extraneous content detracted from the quality of the text. The participants found sections of the literature review and encoding and generalization essay to fall short and not fulfill their expectations.

Rob found an unrelated paragraph in the literature review on domestic violence: “It’s not contributing to the ultimate point that they are drawing within that section. It has to do with something else. It’s like a side track” (2: 6786-6930). William encouraged the student writers in his classes to “be more focused and more selective with what you include in the paper and so all the fluff is gone... Emphasize the main points that you think are clearly relevant to the purpose of the paper” (1: 25094-25324). Lisa commented that additional materials should not be included in order to meet an assignment’s minimum page requirement:

Each sentence should do some work. There shouldn’t be filler sentences to make the page length a little bit longer... You make sure that you’re only conveying the ideas that make your point in your paper. (1: 9010-9563)

In addition, Jennifer believed the writer ought to overtly explain how the content contributed to the focal issue. She expressed this by encouraging repetition in the text:

If the point here is that children witnessing violence can cause later problems in psychosocial functioning then every point made in the paper should go back to that. This could cause problems for later psychosocial functioning. So they should say it again... It’s like tell us again. Tell us again. Just nail that point. Sound like a politician making your point again. (1: 32366-32839)
The participants did not discuss whether the schizophrenia essay's content contributed to the established focal issue. The essay's length of one-and-one-half pages combined with two participants unsure of the focal issue may have been factors.

*Created coherence.* The participants wanted “coherent paragraphs” (Rob, 1: 7077-7097) and writing that “generally flows within the paragraph” (William, 1: 30007-30043), but the participants did not frequently mention this characteristic.

The student text could create coherence in different ways. Lisa pointed out that consistent use of terms would aid coherence:

> I would say they should probably have a close correspondence with how they phrased it in the beginning. So I was expecting a section on children who witnessed domestic violence, rather than children's problems associated with. Just to keep the language the same so the reader can track the sections according to what was stated in the introduction. (Lisa, 1: 24906-25256)

Jennifer found transition statements useful in helping the writing flow from one idea to the next in a coherent manner.

> She says, “similar findings resulted from another kind of problem” so it’s a nice transition. We know now that we’re getting into another kind of problem. (1: 56008-56165)

Only Jennifer mentioned coherence in relation to the schizophrenia essay. The others may not have brought it up because every sentence of the short essay discussed Mednick, fetal neural disruption, the 2-hit model, or schizophrenia.

*Defined terms.* The 4 participants stressed the need for terms to be defined in the encoding and generalization essay and the schizophrenia essay. Lisa explained why:

> The same words can be used many different ways. . . Like the word *cognitive* can be used so many different ways depending on what you’re talking about. It’s really important to say, by *cognitive*, I mean ______. And, so I’m using the word
Jennifer praised the encoding and generalization essay for defining terms: "She defines what they are, what encoding is and what generalization is" (1: 52930-53001). When asked why she noted that, Jennifer replied:

The reader may not know what they are. So it's helpful to let the reader know and then the reader can assess whether these points of evidence are actually about encoding and generalizing. (1: 58572-58759)

Lack of definitions could detract from the quality. Rob and William criticized the essays because a couple key terms were not defined:

Using a lot of technical terms without definition. The critical concept here is fetal neural disruption. Well, I don't know what that is. And I don't think the student really elaborates that very well. . . . It's never really laid out: this is what we mean by this. (Rob, 1: 10732-11040)

When they are introducing all these different rules they should at least try to define the rules. Give the reader some idea as to what they are about. . . . Provide definitions. Characterize the rules. . . . You need some way to understand what these different rules mean. How do you interpret them. (William, 1: 5557-5982)

The participants appeared to believe that the essays would be improved if the key terms were adequately defined. In regards to the literature review, the issue of defining terms was not mentioned.

Provided evidence and explanation. The Psychology participants wanted the essays and the literature review to provide support for the points made in the text.

Here I think they did a nice job saying that here are three different studies, you've got these statistics showing that it's really prevalent. . . . It kind of generates a nice picture that, yes, [witnessing domestic violence] is a problem. (Lisa, 1: 30-448-30713)
The other thing that was very good... in most cases the author draws conclusions and then gives empirical support for that, which is kind of the essence of a psychological paper. (Rob, 1: 960-1182)

I just try to get [students] to recognize that if they have a point that they are trying to make in a paper, that they have at least a citation to support that claim... at least one. I don’t have them look at everything out there. If there’s a major point, I tell them that you should try to support that point with at least a citation. A citation, of course, is evidence that someone has looked at this relationship and has come up with some kind of conclusion that there is a link between X and Y. (William, 2: 8997-9501)

Jennifer added that an explanatory statement can be useful, as in this situation where it was unclear whether researchers were in agreement:

She’s just saying Rossman found [exposure to domestic violence is associated with lower cognitive functioning], but there may not be differences, so the jury’s still out. She might have another sentence that says the results on cognitive functioning are inconclusive, something to that effect... That would sum it up. (1: 45833-46352)

The amount of evidence to support a point depended on the writer's intent. More than one piece of supporting evidence was needed for the writer to be able to generalize.

I like that they gave two examples. That’s nice. Not just one to make a point, but showed in fact that it has some generality. (Rob, 1: 19603-19730)

If you want to make a case that there’s an effect of X on Y, it would be nice to pull together two or three instances in the literature showing that X and Y. So in the [encoding and generalization] paper, the person didn’t just pull up one problem, they showed two problems. Perhaps an even better paper would have shown three problems. To say that it really extends beyond. So a poor paper would have just said there’s one problem... If you’re trying to show that the same thing applies across different domains, maybe four examples are important. (Lisa, 1: 29498-30418)

An accumulation of evidence, preferably derived from a variety of situations, added to the persuasiveness of the text because generalizations could be made.
Concluded effectively. The 4 participants specifically commented on the conclusion of the texts. The four praised conclusions that summarized the essay or literature review. Rob commented that the conclusion of the literature review “summarizes very nicely what was covered” (1: 1636-1672) and Jennifer had this response to the ending paragraph of the schizophrenia essay: “Then we have this nice little summary conclusion” (1: 4607-4655). William advised: “Have a final paragraph that summarizes the main themes of the paper (1: 1340-1407).

Beyond summarizing, the participants also emphasized different features of a conclusion that they liked to see. Rob and Lisa felt the encoding and generalization essay concluded well because it started with a summary and ended with an application. Rob explained:

I like taking a basic experimental situation here and laying out . . . practical implications, which is done in the final paragraph . . . Implications for education essentially, and training. Yeah, she says “current forms of instruction.” . . . Nowadays there’s a lot more focus on what are the practical implications of the experiment. (1: 20825-21431)

A different way to improve the conclusion was to have it expand upon the issues covered in the paper. William felt the encoding and generalization essay fell short of that and explained what he preferred:

[The conclusion] gives you a sense that you did something that has expanded upon those issues, those broad issues. That’s what we’re looking for in most papers, at least in scientific papers. Interviewer: Expansion? Yeah, you want to be part of something bigger. You want your research to be part of a big theory or big concept. That’s what you’re trying to do with your research. (1: 13169-13530)

Jennifer highlighted that the student writer of the literature review provided a critique of the findings for the reader.
It is nice when a conclusion helps you to see what to make of the research... So she's helping us see here the hypothesis was supported, however... these are correlational studies. What we need to do is measure this in a different way and do these prospective studies. So in psychology, conclusions and discussions often have the next step. What's called for. And then [the student writer states] we should broaden our understanding of children witnessing domestic violence. Yes, yes. Children may be overlooked. Yes. But the effects can be significant. She's shown that. I think this is a nice summary paragraph to end the paper. I really like that paragraph. (1: 40931-41697)

The participants looked for the conclusion to summarize, but they noted additional and different ways that contributed to an effective conclusion. It was unclear from their comments whether they agree with each other about these different ways and whether summary alone is sufficient.

Followed citation rules. The 4 participants paid close attention to whether the citations in the literature review were correctly formatted. The literature review was the only Psychology text that included a list of references. None of the participants mentioned citation rules when discussing the two essays despite that the essays did acknowledge using outside sources and did not include a list of references. When they read the literature review, two participants acknowledged an APA style rule (American Psychological Association, 2001), described here by Rob:

There is a technical rule but it's probably met here. I didn't double check it carefully. If I were her professor I would have [made] sure that each of these references was mentioned in the body of the paper. . . . Sometimes you'll get a student who will put down anything that looks like it's relevant even though they haven't read it or haven't cited it in the paper. That's an APA convention. You don't add to your references anything that you haven't cited in the paper. (1: 5555-6074)

Lisa did check each reference in the literature review to confirm it was also in the reference list and she found an error:
I'm not going to check to make sure all of these are actually in. Interviewer: The references? Yeah. Interviewer: Is that something that you would normally do? Yeah, especially for a class that requires a certain number of references be used. List them without using them. They should all be in the paper. Interviewer: Why is that? You only list references that have been used to support your statements in the paper, in the back of the paper. It seems about right. Although I suspect that if I check there may be one or two. Maybe not. I think it's okay. . . . Now you got me curious whether it's actually the case or not. [Lisa starts to check.] I think that all of them are here. Or not. There's one reference that's not listed in the back. (1: 12594-13532)

Jennifer also found a citation error: “This is interesting because Strauss in the paper has two s’s and Strauss in the references has one s” (1: 27420-27521). William told me that when choosing a representative good text for this study, he selected one that correctly cited sources: “The references are correctly cited as well. So you know, that was one of the reasons I selected this [text]” (1: 30066-30167).

Followed grammar and mechanics rules. Correct grammar and punctuation were mentioned by the 4 Psychology participants when reading the essay and literature review. But their perception of the texts’ grammatical correctness and adherence to Standard English conventions differed. William and Rob did not identify any particular errors. They felt that the texts contained few errors in grammar and Standard English conventions.

I've taught the class—this writing-intensive class—long enough that there are some sentences that are not even sentences. They forget to put in a verb. Or there are too many verbs in a sentence. The writing here is a lot better. (William, 1: 12213-12443)

I didn't see any [grammar errors]. Well the [encoding and generalization essay] was really well done. The [literature review] was too. The [schizophrenia essay], there might have been some. . . . No, I didn’t see anything major. (Rob, 1: 34062-34391)
On the other hand, Jennifer and Lisa frequently pointed out errors in the texts. Jennifer corrected sentences. For example, when she discussed the literature review she stated: “Instead of ‘have,’ ‘has’: ‘witnessing has.’ Students miss that a lot. The verb and later clauses” (1: 21200-21296). And she continued finding errors: “Data is plural. The word is plural. So ‘data were gathered about 20 years ago’” (1: 27267-27346). She commented on a punctuation error in the encoding and generalization essay: “Whoops, no comma after ‘rule’” (1: 54987-55016).

Lisa also commented on the errors in the student texts: “The verbs don’t agree” (1: 15490-15111) and “data is plural” (1: 20865-20885). She suggested that students proofread:

Proofreading. Having students read their paper out loud, I think would be huge—would correct like half of the errors in a paper if not all of them. “Based on police arrest from five U.S. cities.” Obviously they would hear that as wrong. (1: 22964-23208)

Grammatical and mechanical correctness for the Psychology participants appeared to be a matter of contrasting tolerance levels or differences in ability to locate errors with Rob and William viewing the texts as adequate and Jennifer and Lisa as error-filled.

Sources of Beliefs About Writing: Psychology Participants

The sources behind the Psychology participants noting particular text characteristics included the following:

a) adherence to traditions and practices of the psychology community,

b) experiences writing in junior high and high school, and

c) observation that students enter unprepared.
Adherence to traditions and practices of the psychology community. The participants discussed their community’s traditions and practices in terms of the *Publication Manual of the American Psychological Association* (APA). They each brought up different aspects of the APA style manual. Out of the 4 participants, only William stated that he regularly teaches APA to undergraduates: "My writing-intensive class is to teach them how to write papers in the APA style (1: 4349-4429). Jennifer critiqued the student texts using APA style rules, however she stated that she does not always teach students APA style because of the time commitment involved in doing so.

Other times, I’m like, okay, I really want them to learn APA format and I really want them to do these things [but] I just cannot teach them to write in APA style in every paper from the very beginning. (1: 43943-44213)

Rob acknowledged the APA style rules and that others in his department emphasize them, but he did not indicate whether he taught it to undergraduates.

We have formalized rules of writing. I don’t know if you’ve talked to [William] yet or not, but in fact he teaches that. The APA manual defines all kinds of rules about professional writing. (Rob, 2: 11127-11313)

To differing extents, the Psychology participants required the student texts to adhere to the complete set of APA style rules. As mentioned earlier, they stated that they wanted in-text citations and the reference lists to follow APA style rules. Yet, they applied the citation style rules to the literature review, not to either essay. They also referred to the APA rules on organization, word choice, and citation format. William described APA style as an appropriate basis for organizing a text:

Organization has to do with the way papers are written in a specified format that is considered to be the way you would be writing journal articles in the American Psychological Association style. So that format is something that students have to be aware of and to know where to put specific bits of information in their paper,
in their research paper. . . . The main point that I try to extract from that big APA manual is that writing is not random in a scientific journal. It has to be organized. Again, it comes back to organization. Information has to be located in a specific region of the paper. (2: 298-3146)

Jennifer brought up several APA rules when discussing the texts: “You rarely have, in APA format, a heading and a subheading without some text. So this is the one place where you could have a one-sentence paragraph” (1: 23989-24133). She also stated:

You only use “since” to mean the passage of time. This is an APA rule. So “since 1979 I ate peanut butter every day” or whatever. Right? You don’t say “since” to mean “because.” (1: 26674-26851)

In addition to the APA style manual as reflecting community practices, several participants noted other community-based traditions. Lisa, William, and Rob associated defining terms with a community tradition. In their explanations, they labeled psychology a science.

I read a whole book on morality and not once have I found a definition for what moral is. That’s all I want to know. How are you defining moral? . . . . If someone is going to build a whole theory or model on something . . . . it’s floating on a house of cards that can tumble down. They have not told me how this attaches to the ground. It’s just based on . . . . intuition and I think that intuitions are good and helpful, but they are not science. . . . Please give me a definition . . . . then I’ll listen to your argument. . . . So I would say especially in psychology it’s important to be very specific. (Lisa, 2: 29353-31325)

Like any other science, we operationalize our constructs. In other words, we have formal operational definitions. We have operational definitions for our constructs. And it’s essential that that be conveyed to the readers because any given construct can have multiple operational definitions. You have to know which one this writer is using. (Rob, 1: 14512-14854)

These are scientific papers. It has to be based on some type of concept. The concept drives the paper, the experimental program. . . . So there’s something that you try to manipulate and then something you observe or you measure. So you’re looking for cause-effect relationships. So your study has to be designed in such a way that you can determine these cause-effect relationships. That’s the key to
understanding science. . . . What is the relationship between this variable X and this variable Y. . . . They have to be defined. (William, 2: 5495-6338)

Lisa, Jennifer, and Rob discussed the writer's point of view in psychology texts in terms of a community tradition. Again, psychology was viewed as a science by Lisa and Jennifer.

Using the word "I" or "we" is probably not good. That's something we try to avoid in papers that review the literature, or just in general scientific papers. . . . First person is really not used . . . so unlike in the literature and humanities, science writing particularly doesn't include the first person narrative. Unless it's a quote or something. In books, people might use the first person, of course. But in journal articles, it's usually avoided. I think developing the skills to learn how to write in the third person and avoid using the first is so useful. (Lisa, 1: 14374-14984)

They use the first person. We don't do that so much in psychology. . . . It's a convention. I think it goes back to . . . the dominant philosophy of science in psychology is that we can know the world and that we can objectively observe the world and objectively know it. (Jennifer, 1: 14642-14928)

It's usually third person. First person is—although it's beginning to occur now in the journals—certainly when I was going through school and writing, you would never do that. Never write in the first person. You're beginning to see some of that now and I think it's a good trend. (Rob, 2: 12976-13262)

The process of learning APA style rules began for Rob and Jennifer when they were undergraduate Psychology majors:

What my major professor would do, and I do the same thing with my students now, is the very first study I was involved in, he said, alright you draft the methods section. Not the whole thing. But you draft one part of the article. He'd critique it in terms of classic APA style. I had a lot of one on one feedback on my professional writing. So that's where I learned kind of the rules. (Rob, 2: 13786-14171)

Writing as a psychologist, I got an introduction as an undergrad. What's the APA format. I also had a one-on-one advisor because I did a directed research as an undergrad so he was very helpful in helping, with one on one attention. (Jennifer, 2: 6127-6360)
Lisa was introduced to the standard experimental research report in high school and built upon that during her college science classes:

The empirical stuff is really formulaic in terms of stating a hypothesis, why it is, the data that you collected... high school science class is where it all started, but certainly developed in college science classes and biology for example. We had to take labs and then write up the experiments in a paper. (2: 1921-2249)

The 4 Psychology participants described meaningful graduate student experiences that contributed to their general growth as writers and to their beliefs about good writing.

I had an advisor who went through a paper of mine and basically said, "Make every word count. Don't waste the reader's time." That is, if it's not saying anything, don't say it. Don't fill pages for the purpose of filling pages. Make sure it actually counts. (Lisa, 1:21050-21338)

We get trained in graduate school to be better writers and in the review process I think we improve as professors. But we didn't set out saying, "I'm going to be a writer," like a novelist does. . . . We don't get training in teaching either. We get less training in teaching than we do in writing because at least in graduate school we get some scaffolded help from our advisors in graduate school and we get feedback from the reviewers. (Jennifer, 2: 4900-5365)

I learned [to include only ideas that contribute to the purpose] in graduate school. We had to write one-page critiques once a week. . . . on like a book chapter. And the instructor was really strict on what we wrote. It had to be very concise writing. And very clear. Almost like an abstract. (Rob, 1: 25337-25579)

Professional writing experiences helped teach the participants their community's expectations for writing. William deliberately submitted his articles to top peer-reviewed psychology journals so that he would receive professional feedback on his writing:

I try to publish in journals that I thought would give me good feedback. And you often find that when you publish in the top journal you get better feedback. So a lot of my publications, when I first started out, I tried to go for the top journals and I often got rejected. But I looked at why I was rejected and improved on it the next time. So then I got better and better. I published more over time. . . . Feedback from other top scientists in the field, and you get that by going to better journals, better publications. (2: 19949-20623)
Jennifer also felt that her writing improved through the peer review process for publications:

Reading the literature, and reviewing the literature, and being reviewed are important steps. If you can read the literature with taking a step back, you can see good writing in the best journals... . The review process, it helps because you have to get succinct and clear. Reviewers can't handle extra stuff. You just have to get to the point. (2: 6920-7604)

Lisa felt that “getting feedback from colleagues” (1: 22371-22403) shaped her as a writer.

Rob agreed and stated that he would ask colleagues for feedback on his drafts (2: 14320-14440).

Three participants commented on the types of professional writing in psychology.

Lisa and Jennifer mentioned a wide variety of genres and purposes while Rob focused on empirically-based reports.

In clinical psychology, the goal of writing might be to assess. To accurately and broadly assess an individual and whatever might be going on with their behavior, personality. For empirical papers, the goal is to write up research. To state a hypothesis, why it’s interesting, why it’s important, and then what you did to address it, how you tested it, and what your results mean... . Not all papers in psychology talk about data. Some talk about the theoretical underpinnings of the brain’s behavior, or someone’s proposed model to explain what’s going on. (Lisa, 2: 550-1185)

In psychology, we write journal articles, we write books, we write encyclopedia entries more and more. Those are like real typical essay formats. We write literature reviews that sometimes get published by themselves. Those don’t have intro, methods, results, discussion. The journal articles that are reporting research have those, intro, methods, results, discussion. (Jennifer, 1: 33857-34226)

That’s kind of the essence of what I would think writing in psychology is all about. It’s not just factual description. It’s more than that almost always. You’re trying to draw some conclusions about behavior. But then it’s got to be supported by empirical data. (Rob, 1: 9722-9986)
Out of the three texts participants selected for this study, only the literature review appeared to fit a type of writing in the professional community.

*Experiences writing in junior high and high school.* Although grammar, coherence, and organization are discussed in the APA style manual, Rob, Jennifer, and Lisa did not associate these text characteristics with APA. Instead, they associated them with their pre-college writing experiences in English classes. They then applied what they had learned when judging their current students’ writing. Rob recalled his senior high school English teacher who taught him how to write compositions that were grammatically correct and contained well-developed paragraphs.

And what our [high school senior English] teacher did—she had friends on the faculty in the English Department at Berkeley and they would give her old Berkeley—you know the entrance exams they gave in English. Every Friday we would take the exam . . . and she just [Rob gestures like someone extensively marking a paper], but it taught me writing. (2: 8219-8849)

Lisa recalled learning to write conclusions in high school that were like a funnel, from narrow to broad and she evaluated the three student texts’ conclusions with that in mind (1: 10350-10510).

Jennifer’s attention to grammar, punctuation, and style came from her middle school experiences. She noted that she disliked a particular phrase in her students’ texts because of an eighth-grade teacher.

[Students will] say, “Because I think this.” And you go, uuaagghh. Takes me back to the eighth grade and the teacher says, “Well, we know that you think this because you're writing it. You’re the author. So you don’t have to tell us that you think it. We know what you think because you wrote it.” So I think of that a lot. (1: 15500-15817)
Observation that students enter unprepared. The Psychology participants shared a similar perception of undergraduate students, particularly their Psychology majors. Their observations of students led them to conclude that contemporary Psychology majors were beginning writers and lacked adequate preparatory experiences in writing.

I've been teaching 40 years. More and more [students] are beginning writers... In general, I would have students better prepared when they came in when I first started teaching [compared to] today. Yeah, that's really clear. I think most of us would agree that that is. (Rob, 2: 7311-7569)

This belief is seen in their comments about assigning students short texts because they are not prepared to do extended writing. After mastering a paragraph or short text, the students could then tackle a longer assignment:

We'll keep it to one page until they can write full paragraphs. Why have them write two and a half pages of papers until they can get two paragraphs right. If they can see how to organize the first few paragraphs, how things are set up, use examples, and practice that, then they will be able to carry it through the whole paper. Otherwise it becomes painful to read and it's a waste of my time. It says the same thing all over again. (Lisa, 1: 8007-8868)

I tend to have them write shorter papers, more shorter papers instead of one or two longer papers... I want them to really learn how to make a couple of points clearly in a short paper. Like in an essay. Interviewer: Why is that important for them to learn? So that they can build on it for other writing, writing longer things. But a lot of them come in and they don't really understand how to write a succinct essay that just makes a couple of points, doesn't ramble all over the place. (Jennifer, 1: 48753-49270)

I think there's a lot of value in writing shorter papers and on a more limited topic. And certainly, if I were working with a student and trying to teach writing, I prefer to work in that model, shorter papers. Interviewer: Do you have a reason for that? I just think that's probably where you should start. If you can write shorter papers well, then it's easier to go to the big one. Rather than start out with writing the rise and fall of the Roman Empire. And me having one semester to get drafts and keep feeding them back. (Rob, 1: 26359-26933)
The Psychology participants commented that they held different expectations for undergraduate majors, graduate school students, and professionals in the psychology field. The Psychology participants doubted that their undergraduate majors could model professional writing. As I interviewed the Psychology participants and this theme appeared across interviews, I asked them about it. For example, William described what he required of his writing and his peer’s writing for it to be good. I then asked about the undergraduates.

[As a professional], you want your research to be part of a big theory or big concept. That’s what you’re trying to do with your research. . . . Interviewer: What can we expect from undergraduates? I try to teach them that idea in the course of writing the papers. But of course what I’m really looking for is how they organize the paper. I’m really looking at that more so than their theoretical or conceptual thinking because I don’t think we can expect that at the undergraduate level. But I think I can get them to start to learn how to organize that paper and how to think about some of these issues. (William, 1: 13413-14916)

Lisa explained that a “little bite size” (2: 22517-22533) assignment can start to prepare students for graduate school or professional psychology writing. For example, she put forth that students can read two articles on opposing sides of an issue and then “take one side and say why you think it’s so” (2: 22583-22627), which is similar to the “simple things that we do in high school” (2: 22632-22671). As a general comment, Jennifer explained that the writing-intensive classes are hard to teach:

It’s very hard to keep up with all this writing and get all these drafts and revisions and try to really help students. It’s very hard and sometimes I just throw up my hands and say which are the ones that are really going to need to write later? It’s tempting because some of them are just, oh what can I do to possibly help this student learn to write? Twenty [students] is too many if you really want to teach them how to write. It’s too many. Oh my gosh. (1: 43274-43746)
Psychology Participants' Perceptions of What Good Student Writing is in the Academy-at-large

The Psychology participants felt that disciplinary influences should not interfere with their ability to understand student writing from across the curriculum. Lisa commented that “there is an objective sense of good writing” (2: 16145-16190) that exists for undergraduates. She continued:

You’re . . . stating a hypothesis in the beginning of the paper and it’s either met or not met. It’s either written well or not well. . . . If you gave me a physics paper . . . written on a low level, I think maybe I could follow it. But I wouldn’t be able to evaluate it for its theoretical ideas. . . . If it were clear, if it made an argument, if it showed evidence for things, I would be able to evaluate, is this a clear argument, does it communicate an idea well. I wouldn’t be able to evaluate whether it is theoretically rigorous. (2: 16137-17081)

Rob explained that undergraduates should be able to communicate to a general audience:

If an undergraduate writes me a paper that I don’t understand, you know, because I’m not in that area, there’s something wrong with the communication. The student ought to be able to explain sufficiently, define enough terms, explain enough concepts that an intelligent lay audience, somebody who is not an expert in that particular discipline, can understand what they are talking about. (2: 10646-11034)

William noted that all fields must have an expected format “because writing cannot be random in their journals” (2: 23780-23830). Jennifer explained:

I think that they might expect a form. . . . Other departments? Well, they don’t have APA style, but I’m sure they expect some kind of essay style. I mean if it’s the Chicago style, MLA style. (2: 7916-8287)

The Psychology participants believed that overarching, common characteristics of writing exist across academic disciplines. However, they acknowledged that the expression of those common characteristics likely vary, as Jennifer noted above. While all disciplines
require a form, that form is different. Jennifer also compared the form in Psychology to
the form in journalism and noted the differences:

The form in psychology, if you read a journal article, is that we tell them what we are
going to tell them, then we tell them, and then we tell them what we told them.
And that may seem a little clunky from say a journalist point of view, but that’s
what we do in psychology. That’s what an abstract is about. Then an intro to an
article. Then the body of the article. Then the conclusion of the article. We, in our
classes, I think we are teaching students to do that. To write in a psychology
format. You could imagine a news article. The newspaper doesn’t have enough
space to repeat everything. Right? They can’t introduce it and tell us what they
are going to tell us in this nice sort of methods statement. (1: 5684-6396)

Rob put forth that both psychology and philosophy logically support a conclusion using
evidence:

[Evidence] is essential in psychological writing. That’s really the key, which
distinguishes psychology from philosophy for example. But even there it’s
evidence . . . We’re using empirical evidence and they might be using—I’m sure
if I were reading a paper from a philosophy class it would be the same thing. I
would want to see at least the logical argument that leads to the conclusion. (1:
16005-16423)

Later, Rob clarified the difference between the type of evidence in psychology and
philosophy:

I suspect that we are a lot more oriented toward drawing a conclusion but basing
it upon empirical evidence. That’s very specific to psychology. Philosophy for
example wouldn’t do that. They would have a different approach. A rationalist
tradition. It would be all logic. In any scientific discipline, though . . . the basis is
the empirical observations which are then interpreted and evaluated under
methodological rules that define that particular discipline. And psychology is
pretty specific in that. (2: 24936-25464)

When the Psychology participants talked about teaching, Rob and William remarked that
their academic community played a role:

I’m always presuming that my role is to teach them to write as psychologists
when I work with majors. It’s not like I’m out teaching someone a creative
writing class, that’s just not what I do. [My feedback to students is] always done
in terms . . . of my view [of] what is traditional or acceptable within the field. (Rob, 2: 27853-28292)

I emphasize that how you write these sentences in an APA style is very different from how you would be writing sentences in the English class. . . . For example, in English, in compositions oftentimes you quote. Take sections from a book and you quote. . . . When I took English we had to critique novels and so you're really trying to understand the interpretation of the author. In science, you don't want to interpret what they are thinking. You want to know what they are thinking. Your writing has to be very clear. You can't leave it so a reader will not understand exactly what you are trying to get across to the reader, trying to make your point. So the writing has to be a little bit more structured I think in the APA format style. (William, 2: 4347-5218)

Jennifer was concerned that students in her classes work with the course materials:

I'm just looking for how they are using the class materials in psychology. So I don't want to see things from other classes, like physics or you know. Some people could try to stretch things. But not as much, not in my classes so much because I ask questions very specifically on the reading I assign . . . I want them to understand that reading and I don't want them to buy it on the Internet. (2: 14006-14434)

Summary and Description of Good Senior-level Writing: Psychology

The text characteristics mentioned in common by the Psychology participants were associated with the focal issue, organization, coherence, definition, evidence and explanation, effective conclusions, citation rules, and grammar rules. The 4 participants were primarily concerned with a text's focal statement and organization. When either of these was not evident, the participants were dissatisfied with the overall quality of the text. Their dissatisfaction stemmed from being unable to understand the writer's message. The other text characteristics were less critical in that one characteristic could go unnoticed or be absent and the participants could still understand the message. The participants' viewed good writing as writing that followed rules to ensure clarity of communication. An announced focal statement, a previewed structure of the body of the
text, and defined terms were seen as enhancing the likelihood that the readers would understand the writer's text.

Although they were looking for similar text characteristics across the genres, the participant's standards were different. The participants did not come to the same overall evaluations of the three texts. Lisa believed all three student texts still needed improvement:

These are the final papers, yeah? These are good first drafts. I'm sure these are like fourth drafts. From where they started I'm sure these represent huge improvements, which I think is good... it's too bad that there's not one level more of revision that [the student] can really say, I produced a good paper that I could have someone read. (1: 33518-33968)

Lisa added that these senior-level writers were not prepared for workplace writing:

Would I send them out into a job that required writing? No. Or at least I would persuade them to go into something else. I think [the writing] is okay. I've seen lots worse. I think we could do better. (1: 41771-41972)

The 3 other Psychology participants also believed the texts could be improved, but they were more satisfied with the quality than Lisa. When asked, William and Jennifer found the writing to be good:

They are good examples. Interviewer: Would you consider any of them exemplary? I thought the schizophrenia one was exemplary for what it was. But that's not a typical paper for use by an actual researcher. It's not an article. It was so short. But it was very well written. So it was exemplary for what it was. (Jennifer, 2: 207-510)

I would be more in favor of the [literature review paper and the 2-hit model, as opposed to the [essay on encoding and generalization]. ... I'm sure it was revised. I could still read it and understand it. But certainly if I had to rank order them, I think the [literature review and schizophrenia essay] I thought were a little bit better papers. Interviewer: Would you be satisfied if all of the psychology majors could write at that level? Oh absolutely. (William, 2: 13197-13611)
Rob found the schizophrenia essay lacking in comparison to the other two texts:

I thought the [schizophrenia essay] was not very good, would not have gotten a very good grade from me. The best one, if I recall, is the [essay on encoding and generalization]. And the [literature review] ... was really quite good. It would not have gotten quite as high a grade as the [encoding and generalization essay], but it was good. ... I think that [the encoding and generalization essay and literature review] represent appropriate skills for an undergraduate here. (Rob, 2: 19101-19984)

In regards to the schizophrenia essay, Rob did not evaluate the organization because

"without knowing the point that the student is trying to make, it's hard to talk about the organization" (1: 15754-15857).

The primary foundations for their beliefs about writing in Psychology included the traditions and practices of their academic community, their experiences with writing as a student and a professional, and their observations of student preparedness for college-level writing. The Psychology participants believed that general characteristics of writing cut across all academic communities (for example, all require a particular form), but that the particular expression of each characteristic varied.
Chapter 5. Findings: Comparisons Across Cases

In the last chapter, I presented findings for the individual cases, Art, Biology, and Psychology. I discussed what constitutes good writing in those fields from the faculty members' perspectives and based on their reactions to three student texts. In this chapter, I discuss the overlap and variation across cases in their descriptions of good student writing and the text characteristics involved in those descriptions. In the last half of the chapter, I highlight commonalities and differences across the three cases regarding the participants' rationale for drawing attention to particular text features.

Overarching Text Characteristics

Three text characteristics emerged in all three cases and were emphasized by the 12 participants (a, b, and c). Three additional characteristics were discussed by 10 of 12 participants (d, e, and f). The participants noted that these characteristics, when present, contributed to their ability to construct a message from the text. The six characteristics were:

a) established a focal issue,
b) set and fulfilled organizational expectations,
c) provided evidence and explanation,
d) created coherence,
e) used unambiguous sentences, and
f) followed grammar and mechanics rules.
Figure 5.1. Overlap of Text Characteristics
Expression of the Shared Text Characteristics

Whether the participants were able to construct a message from the text was important to them as readers. For Art and Psychology participants, the primary text characteristics associated with the message were focal issue and organization. The Biology participants used the word “story” to explain how biological texts communicated a message, and they also indicated the importance of setting and fulfilling organizational expectations. At the paragraph and sentence level, the participants had difficulty constructing a message if the text did not create coherence, used ambiguous sentences, and failed to follow grammar and mechanics rules.

*Indicate the message through a focal issue.* First, I briefly explain how the expression of the focal issue varied by genre. The primary way to establish the focal issue was through a single sentence. The participants expected a thesis statement or a question in the essays, artist’s manifesto, interpretive study, review of an issue, and review of the literature. With the lab reports, a hypothesis was expected. Deviations from their expectations drew comments. For example, the student writer of the literature review stated, “I hypothesize that witnessing domestic violence will have a negative impact on children’s behavioral, emotional, cognitive, and long-term developmental functioning” (Text P3, p. 1). Two of the Psychology participants noted the inappropriateness of the
word “hypothesis” because of the genre: “It’s not a hypothesis. They are reviewing some literature (Jennifer, 1: 32410-32469); “It just doesn’t fit with this paper. Literature suggests that, but ‘hypothesize’ makes me think that they are actually going to design a study and I don’t see that” (Lisa, 1: 15286-15450). These Psychology participants believed, as did the Biology participants, that hypotheses signaled that the writer had conducted an empirical study.

The Art and Psychology participants could construct the writer’s message if they could identify a focal issue and if organizational expectations were fulfilled. The Art participants wanted the text to convey an appropriate “big message.” Dave (Art) believed how the message was delivered depended on the audience, but in all writing he was interested in having the writer convey a message to the reader.

If you’re trying to communicate with a hip-hop clientele, you write differently than if you’re trying to communicate with something opposite . . . a Renaissance art clientele. But to me, it’s the bottom line that’s important: what message gets across, what message gets communicated. (Dave, Art, 2: 27890-28182)

For Joe, the “big idea” was a theme in his interviews. He stressed that in writing, and in other activities, he returned to the notion that the audience should leave understanding the big idea.

The way that I approach putting anything together, whether it’s something for myself or whether it’s an exhibition, I always go back to what is the big idea, what am I trying to express, what do the people need to get out of this, what is the message that needs to be conveyed. When I go back to helping students with writing, that’s what I try to do. (Joe, Art, 2: 23457-23808)

Mark and Tracy emphasized that an appropriate message for academic writing should involve, explicitly or implicitly, a question or contestable issue.
If we’re talking about any kind of academic writing or expository writing, it needs to be about something and . . . preferably address a particular question and then everything else kind of falls into place behind that and then it’s interesting to read. Otherwise it’s a kind of collection of observations or descriptions or I don’t know what else. But it just doesn’t add up to anything. (Mark, Art, 2: 2855-3313)

In explaining argumentative, academic writing, Tracy (Art) stated:

Your main point has to be not only clear, but also significant. Significant in as much as a reasonable person might disagree with it and as much as it’s contestable and as much as it might be considered worth contesting. Interviewer: Why is that important? Because otherwise there’s no reason to write the paper. If the basic goal of argumentative writing is to persuade, there’s no point in adopting as your point, an assertion which with no one can disagree. If your point is Shakespeare was an Englishman, then you’re writing an encyclopedia entry. (1: 4707-5256)

The 4 Psychology participants reacted positively to thesis statements that were explicitly stated. They wanted the text to have a message, but they did not emphasize a “big idea” or significant issue as did the Art and Biology participants. Lisa (Psychology) mentioned that students should be “thinking about the broad goals . . . [asking] ‘what is my goal in this paper?’” (2: 3071-3137). Rob (Psychology) stated, when reading the essay on schizophrenia, that he did not know what the student writer was trying to do (1: 12325-12917). I directly asked Rob how he would approach the student and he responded:

[I’d] say, “Okay, start off with what it is that you want to accomplish in this paper. Then do it.” . . . Maybe I’m just impatient. But you know what I do when I’m going over writing and having revisions and so on, I reach a point where it’s not worth my time. It’s not far enough along for me to do the more sophisticated things that I normally do. So I will say, “Okay, do this much and turn it back to me and we’ll go on from there.” (1: 17112-17933)
However, Lisa's and Rob's comments appeared subordinate to a general concern by the Psychology participants that the student writers explicitly state the text's main point in the introduction.

If your paper doesn't have a point to begin with, you have a problem. So then we have to teach them to write a point, thesis statement, a methods statement. So we do that. (Jennifer, Psychology, 1: 32915-33086)

The Psychology participants independently noted that texts should have a clear focal issue.

Tell us what is going to be talked about in the beginning. (Rob, Psychology, 1: 1555-1613)

You start off by telling us what the paper is all about. (William, Psychology, 1: 1067-1122)

I really like to see them write introductions with thesis statements. I like to know where the paper's going. I really expect that. (Jennifer, Psychology, 2: 4312-4443)

Orient the reader to what the rest of that paper is going to be talking about. (Lisa, Psychology, 2: 27198-27275)

Lisa (Psychology) provided an example of how a text directly states its focus:

If you're going to be talking about emotions in a paper, don't start off talking about relationships. If you're going to start talking about relationships, make sure that very quickly it filters down to emotions within relationships. Now I know that I'm not reading about all emotions, but emotions within relationships. (2: 27277-27597)

Jennifer (Psychology), like Tracy and Mark (Art), also discussed writing in terms of argument and preferred texts that addressed "something that can be questioned... something debatable where there's a counter argument" (2: 10730-11709). However, she stated that she required that only "from the grad students. For the undergrads, they don't
always have arguments . . . I want them to definitely have . . . a thesis statement” (2: 11752-11947).

Unlike the 4 Biology participants who wanted to see the focal statement justified and placed in context, only 1 Psychology participant noted that a text should “give us some background, give us the rationale” (William, Psychology, 2: 7146-7270). The other Psychology participants did not mention that aspect.

Overall, the expression and location of the focal statement differed across cases and genres, although all participants wanted the scope of the text delineated in the introductory paragraphs. The Art participants felt the focal statement could appear in the conclusion of an essay. They believed a good focal issue should involve more than description or observation; a contestable or complex issue was preferred. The Biology participants specified different types of focal statements depending on the genre. Lab reports, for example, should contain hypotheses. The focal statement in Biology texts should be justified and its significance explained. Psychology participants preferred an assertion or thesis statement in the first paragraph.

*Academic story-telling to communicate a message*. In the case of Biology, 3 participants referred to telling a “story” as a way to communicate the message to the reader. The message to be communicated was considered good when the writer convinced the reader of the importance of the text’s focal issue. The participants looked for significance, justification, and rationale in both the review of introduced fish species and the two lab reports.

Even in science you have to tell a story. . . . Whatever it is that interests you enough to want to go out and conduct that experiment, you have to convey that in
your paper. Why was it relevant? Why was it important? Why did you want to do it? Who would care? What’s the background behind it? What did you read in the literature that convinced you that this needed to be done, or that made sense in the context of what’s already been published? All that kind of stuff has to be included in there. Essentially to back up and justify why it is you did what you did. (Karen, Biology, 18146-18795)

Each of these papers has got to tell some story. It’s not just reporting something... A gauge of whether you’ve got something is whether you have a story... If someone is testing a hypothesis, that’s what’s really going to catch your attention because it’s a mystery. Which way is this thing going to work out? Who is guilty? If you detect that going on in a thesis or a paper, you are drawn into it.

**Interviewer:** how do you know if a story is interesting or not? Because you know that other people will find a general lesson in that... Given your understanding of what’s in the literature, you’re saying to people, “Here’s evidence, here’s another factor to consider that could influence your conclusion about what you saw. If you haven’t considered this possibility, it could alter your work and conclusions.” (Mike, Biology, 1: 11697-17956)

I think maybe to be able to tell a story. You know, because that is what your research is, almost like a detective story. What is the question? What are the truths that you look for in your experiment? And then how do you solve that particular question? You can make it sound like... a story in the paper. I think that’s what makes an interesting paper, interesting. That there is this story that people can tell. You know, sort of the background, the experiments that you did do, find out one particular aspect of that, what did you find, and how does that fit into the puzzle. So I think yeah, in a really good paper, it reads well because it’s like you’re reading a story. (Chris, Biology, 2: 20833-21522)

Another aspect that Biology participants mentioned was providing the reader with a review of current knowledge and statements of how the focal issue fit within what is currently known. The participants commented on this with both the review and the lab reports. Sarah said that the writer of the sea urchin lab report “set the stage for what [the] experiment is going to be” (1: 23398-29451). I asked how the writer did that and Sarah responded:

She tells us what... the subject of interest [is], which is very narrow. Then she tells us that there are a couple of ideas [in the literature] about how these events
are triggered and what the chemical mechanisms are, and then she raises a specific question. (1: 31432-31669)

Chris also explained that the opening section of a good text “reviews the relevant experiment in the field . . . [and] sets up the problem that they are going to investigate” (1: 1669-1773).

In addition, the Biology participants commented positively when reading statements in the lab reports about “why they are writing about this subject” (Sarah, 2: 6154-6195) and in the review of introduced fish species when the writer provided a “good rationale in the first paragraph” (Karen, 1: 626-663). In comparison to the Art participants who appeared to make similar comments, the Biology participants stressed the need for the writer to explain how the text’s focal issue fit within the larger body of knowledge related to that area. None of the Art participants mentioned that aspect of the focal issue.

*Differences in setting and fulfilling organizational expectations.* The second characteristic, mentioned by 12 participants, that appeared related to the participants’ ability to construct a message was setting and fulfilling organizational expectations. When reading genres that did not have a pre-determined organizational format, such as the essay or review of the literature, 4 Art and 4 Biology participants used the word “logical” to describe a well-organized text.

It’s well organized. It reads sequentially. Not like this paragraph should have been up first and that kind of thing. *Interviewer: How would you describe the organization?* Logical. A B C D . . . . Sequentially logical. (Dave, Art, 1: 15422-15843)
I didn’t ever wonder about jumps in logic which often happens in papers where you read one paragraph and suddenly the next paragraph is talking about something else and there’s no connecting link. (Mark, Art, 1: 402-597)

I find that this one here has a kind of continuity to it. . . . It’s very logical. . . . For me, student writing should move from one idea to the other and come to a conclusion. (Joe, Art, 1: 17218-17983)

That’s logical, I think. He’s got this organized in way that you or I didn’t find it difficult to follow what he was doing. It was in a logical organization or flow. (Karen, Biology, 1: 14221-14386)

Sarah and Chris (Biology) explained the suggestions they gave to their students to help create a logical organization in absence of a pre-determined structure found in lab reports. They believed the student should still think of the text in sections even when section headings are not used.

My emphasis is really more on getting the student to think of the paper in sections that follow logically, one from the other, and that would allow someone who knows little or nothing about the topic, to read and follow it easily. . . . I don’t quite ask them to use the format of a scientific paper that reports original results, but I do want a paper that has definite sections and the paper has structure. (Sarah, Biology, 2: 2303-2867)

You have some thought that they are discussing or some issue they are discussing that flows and there’s a logical end to that. . . . Interviewer: How does the student create the logic? I think by making an outline. . . . So I think if you make an outline of what you want to talk about, step by step, that creates a better flow. (Chris, Biology, 2: 13185-14656)

Only 1 Psychology participant mentioned “logical”:

I’m kind of thinking ahead, following the logical argument and kind of anticipating what the next point is likely to be. If it’s not even in the ballpark, that probably jars me a little bit. . . . [Logic] is one of those things that I know it when I see it. Or, more importantly, I know it’s not there when I don’t see it. (Rob, Psychology, 2: 4783-5210)
Rob and the other Psychology participants felt that good student writing had an organizational structure in which the writer previewed the content, discussed that content, and then summarized:

You want to organize it. You start off by telling us what the paper is all about.... And then go into it and try to break it down as [deeply] as possible. And then have a final paragraph that summarizes the main themes of the paper. (William, Psychology, 1: 1042-1408)

Tell people what they are going to hear, tell them—say what you’re going to say—and then tell them what you said. (Lisa, Psychology, 2: 18606-18722)

We tell them what we are going to tell them, then we tell them, and then we tell them what we told them. (Jennifer, Psychology, 1: 5747-5850)

Tell them what you’re going to say, say it, and tell them what you said. (Rob, Psychology, 2: 3824-3895)

How a text set and fulfilled organizational expectations differed across cases and genres. The lab reports were judged on their adherence to a pre-set structure. The Art and Biology participants relied on their understanding of logical order. Unlike the Psychology participants, they did not mention that good student writing previews the content and organizational structure in the introductory section. The Psychology participants emphasized that structure with both the essays and the review of the literature. When participants’ organizational expectations were met and were appropriate to the established focal issue, the participants were able to identify the writer’s primary point and purpose.

Similarities in creating coherence. Four Psychology participants and 3 participants in Art and Biology brought up paragraphing and using transition statements, which were categorized under created coherence. These 10 participants’ comments
mirrored each other. They desired paragraphs that contained a single idea and expected such in the various genres they read.

In a single paragraph... connecting logic leading from sentence to sentence across one thought. This really seemed to be coherent and written very clearly. (Mark, Art, 1: 601-755)

On the first page we have 1, 2, 3, 4 paragraphs. Some of which have only a single sentence actually and these paragraphs are not starting entirely new topics. They are continuations of the previous ones, so I think they could have been combined into fewer. . . . I keep each paragraph about an idea or topic or something like that, and if you change paragraphs you’re switching gears a little bit. You might be continuing on, of course, with what you’re talking about but you’re sort of putting a new angle on it, or going to a different part of the problem. (Karen, Biology, 1: 8590-9295)

Paragraphs with seemingly unrelated sentences were pointed out as negatively affecting the reader.

[The student wrote:] “There was the blues from the cotton fields, and there is Blues Traveler. There was rock and roll and there is the classic rock station.” These sentences seem somehow unattached. (Dave, Art, 1: 3175-3354)

The connectivity between the sentence “Scowcroft & Wood found the seedlings” and ending with “breaking the dormancy of the koa seeds” and then the next sentence is “We used the density and girth of koas growing on a burned mountain as an indicator of the progress.” There’s no connectivity between those particular sentences. (Chris, Biology, 1: 16622-16948)

I have found that I will like the way a certain paragraph is reading and then all of a sudden I will... hesitate. I’ll start the next sentence and... it didn’t flow in smoothly. It didn’t tie in the right ideas. (Lisa, Psychology, 1: 13702-13947)

When the writer was moving to a new angle or different part of the problem and used transition statements, Jennifer (Psychology) also reacted positively.

So she says, “similar findings resulted from another kind of problem” so it’s a nice transition. We know now that we’re getting into another kind of problem. (1: 56005-56166)
Similarities in providing evidence and explanation. All 12 participants reacted positively when the student writers supported claims with evidence and also explained that evidence. There was little difference in how the participants across the cases discussed evidence and explanation. In all three cases, they looked for both a sufficient amount of evidence to support claims and adequate explanations or development of that evidence. The participants did not highlight differences across genres and expected all types of writing to contain evidence. When the participants’ expectations were not met, they pointed out how a section could be improved. In some instances, the explanation needed to show how the evidence served as support for the writer’s message. Participants typically wanted more information.

[The writer includes] the question of Andres Serrano’s piece, which is called Piss Christ unfortunately, and the very famous controversy that erupted around that. Robert Mapplethorpe, Ron Athey—I don’t know his work at all. These examples are not entirely very thoroughly explicated. The author here is not saying anything explaining how Mapplethorpe would be offensive to some people. . . . [The author] invokes Marcel Duchamp. . . . He hasn’t explained the circumstances under which Duchamp’s piece—or any of his ready-mades—were made. (Tracy, Art, 1: 28571-29679)

He or she is reporting on like an experiment [about predator fish]. So the interpretation of the experiment could be a lot more interesting. Could be developed more. . . . If you have introduced predators, do they suppress the native predators? . . . The [student] skinned over questions and issues like that and they could have dug in deeper. (Mike, Biology, 1: 31650-32064)

Some studies found the effect, where as others found no differences on these measures. The [writer] just leave[s] it like that. Why? What’s going on? Are there no differences? Who should I believe? If they are going to provide a reference and provide information that there’s conflicting information using the same measures, then I want to know. Otherwise don’t talk about it. If you are going to mention that there are differences, you have to go into why. (Lisa, Psychology, 1: 27824-28273)
Despite comments such as these, the participants were satisfied. In all texts except the artist's manifesto (Art) and the lab report on plant succession (Biology), the student texts were seen as providing adequate support for each point made by the student writer. The accumulation of evidence was a factor in whether the participant was convinced of the writer's message. The 4 Biology participants also stressed the need for the sources used as evidence to be from primary sources and recent. Only 2 Art participants and 1 Psychology participant mentioned the validity and reliability of the outside sources.

There appeared to be no difference in the participants' reactions to the evidence based on the genre. None of their comments indicated that a particular genre would cause them to respond differently than they did with these texts. Overall, the 12 participants discussed evidence and explanation in a similar fashion.

**Similarities in using unambiguous sentences.** Four Biology participants and 3 participants in Art and Psychology commented on whether individual sentences were clear and unambiguous. Across the three cases, the participants had similar reactions to unambiguous and ambiguous sentences. Sentences perceived as clearly articulated were praised.

What I’m concerned about is the level of mastery of written language that enables them to say what they mean without ambiguity. That’s what this writer has. I’m thinking of this sentence, “In addition to recalling the past and expressing the present life of Zou Fulei, the plum branch also shows Zou’s hope for and confidence in the return of peace and stable rule in the future.” . . . It expresses it so clearly. It all comes through. (Tracy, Art, 1: 3286-3847)

[I like] the kind of reading where you go through it and you know exactly what they meant. You aren’t wondering which interpretation of the sentence you should use to come to the same conclusion that they did. (Karen, Biology, 2: 15227-15427)
When sentences were ambiguous, participants tried to puzzle out the writer’s intent.

[The student wrote.] “The academy is a system of students, who try to buy intelligence, being put into contact with professors, who try to sell intelligence” . . . I don’t know what he’s really intending there. . . . Let’s see. Let me read it. “The academy is a system of students, who try to buy intelligence” . . . and after this contact with their professors, try to sell that intelligence. I think that’s what he’s trying to say. (Dave, Art, 1: 5408-6045)

The second sentence is not a clearly written sentence. When they start off with “they focus,” what are you referring to? The information processing theory? . . . Is that what they are saying or is “they” something else? That’s why I find it hard to understand, to decode what they are saying. (William, Psychology, 1: 8599-9604)

Their final evaluation of the sentence hinged on whether their efforts to interpret the meaning were perceived as successful. The participants were more likely to be dismissive of the ambiguity if they could figure out the intended meaning.

[The student wrote.] “In this study we used the Shannon-Weiner diversity index, which Pielou found it was the most appropriate indicator for large collections from which a random sample can be drawn, but which includes an unknown number of species.” I mean, I know what the elements are in there, but it’s just awkwardly stated. That’s not a big deal. (Sarah, Biology, 1: 58809-59141)

The very first sentence: “The purpose of the paper is to review research on the prevalence of children witnessing violence and to gain a better understanding about the impact of witnessing on children.” I got really hung up on “impact of witnessing.” . . . I’m trying to think of how I would say it better. About the impact for children’s development? Or about . . . the prevalence of children witnessing violence and to gain a better understanding of? . . . It’s probably alright. (Jennifer, Psychology, 1: 18687-19186)

The participants discussed ambiguous sentences in similar ways and expected sentence-level clarity in all genres.

Differences in following grammar and mechanics rules. Ten of the 12 participants, 4 in Psychology and 3 in Biology and Art, commented on grammar and mechanics. Following rules was deemed important because of the impression made on
the reader and because it aids the reader in constructing a message. However, for 1 Biology participant and 3 Art participants, content-related issues overshadowed concerns of correctness.

The 4 Psychology participants appeared the most concerned with the student writers' abilities to follow grammar and mechanics rules. They believed that following rules was important. Lisa and Jennifer (Psychology) made the most comments regarding grammatical correctness and mechanics of writing compared to the other 10 participants. Jennifer also stated that she addressed correctness in the classroom with her students: “I am trying to teach them grammar and punctuation and these things. Definitely” (1: 16889-16969). Lisa explained why student texts should be correct:

It is very important to have correct grammar. Students in other countries are learning English and can write circles around native English speakers. It’s embarrassing. Embarrassing. So I think it’s important because correct grammar... ensures that you have better communication. I think if anything, the impression it gives off, the air it gives off is one of “I care about doing something well and correctly.” (2: 25603-26017)

Both Rob and William (Psychology) declared that entering college students were not prepared to write grammatically and follow the rules. Rob compared today’s students to those he taught many years ago and concluded that previous students followed grammar and mechanics rules more than today’s students (2: 7311-7753). Likewise, William stated:

I think [incoming students] should have had a little more experience writing. And at least, you know, English grammar. Sometimes I have to go over... writing sentences in English. I mean, it’s English words but somehow... where you start the sentence to where you end up at the very end, sometimes it’s not the same. It is... a problem. (2: 32296-32716)
The Biology participants were similar to the Psychology participants in that three of them checked whether students were following rules for grammar and mechanics. Two Biology participants noted that meaning can be obscured by poor grammar and mechanics.

There are a few places where the grammar makes things a little bit unclear. (Sarah, Biology, 1: 397-472)

An important thing to me when I’m reading a paper is that it’s easy to read. That I’m not getting tangled up. . . . It’s too easy to get tangled up in bad grammar. (Karen, Biology, 1: 42107-42346)

However, Mike (Biology) emphasized content over correctness.

When I’m looking at a paper, I’m interested in the clarity. You know, getting the ideas across. . . . I’m not as focused [on] and I’m not as good at some of the details of good English. Although when I’ve got the paper in front of me that might be a concern. In thinking about the paper and talking to the student I tend to emphasize where they are going with the content. (2: 640-1351)

On a similar note, the 3 Art participants who mentioned grammar and mechanics placed it second to content-related issues. In the first interview, Dave (Art) stated: “For my purpose of using writing in my classes, I’m primarily concerned with content. Okay. Because the class is writing intensive, I’m obligated to correct things” (1: 247-412). He later explained, “I don’t think it’s fair to punish someone for poor writing, the grammatical side, structure, et cetera” (2: 3776-3873). Joe and Tracy (Art) stated that they were more concerned with the content and whether a message was communicated.

If it’s [an undergraduate student] paper, I don’t usually deal with it much, grammar. . . . If it’s sort of minor things, I might help them, but a lot of times I make them work with the content, what are they trying to say. (Joe, Art, 1: 8066-8497)
It's a question of being able to say what you actually mean and to a lesser extent using the mechanics of the English language and that gets back to things like noun agreement. (Tracy, Art, 2: 4140-4319)

The issue of whether a text followed grammar and mechanics rules was discussed differently. Four Psychology participants and 2 Biology participants noted their attention to correct grammar and mechanics while 1 Biology participant and 3 Art participants commented that they weighted it less heavily than the content and message.

Summary: overarching text features. The participants wanted to construct meaning from the student texts. The text characteristics that related to the text’s message and that cut across cases included establishing a focal issue, setting and fulfilling organizational expectations, providing evidence and explanation, creating coherence, using unambiguous sentences, and following grammar and mechanics rules. The manifestation of several characteristics varied across cases and/or genres: focal issue, organization, grammar and mechanics. (Table 5.1 summarizes whether the cases’ descriptions of the text characteristics were similar or different.)

Table 5.1 Similar or Different Expression of Text Characteristics Across Cases

<table>
<thead>
<tr>
<th>Text Characteristic</th>
<th>Descriptions were similar or different across cases</th>
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<tbody>
<tr>
<td>Established a focal issue</td>
<td>Different</td>
</tr>
<tr>
<td>Set and fulfilled organizational expectations</td>
<td>Different</td>
</tr>
<tr>
<td>Created coherence</td>
<td>Similar</td>
</tr>
<tr>
<td>Provided evidence and explanation</td>
<td>Similar</td>
</tr>
<tr>
<td>Used unambiguous sentences</td>
<td>Similar</td>
</tr>
<tr>
<td>Followed grammar and mechanics rules</td>
<td>Different</td>
</tr>
</tbody>
</table>
The ability of the participants to identify the writer's overall message was dependent primarily on the focal statement and organization. Art and Psychology participants described these two text characteristics differently. The Biology participants used the word *story* to explain how a writer could convey a message.

**Text Characteristics Discussed by Two of Three Cases**

*Biology and Art*

Biology and Art overlapped in two additional areas: complex content and student writer's opinion or stance. Only 1 Psychology participant mentioned complex content and none mentioned student opinion or stance. (See Figure 5.1 for a display of which text characteristics overlapped the cases.)

All 8 Art and Biology participants attended to the quality of the content generated by the student writers. They commented positively on complex content, which included the writer discussing difficult concepts, putting forth insightful ideas, doing more than repeating others' ideas, and stating more than commonplace ideas. They looked for such content in the different genres they read. The 8 Art and Biology participants believed that one aspect of good writing was the student writers voicing their stances or opinions. They wanted to read the students' ideas, hypotheses, and observations, and they tried to encourage students to include their observations and stances in their texts. The Art participants found examples in the essay on beauty in art and the artist's manifesto (only 1 participant noted this characteristic with the interpretive study of the Chinese scroll). The Biology participants mentioned this characteristic when they read the review of introduced fish species, but not the lab reports. However, in the second interview with
me, the Biology participants brought it up in relation to analyzing experimental results and designing lab experiments.

Sometimes what the students are thinking is, “Tell me what I need to know, tell me what you want me to do.” I probably tend to make things too open ended. We’ve led you to this point. You’ve seen this phenomenon. Now you tell us about what’s going on. (Mike, Biology, 2: 9750-10003)

[I tell the student] you have an observation, can you come up with a hypothesis that we can test in the lab? So really try to push them to do their own thinking. (Chris, Biology, 2: 10975-11114)

One Art participant (Dave) and 1 Biology participant (Sarah) commented on the difficulties students have putting forth their own observations and ideas.

The thing hardest to get out of my students is for them to stand up for themselves. To understand that they have convictions, to recognize what those are and to use them as an empowering tool in their authorship. (Dave, Art, 1: 42500-42712)

She thinks that her opinion is worth stating here. I like students to be self confident. It’s not an easy thing for a lot of students. . . They don’t have a really high level of self esteem so often and I think that’s an important thing to try to encourage in students. (Sarah, Biology, 1: 13756-14043)

The Art and Biology participants felt that the complex content and student opinion/stance were a result of student writers spending time thinking. The 4 Art participants appreciated the texts that conveyed the impression that the student writers had devoted time to thinking.

It’s not just the act of writing. It’s the act of thinking about it. Taking enough time to really sit back and take your task seriously. . . . Unless they sit and think about that a lot, even before they write it, they are not going to do a good job. (Dave, Art, 2: 5540-6180)

Somebody dealing honestly with the material that they are talking about and not trying to fake it, not trying to put one over on you, not trying to finesse something. That they haven’t thought it through well enough and they’re trying to fudge. (Mark, Art, 2: 28347-28591)
When Tracy (Art) doubted whether the student writer had spent time thinking about the content, she took note of it:

You can’t tell whether it’s like a trick shot that happened to hit home or whether it reflects actual deep understanding. . . . From a pedagogical point of view, that’s what I object to. . . . the fact that I can’t tell whether this is a clever aside by a student who spent a lot of time thinking about these issues or whether it just happens to be a felicitous image and the student hasn’t really thought about it. Maybe that’s why I don’t trust it that well. (1: 50889-51370)

Joe (Art) pushed his students to think about the content by giving certain writing tasks.

I sometimes ask a question [such as] . . . supposing your friend comes to you and says okay you’ve just taken this course in Islamic art, [write] three pages on the art of Islam [using] three photos. Interviewer: Why do you like those type of questions? Because they really make you think. (2: 24072-24551)

The Biology participants made similar comments about the student thinking that became apparent to them as they read good student texts. Chris (Biology) praised a text because it showed the student writer was “quite advanced in [his] thinking about this whole problem” (1: 13963-14021). Sarah (Biology) also praised the same text:

A good discussion of results. And the discussion is interesting because they didn’t find what they expected to find. Whenever that happens in a scientific study, you have to think really hard about why that might be. (1: 38126-38342)

Mike and Karen (Biology) described the desired cognitive activities when students appropriately engaged with library or Internet sources:

I prefer that they went to the primary literature and arrived at their own sense of organization of the material in the literature. That’s where the work is. That’s where your mind has to do this mental gymnastics to sort through the information and make sense of it. . . . Yeah, that’s the thinking. (Karen, Biology, 2: 22769-23095)

The [student] has got to have fairly good understanding of what people have done before and be able to integrate all this stuff and relate it to what they are doing. . . . You have to turn it over in your head and think of alternatives and stuff. It’s
Biology and Psychology

Biology and Psychology overlapped in one area: rules for citing sources. The 8 Biology and Psychology participants paid attention to whether the text followed the rules for citing sources, but the Art participants did not. Biology and Psychology participants made general comments about citations and also pointed out errors.

You need to acknowledge where you are getting your information from, in any kind of writing, I think. (Karen, Biology, 2: 3962-4063)

There’s a website here. She could have given a date that she last visited the website. (Sarah, Biology, 1: 18051-18136)

There’s one reference that’s not listed in the back. (Lisa, Psychology, 1: 13478-13530)

The Gelles survey is not cited. (Jennifer, Psychology, 1: 28368-28399)

As stated in chapter 4, the Biology participants mentioned citation rules when discussing the review of introduced fish species and the Psychology participants when discussing the literature review on domestic violence. Neither group appeared to consistently apply issues related to citing sources to all texts even though library and Internet sources were included in all of them.

To recap, Art and Biology brought up two characteristics that were not mentioned by Psychology participants in regards to senior-level writing: contained complex content and voiced the student writer’s opinion or stance. Biology and Psychology participants were concerned whether citation rules were followed in one of their three texts, but the Art participants did not emphasize this characteristic.
Each case had at least one text characteristic its participants referenced that was not emphasized by participants in the other cases (see Table 5.2 below and Figure 5.1 at the beginning of this chapter). I discussed these characteristics in chapter 4.

Table 5.2. Text Characteristics Emphasized by a Single Case

<table>
<thead>
<tr>
<th>Case</th>
<th>Text characteristic(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>• Included poetic phrases and/or rhythm</td>
</tr>
<tr>
<td></td>
<td>• Interested the reader</td>
</tr>
<tr>
<td>Biology</td>
<td>• Contextualized problem or issue</td>
</tr>
<tr>
<td></td>
<td>• Chose reliable and valid sources</td>
</tr>
<tr>
<td></td>
<td>• Described methods in methods section</td>
</tr>
<tr>
<td></td>
<td>• Presented results in results section</td>
</tr>
<tr>
<td></td>
<td>• Incorporated data displays</td>
</tr>
<tr>
<td></td>
<td>• Avoided wordiness</td>
</tr>
<tr>
<td></td>
<td>• Chose precise words</td>
</tr>
<tr>
<td>Psychology</td>
<td>• Defined terms</td>
</tr>
<tr>
<td></td>
<td>• Concluded effectively</td>
</tr>
</tbody>
</table>

Some characteristics were found only with a particular genre specific to a professional community. Biology participants, for example, noted that methods and results were tied to the lab report and that data displays were a typical way for writers to present experimental results. The Art participants brought up poetic phrases and/or rhythm frequently with the artist's manifesto but less with the essay and interpretive study. Because the artist's manifesto is meant to be expressive and written by the artist to explain his or her artwork, poetic phrases and rhythm might be seen as going hand-in-
hand with the genre. Psychology participants did not specify genres when they noted that texts should conclude effectively.

The participants appeared to place different weight on the text characteristics. For example, Psychology participants mentioned defined terms with the essays, but with one in particular and not with the literature review. Participants in Biology emphasized that texts should contextualize the issues and use reliable and valid sources; to a lesser extent, they noted concise writing and precise word choice.

Sources of Participants' Beliefs About Writing

In addition to explaining what text characteristics were important to them as they read the student texts, the participants described their rationale and why they held certain beliefs about writing (these were discussed in chapter 4). In this section I compare the sources of their beliefs. The participants' comments fell into two general categories: a) academic or professional community experiences and b) personal experiences. (Table 5.3 lists the sources in each case.) Academic community experiences include comments directly related to their academic or professional community: values attributed to the community, traditions of research, genres, publishing requirements, conceptions of audience, and graduate school experiences. The personal experience category includes their observations about students as well as writing experiences that they did not associate with their current academic or professional community.
Table 5.3. Sources of Beliefs About Writing

<table>
<thead>
<tr>
<th>Source</th>
<th>Art</th>
<th>Biol.</th>
<th>Psych.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Community</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditions and practices of their academic community</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Conception of the intended audience</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Graduate school experiences related to their academic community</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td><strong>Personal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation of a writing-thinking connection</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation of a reading-writing connection</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philosophy that college should teach widely-applicable writing skills</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation that seniors are capable of imitating professional genres</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation that students enter unprepared to meet the demands of college-level writing</td>
<td></td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Experiences with writing in junior high and high school</td>
<td></td>
<td></td>
<td>YES</td>
</tr>
</tbody>
</table>

*Academic Community Experiences*

*Traditions and practices of the academic community.* All 12 participants’ experiences within their academic or professional community influenced their beliefs about writing. However, each case aligned on different aspects. The 4 participants in Art discussed how individuality and uniqueness are valued by members of the art community. They also discussed how writing in the art community is used to explicate personal standpoints and concepts behind the artwork.

I probably have students write even if the course is not writing intensive. There’s a certain part of the [artist’s] content and organizing concepts, to be able to present them and explain them to me or someone else that is very much a part of art, art criticism, understanding yourself, that kind of thing. (Dave, Art, 2: 861-1159)
If you’re going to be an artist in the contemporary world . . . you need to be able to articulate a few things. One is the idea behind your work. (Tracy, Art, 1: 55644-55817)

In addition, the Art participants referenced pieces of writing they completed as part of their professional lives such as grants, gallery exhibit texts, and scholarly articles. The Art participants used these pieces of writing to illustrate that writing needs to communicate a message and that the audience needs to be taken into consideration. They did not emphasize specific rules for publication, particular journals, or a style guide manual.

The 4 Biology participants valued the scientific method that is reflected in their community’s genres and publication practices. For example, they discussed why scientists want to know others’ experimental methods and why results are presented separately from the interpretation of those results. The rationale was translated into the biology community’s expectations for the organizational format of reports of experimental research (known to students as lab reports).

The Biology participants discussed the limited space available in journals and how that affected written texts. Because biologists may want to examine another biologist’s data, in-article tables summarize and appendices provide full data sets.

You have a particular result, and you have to present that in the most effective way. Either as a table or a figure or both . . . . When you’re writing for a journal, especially, again there’s an issue of space. You know, you write for something like Science or Nature, you have three pages. That includes figures, references, everything. So you really summarize. You know, have the most effective way to summarize your data. (Chris, Biology, 2: 7152-8057)

This [table in the student text] would be appropriate for an appendix. . . . Because an appendix is an opportunity to present the data from which you distilled out the paper’s tables or figures. . . . What is happening now in journals like Science, we
can deposit the data with them and so you can read the information in the paper but then online you can go to *Science* journal and you can look at the underlying data from which the tables and figures came from. (Mike, Biology, 1: 22422-22957)

The participants identified conciseness as another text characteristic affected by the space issue in journals.

The 4 Psychology participants identified, as a source, the community’s publication style manual, the *Publication Manual of the American Psychological Association*. The participants stressed that they wanted students to learn APA style as well as a few traditional rules.

I would like them to learn APA style so that they know that. They need to learn how to write an APA abstract. Depending on the journal, they are usually a hundred to 150 words. (Jennifer, Psychology, 2: 1330-1401)

I emphasize that how you write these sentences in an APA style is very different from how you would be writing sentences in the English class. . . . In science, you don’t want to interpret what [writers] are thinking. You want to know what they are thinking. . . . So the writing has to be a little bit more structured I think in the APA format style. (William, Psychology; 2: 4347-5218)

We have formalized rules of writing. . . . The APA manual defines all kinds of rules about professional writing. (Rob, Psychology, 2: 11127-11313)

The Psychology participants also noted traditions such as these:

You can switch tenses depending on what point you’re trying to make, but talking about the literature shouldn’t probably be in past tense, but in a current [tense], “This is the literature.” (Lisa, Psychology, 1: 27576-27762)

Very briefly you sort of know what this is going to be about in the first two sentences, which are the first paragraph, which is not unusual in psychology either to have a two-sentence paragraph. Not a problem for us. (Jennifer, Psychology, 1: 6915-7132)

*Conception of the intended audience*. The participants’ conception of the intended audience appeared as a factor. The Biology participants imagined a professional audience
for the lab reports and a mixed professional/layman audience for the review of introduced fish species. Art and Psychology participants imagined a less specialized audience that was educated but not necessarily in the discipline.

For example, the differences in imagined audiences appeared when the participants discussed precise word choice and jargon. In Biology, the most precise word may be a technical term or "jargon" and 2 Biology participants believed that was acceptable.

[Jargon] has a negative connotation and it shouldn't always, necessarily. I usually think of jargon as a way of talking about something more to show how much you know. (Sarah, Biology, 2: 8250-8418)

In a primary research article, because you are submitting that particular paper to a very specialized audience, so you would use highly technical terms and you assume that everybody who reads the paper would understand it. . . . Everybody knows what the jargon is. Interviewer: How do you feel about students using that? Because they are writing to a specialized audience in this case, I think it's okay. (Chris, Biology, 2: 18216-18828)

Two Art and 3 Psychology participants also discussed jargon and technical terms. They disagreed with Sarah and Chris (Biology) and stated that students should not use jargon. They believed it necessary for the student writer to explain terminology in his or her own words, in part, to demonstrate mastery of the concept.

Something that bothers me very much about student writing is that they end up using [and] think they need to use a very high language, jargon. You know, because that's what's expected of them. But this student doesn't use that. It's very clear. Almost anyone could read this and get the idea. This is what I like to see. You know, put it in words that people understand. Don't go into this kind of philosophical jargon that the average person is never going to understand. It becomes very limited to just the field of study. (Joe, Art, 1: 4512-5038)

I'm very suspicious of jargon. In student writing I'm even more suspicious because that's usually a sign that they [were getting it from someone else]. To me it's usually a red flag. The student is leaning too heavily on some article that itself
is filled with jargon and they are just borrowing something wholesale and they don’t really know what it means. (Mark, Art, 2: 21630-21987)

“Nonwitnesses.” That seems to be someone else’s term. I cannot possibly imagine that it’s the student’s word that they came up with. I’d be incredibly shocked. So probably avoid someone else’s jargon. . . . Of course you’re not going to be able to avoid using someone else’s terms all the time. And in those cases . . . you can find your own way of describing them. So unless it’s actually critical, describe things in your own words. (Lisa, Psychology, 1: 15964-17308)

The students sometimes get caught up in jargon. They pick up the jargon and they copy it from other people. They don’t understand it themselves. . . . You have to explain what your main concepts are. (Rob, Psychology, 1: 11142-11579)

Graduate school experiences. The Biology and Psychology participants mentioned experiences in graduate school. The Biology participants learned research skills and how to write about their research.

If you had results and you brought those results and you were telling [a fellow graduate student] and others about the results, then he’d say, “Ah nonsense.” He was belligerent, talkative, and aggressive. It was okay because he would test you. You know you’re going to be tested at some point, so it might as well be him. You know, a peer doing it . . . Your work gets judged based on whether you . . . are perceptive and pull those [explanations] apart and come out with the one or the ones that best explain [your results]. (Mike, Biology, 2: 6994-8245)

As a master’s student, my mentor would give me good papers and bad papers and then ask me, and not tell me there were good papers or bad papers, and ask me to write reviews of those. What was good and what was bad about those. So you learned to distinguish a good paper from a bad paper from a writing perspective as well as from a research perspective. (Chris, Biology, 2: 23781-24136)

The Psychology participants described graduate school experiences in which they learned about unambiguous sentences, wordiness, and using headings (described in chapter 4). They appeared to have more noteworthy experiences once they were professionals and in junior and high school, prior to entering the psychology community (described in chapter 4).
Personal Experiences

Observation of a writing-thinking connection. Personal observations, experiences, and philosophies were described by the participants as contributing to their understanding of writing. Three Art participants spoke about a connection between writing and thinking.

For me, I sometimes feel that I understand something, but then when I come to try and write about it, or even talk about it in class, I realize that I didn’t really understand it as clearly as I thought I did. . . . I think [the writing process] forces me to reexamine my thinking. (Mark, Art, 2: 6522-7408)

The function of writing is not just to make [students] write. It’s really to force them to clarify their thinking. I think it comes out better when you write things out. You know, you start re-arranging sentences and sort of figure out what your focal point is. . . . The purpose [of writing] was to understand what it is that motivates your compositional attitude and try to understand where you stand as an artist, a citizen. (Dave, Art, 1: 12361-12924)

Tracy used descriptive writing assignments to help students learn to think like art historians because the writing can reveal to her when they need assistance.

I spend a lot of time helping students describe things accurately. And it’s harder than you’d think. Or describe objects in terms that art historian use. [For example,] this picture of the Buddha’s head . . . is a seventh or early eighth century silver bronze Buddha. . . . I would ask students to describe this and they would have trouble. . . . They might say that the face looks Asian or doesn’t look Asian, right? Often students will take that as a point of evidence. “It doesn’t look Asian. It looks Indian” . . . Which is really almost useless as a piece of information. Because not only do people’s ideas about what looks Asian differ from person to person, but we don’t have any idea of what Japanese people really looked like 1,000 years ago. . . . It’s not helpful to say that it doesn’t look Asian. (Tracy, Art, 2: 27991-30018)

Consequently, the Art participants not only wanted to see evidence of student thinking in a final piece of writing, they also viewed the process or act of writing as a means for enhancing thinking skills. The final text might be inadequate or below standards because the goal is thinking-on-paper in order to clarify thinking and recognize gaps in
knowledge. Art participants believed writing can be evidence of thinking and a tool for thinking. None of the Psychology or Biology participants mentioned using writing as a tool to help students think and learn. Jennifer (Psychology) explicitly noted her doubts:

Part of what I think we want students to be able to do in writing is communicate clearly what they have learned. The writing program says, “learn through writing.” Maybe [students] learn through writing. I’m not sure. I guess I do because I’m reading sources and then I’m synthesizing things in writing a literature review. So I’m learning and writing about it in a new way that’s making sense to me. So I guess you learn through writing, but I think of it more as they’re showing me what they’ve learned in their writing. Okay? So not exactly learning in the process of writing but showing me what they’ve learned. (1: 292-901)

Observation of a reading-writing connection When asked where they had learned to write, all 4 Art participants stated they learned through reading, from childhood to the present (Tracy, Art, 2: 19004-19103; Dave, Art, 2: 25499-25572). Thus they perceived a reading-writing connection. Mark and Joe (Art) explained how they transferred characteristics they found while reading to what they wrote.

I notice certain things about what I’m reading, “Oh that’s an interesting way of doing things” and “That’s kind of nice.” A lot of it is unconscious but some of it is conscious enough that I might even find things to make use of myself, or things that I might hold up as a good example in class or a way of doing things, or a way of not doing things. (Mark, Art, 2: 32159-32507)

The Golden Book called Toodle, The Little Engine That Could. There was the manner of writing, you felt the little engine just struggling. In just a sort of lowest level of children’s books is the kind of creativity and kind of emotional content—texture of words, texture of writing. The same with the translation from French [that I rewrote]. There was no texture [in the first translation]. . . . I could see in the French [version] that the author had written this with a certain kind of cadence that wasn’t there in the translation. And [I asked myself], “How can I get this in there?” (Joe, Art, 2: 32512-33992)

Philosophy that college should teach widely-applicable writing skills. The Art participants believed that part of their responsibility as a professor was to help students
learn writing skills that would help them succeed in either a career within the art community or in the general workforce. They recognized that not all of their students would pursue an art-related career and that writing skills are desired by employers in most career areas.

Observation that seniors are capable of imitating professional genres. The 4 Biology participants reflected on their observations of student capabilities, and they believed seniors in their major were capable of reaching a high standard. Three participants designed assignments that mirrored professional work, and they pushed students to follow guidelines for professional writing.

I do think it’s important for those students to be able to, not just be able to write, but actually have done research and be reporting on the results of that research in the same format that we have in journals. (Sarah, Biology, 2: 22713-22926)

I said [to my class] that all of you are going to work on one project, one research project, and the goal is to have a publication or paper that is ready to go out for publication. (Chris, Biology, 2: 9618-9785)

The Biology participants acknowledged that their students were at different skill levels and not all wrote at the level of the texts used in the study. However, as a participant stated:

You start out with the hope that you’ll make a silk purse out of a sow’s ear. [That] you’ll be able to have an influence that makes the writing better, the reports better. (Mike, Biology, 2: 24998-25162)

That mindset predominated and the Biology participants sought to improve their assignments and pedagogy in order for students to reach their high standards, which were based on the traditions and practices of the biological science community.
Observation that students enter unprepared to meet the demands of college-level writing. The 4 Psychology participants also observed their students and reached a different conclusion from the Biology participants. The Psychology participants commented on their students' lack of preparation for college-level writing.

I think this [writing] is what we should see coming in . . . I think this is what people coming out of high school should be able to write. And so if they were learning these things in high school English and they were learning how to write, how to be very concise, and I think that once they got here, they could polish that up and really turn that into some really nice writing. (Lisa, Psychology, 1: 42355-42746)

This university does not require an [admissions] essay . . . I think we should. Because in my [400-level] class there are students that I think, when they come in, it will take a lot of work to get them to write. As a result, they often drop my class. Interviewer: They are not up to your standard? Yeah. When they see what's required, they drop. (William, Psychology, 2: 31322-31696).

As discussed in chapter 4, the Psychology participants dealt with under-preparedness by limiting the scope of their assignments and using a developmental sequence: (1) paragraph, (2) one-page summary or analysis, (3) two or more pages, (4) literature review, (5) report in journal format. Three of the participants concentrated on paragraphs, one-page, and two-or-more page assignments; they did not assign literature reviews or reports modeled after journal articles. Only 1 Psychology participant assigned a report modeled after a journal article but that was only in an honors section.

Experiences with writing in junior high and high school. The Psychology participants had experiences in junior and high school where they learned how to organize and follow grammar and mechanics rules. For example, Jennifer (Psychology) stated:
The first paragraph is an intro paragraph. The last paragraph is a concluding paragraph. So it’s like the essay form they taught us in the eighth grade and all the way up to the twelfth grade. (1: 7926-8118)

Because they learned writing skills that they currently apply in their professional writing, they appear to expect that their students should also have had similar experiences.

In sum, the participants in the three cases identified several sources for their beliefs about writing which were either experiences with an academic/professional community or non-professional, personal experiences. In all cases, the community’s traditions and practices played a role. However, within those traditions and practices there were differences among the cases. The Art participants’ desire to see and understand individuality and uniqueness in artwork carried through to student writing. The Biology and Psychology participants emphasized publication rules and practices. In the area of personal experiences, the Art participants mentioned experiences ranging from childhood to the present. They discussed writing in and out of the art community and their belief that college should help prepare students for writing tasks outside the art community. Art participants brought up the process or act of writing and its effect on thinking. Biology and Psychology explained their observations of students and student skill levels. There were striking differences in the two cases’ perceptions of the capabilities of college seniors. Differences in where the Biology and Psychology participants learned about writing also existed. Psychology participants recalled junior and high school experiences that were noteworthy in terms of their academic/professional writing.
Summary

The overlap of text characteristics was related to the participants’ general concern that the texts convey a primary message. My results suggest that similarities and differences exist in how the participants in these three cases view good senior-level writing. Some of the differences were genre-dependent, and the majority were case-dependent.
Chapter 6. Discussion

In this concluding chapter, I bring together issues raised in the introduction and review of the literature and the results of my study. I start by summarizing answers to my research questions. Then I suggest that my study reinforces and expands upon the conclusions reached by others who took a cultural-historical perspective. I also consider whether cultural-historical theory can increase the probability of achieving the goal of the higher education assessment movement: improve student learning. Next I explain how my study can inform the development of a writing assessment plan to assess senior-level writing at the University of Hawai‘i at Mānoa (UHM). Finally, I point out limitations of my study that should be taken into consideration and recommend areas of future study.

Summary of Findings

I began this study to learn from faculty members what constitutes good writing and to trace their beliefs about good writing to determine how their academic discipline shaped those beliefs. The impetus behind my study came from UHM’s need to assess senior-level writing skills. Because large-scale assessments of writing have, historically, focused on incoming students’ writing skills, insufficient information exists on how to assess senior-level writing skills. To develop an assessment plan, a description of what constitutes good student writing and an understanding of the sources of professors’ beliefs about good writing were needed. With that in mind, I talked with 12 faculty members about their reactions to student texts. I discovered that the descriptions of good writing differed by academic discipline, and in some instances, by genre. However, some
similarities emerged and the participants shared an overarching concern that texts communicate a message to the reader.

*Good Writing in Art: Transformative*

The texts the Art participants selected for this study were representative of the genres that professionals in their academic community produce and read: artist’s manifesto, essay, and interpretive study of an artwork. With the participants, the genre triggered a particular set of expectations, and they highlighted a different set of criteria for the artist’s manifesto and the interpretive study.

The participants from the Art department described good senior-level writing as being transformative for the student writer and interesting to the reader. They stressed that writing can be used to promote personal expression and cognitive development. Writing can empower students by letting them put forth their own ideas. The act of writing was viewed as a tool for thinking.

Upon finishing a text, participants wanted to have the sense that the entire text added up to something, preferably something of personal interest to them. That “something” was achieved by the writers having thought about the focal issue, writing out the focal issue, logically organizing content, providing evidence, and explaining that evidence in detail. Poetic language and rhythm could help capture and sustain the reader’s interest. In addition, participants looked at whether the student firmly stood up for his or her ideas. Three Art participants noted the importance of coherent and unambiguous texts. While grammar and mechanics were mentioned as important by some, content-related issues took precedence.
When the participants explained the sources of their beliefs about writing, they stated that members of the art community esteem individuality and opinions. Additionally, they held the notion that writing skills are a general career requirement. They observed connections between writing and thinking that led them to incorporate writing assignments in their courses, regardless of whether the courses were officially designated as writing intensive.\(^5\)

*Good Writing in Biology: Contributory*

The written texts the Biology participants provided for this study mirrored professional writing: review of an issue and reports of experimental research. Because they believed undergraduate students were capable of emulating professional writing, the participants applied their community’s traditions and practices when judging student texts. However, they acknowledged that their standards were relative to undergraduates’ skill and knowledge level. The participants held particular expectations for each genre and treated the review of an issue different from the lab reports. The primary differences were in the areas of voicing opinion/stance and organization of content.

The Biology participants believed that when a text told a “story,” it communicated a message to the reader by contributing to the understanding of a phenomenon. Good senior-level writing comprehensively covered the focal area and contextualized a problem or issue. By discussing current, reliable, and valid library or Internet sources, the student writers showed how their focal issue related to existing knowledge. The Biology participants emphasized that good student writing went beyond

\(^5\) Faculty members must apply for the official writing-intensive designation and a faculty board reviews and approves the applications. Courses in which students are required to write may not be officially writing-intensive courses.
the student's findings or observations: it discussed those findings or observations in relation to what others had already discovered.

The Biology participants also wanted student writers to establish a focus; use logical organization or conform to a pre-set format of lab reports; and provide and explain evidence. When reading lab reports, participants expected the student writer to describe the methods, present results, and incorporate data displays that graphically summarized results. Texts with sentences that were unambiguous, concise, and used precise words were praised. The Biology participants checked whether citation rules were followed. Three of 4 participants also wanted texts that contained coherent paragraphs and had few or no errors in grammar and mechanics.

The sources of their beliefs about writing were derived from the biological science community's traditions and practices, which were expressed in part through common genres and publication requirements. The participants stated that science writing adds to the current knowledge of a particular phenomenon and they wanted to see student writing that aimed to do that. The participants had learned their community's expectations through experiences with writing in graduate school and as a professional. Their personal observations of students led them to believe that seniors were capable of high-quality writing.

*Good Writing in Psychology: Transmissive*

Two of the three texts that the Psychology participants selected for this study were dissimilar to writing typically found in the psychology community. Only the review of the literature paralleled a genre that the participants themselves might write. The
Psychology participants may not be assigning writing tasks that mirror professional writing because they viewed the undergraduate majors in their program as beginning writers who were not yet ready to tackle the professional genres.

The Psychology participants described good senior-level writing as transmitting information to the reader. They praised texts that directly stated a focal issue, previewed the upcoming content in the introductory section, carried out that preview in the body of the text, and concluded by effectively summarizing the text. When all of the content was directly related to the established focal issue and previewed in the introduction, the Psychology participants praised the text. They also appreciated student writers who defined terms because in the psychology community a term may carry several different meanings. Transmission of information to the reader was enhanced when the student writer followed the rules of the Publication Manual of the American Psychological Association (American Psychological Association, 2001), including rules for grammar and mechanics. In addition, coherent paragraphs, transitions across paragraphs, and unambiguous sentences aided in clear communication.

The primary source of their beliefs about writing stemmed from a desire to adhere to the traditions and practices of their academic community, primarily as expressed in the Publication Manual of the American Psychological Association (APA). They began learning APA as undergraduate students and continue learning by reading and publishing in their field. Although the APA manual has sections on grammar, mechanics, and editorial style, the Psychology participants attributed their concerns in these areas to experiences in junior high and high school.
Good Writing in Art, Biology, and Psychology and Genre Differences

Although I can pick out text characteristics that lead to distinct descriptions of good writing in Art, Biology, or Psychology, I can also highlight useful commonalities. The participants in Art, Biology, and Psychology were concerned that the students’ written texts communicate a message to the reader. They recognized that good writing should be tailored to the intended audience. Because these overarching features of writing are too global to be useful when developing criteria to judge senior-level writing, more fine-tuned characteristics are needed. This is where the six shared text characteristics can be of use: they indicated the characteristics needed for a text to communicate a message. Good writing, according to the participants in the three disciplines, a) established a focal issue, b) set and fulfilled organizational expectations, c) provided evidence and explanation, d) created coherence, e) used unambiguous sentences, and f) followed grammar and mechanics rules.

Simultaneously, good writing also met the criteria associated with a particular genre. Genre criteria coexisted with the six shared characteristics, sometimes dictating how the characteristic should appear in the written text. For example, the statement of the focal issue was genre-dependent: hypothesis in a lab report, thesis statement in an essay. The Art participants noted that personal expression is desired in an artist manifesto and less so in an interpretive study. Criteria for good writing were different across genres. However, the scope of my study did not include an investigation of criteria for the same genres written for different academic communities (i.e., an essay written for Psychology versus an essay written for Art).
**Cultural-historical Theory and Good Writing**

My study lends support to a cultural-historical perspective of learning and cognitive development in the area of writing. Learning to write takes place through social interactions within communities such as family, school, peers, work. The communities have historically- and culturally-developed ways of communicating and thinking. New community members are introduced to and, over time, internalize these ways as they interact with more experienced community members.

**Social and Mediated**

A fundamental aspect of cultural-historical theory is mutually-constructed cognitive processes. According to Cole and Hatano (2006), a person's learning is directed by previous experiences as well as by other community members' practices; actions are frequently imitations of a more experienced community member(s); and interpretations are guided by community members' practices and traditions. Vygotsky named this *internalization*: a person's interpsychological, social activities become intrapsychological, internal activities that shape cognitive processing (Vygotsky, 1978). Higher-order cognitive processes such as perception are mediated by language and also by other cultural tools (e.g., tying a string around a finger). The mediation is determined by what a person has already internalized through community participation. Thus the reaction will reflect the shared knowledge of an individual's communities. A key to this aspect of cultural-historical theory is that language both assists thinking and shapes thinking (Luria, 1976; Vygotsky, 1987a).
The participants in my study made comments that suggest their participation in personal and academic communities were internalized as intrapsychological processes and were mediated. Their comments also indicated that their reactions to the student texts were based on a complex interweaving of multiple communities in which they were, and may still be, members. The participants' interactions in various communities had a qualitative effect on their beliefs about writing and how research takes place within an academic community.

The Art participants mentioned childhood experiences, but Biology and Psychology participants did not. One Art participant recalled listening to stories as a child and hearing the rhythm of the language. That repeated activity between him and an adult led him to attend to the aesthetic qualities of written texts in his current position as a professor. The Psychology participants' junior and high school experiences mediated their reactions to the texts. The Art and Psychology participants may have recalled these personal communities because their current professional community's practices reinforced those experiences. A Biology participant described interactions among graduate students while he pursued his doctorate degree. He believed those interactions mirrored professional conversations about research and thus helped him learn to consider alternative explanations of data sets, which is characteristic of biological research. He applied that to his reading of student texts.

The Art participants discussed the writing process as a tool for thinking and their statements seem to support an aspect of mediation. They believed in the usefulness of asking students to write because in the act of writing the students make their ideas visible
to others as well as themselves, which invariably influences the student writers' cognitive processes (Valsiner & van der Veer, 2000). The Art participants recognized this and used writing to reveal gaps in the writer's understanding or lead to new understanding of a concept.

Participants themselves suggested that interacting with members of a community can lead to knowledge of that community. Half of the participants attributed their uncertainty about characteristics of good writing in the academy-at-large to never having discussed writing with professors in other academic disciplines.

Historical and Cultural: The Discourse Community

Another key aspect of cultural-historical theory is examining the history of the communities in which an individual participates in order to understand current learning and development (Luria, 1979). Cognitive processes are not intrinsic qualities that are consistent across communities. Instead, differences in communities can explain differences in behavior and thinking (Jovchelovitch, 2007). Changes in the community will introduce participants to new content, new forms of activity, and new ways of thinking (Luria, 1976). In terms of their written and spoken products and forms, these discourse communities (Bizzell, 1982) develop criteria and standards that appear in the common genres of the community.

Although my project did not include a historical study of the Art, Biology, and Psychology communities, I did discover that the participants traced the sources of some of their beliefs about writing to the historically- and culturally-developed ways of writing and thinking in their academic community. They applied these to undergraduate student
writing. In addition, they understood that the quality and some desirable aspects of writing may not exist in undergraduate writing because the students have not participated in the community long enough to reach professional standards. However, some participants believed that seniors were capable of achieving near-professional quality.

The number of different communities mentioned by each participant varied. Unlike the Art and Psychology participants, the Biology participants stated that their participation in the biology academic community was the primary effect on their beliefs about writing. When they read the student texts, they focused on whether text characteristics found in professional publications existed in the student texts. The Art participants and the Biology participants noted sub-disciplines that they believed would also shape reactions to student texts. For the Art participants, they commented on a division between the studio art professors and the art history professors. In Biology, participants discussed developmental biology and ecological biology as separate, but related communities. While they might not consider themselves members of that community, their interactions with members led to a general understanding of the sub-discipline.

The Art participants attributed nonconformist thinking to the values of the art community. They then wanted to see students exhibit such thinking in their written texts. One participant pinpointed 1960s as the decade in which the community practice of artists explaining the motivation and philosophy behind artwork began. The genre of the artist's manifesto was born. The Art participants expected the student's artist manifesto to convey his or her philosophy.
When the Biology participants chunked a variety of text characteristics under a general category of "science writing," they were continuing traditions and practices of the science community. They explained that they looked at the publication dates of the outside sources because writing in science builds from current knowledge. Consequently, students should include the most up-to-date findings. The Biology participants also echoed their discourse community when they discussed the publication requirements of science journals. For example, they held conciseness as a goal for student writing because science journals had limited page space. They appeared to view their role as preparing students to write in ways acceptable to the biological community.

The Psychology participants stressed the need for students to use the Publication Manual of the American Psychological Association (American Psychological Association, 2001). The manual is a product of the psychological community and has changed in response to changes in the community and society. It began as a six-page set of guidelines in 1929 and has grown to 439 pages in its fifth edition (Foxhall, 2001). The participants brought up sections and chapters of this manual, for example, when they discussed headings and citations of outside sources. Although the manual includes grammar and punctuation, the participants stated that their experiences in other communities were the basis for their belief that writing should be error free.

The student texts chosen by the participants reflected their academic community and were qualitatively different across communities. When the participants named the genres of the texts, they exhibited the historical and cultural nature of their academic community. These genres had been created, developed, and modified over time by
members of particular communities. The most recently invented genre of the nine texts read for this study was the artist's manifesto, which an Art participant explained was developed by artists in the Minimalist movement of the 1960s. The Biology participants noted their familiarity with both the report of experimental results (lab report) and the review of an issue. One Psychology participant submitted a review of the literature, which was listed in the APA manual as a primary publication (American Psychological Association, 2001). The manual did not list essays as a type of psychological publication.

**Summary**

My findings indicated that the participants applied criteria from personal and academic communities to senior-level writing. They typically drew from multiple communities when reacting to the student texts and in some instances, applied genre-based criteria. These findings support cultural-historical theory which holds that learning to write and written communication involve social interactions with a community or communities that have historically- and culturally-developed ways of communicating. Vygotsky's (Rieber & Carton, 1987) and Luria's (1976) research concluded that statements about cognitive processing need to take the cultural context into consideration. This suggests that a universal, decontextualized definition of good writing is impossible to formulate. Indeed, my study and other studies have concluded that within-community interactions led to differences in ways of writing (Bazerman & Russell, 2002; Duszak, 1997; Hyland, 2000; John-Steiner & Mahn, 1996; Lave & Wenger, 1991; Lee & Smagorinsky, 2000; Myers, 1990; Odell & Goswami, 1985; Prior, 1998; Thaiss & Zawacki, 2006; Winsor, 1996).
Development of a Writing Assessment Plan

My findings, cultural-historical theory, and research on written communication and outcome assessment on a program level have informed my recommendations for a writing assessment plan. Plans in outcome assessment typically include three phases: first, define outcomes; second, determine how well outcomes are being reached; and third, use the results to guide pedagogical and curricular improvement (Maki, 2004; Nichols, 1995b; Nichols & Nichols, 2000; Walvoord, 2004). The Western Association of Schools and Colleges (WASC) supports this three-phase process and emphasizes the end goals of assessment are to improve student learning and guide institutional change.

Define Outcomes

The first phase is to define the writing outcomes that the institution and its faculty members want graduates to have. Typically, several layers of an outcome exist: an overarching, broad institutional outcome; a focused program (e.g., general education, major, minor) outcome; and specific course-level outcomes. For example, a broad student learning outcome (SLO) at the institutional level might state, “Students will demonstrate the ability to communicate effectively in writing.” The related program-level outcome for general education might state, “Students can write in at least one of the genres of their field.” The corresponding Biology course-level outcome might state, “Students will be able to write lab reports.”

The findings from my study suggest that useful general education SLOs for written communication would contain both university-wide learning outcomes and
academic-community outcomes. Including only broad-level, university-wide learning outcomes for writing may not be constructive because the Art, Biology, and Psychology participants had similarities and differences in their descriptions of good student writing. Additionally, WASC recommendations and research in program evaluation supported the idea that learning outcomes match what professors expect and teach.

The current SLOs for writing-intensive requirement include the following: “Students can (a) identify the primary genres of their field, describe identifying characteristics, and write in at least one of the genres; (b) use vocabulary appropriate for field-specific texts; (c) follow the writing, documenting, and formatting conventions that are appropriate to a field” (Mānoa Writing Program Writing Board, 2003). These SLOs appear aligned with the comments made by Biology participants more so than the Psychology participants. The Psychology participants did not appear to hold as an outcome that seniors are able to write in genres of the profession. Instead, Psychology participants’ comments suggest that their SLOs would include students being able to write an academic essay that contains thesis and organization statements. The Art participants, like the Biology participants, were interested in students learning to write in particular genres, although they did not emphasize the formatting conventions to the extent the Biology participants did.

Determine How Well Outcomes Are Being Achieved

The second phase of assessment is to determine how well students reach the outcomes. This requires a testing instrument or way to collect evidence and evaluate that evidence. In the area of writing assessment, typical ways have included the following:
essay exam, multiple-choice exam, portfolio, and course assignment. The selection of an instrument hinges on the SLOs and anticipated use of the results.

As I stated in chapter 2, institutions of higher education have been considering using tests similar to the large-scale writing tests that incoming first-year students take (e.g., SAT Reasoning test’s writing section, ACT Writing test, campus-created writing placement exams). To meet the demand for such tests, organizations have developed tests to be taken by juniors and seniors that can be compared to schools nationwide: Collegiate Assessment of Academic Proficiency (CAAP) (ACT, n.d.), Collegiate Learning Assessment (CLA) (Council for Aid to Education, n.d.-b), Measurement of Academic Proficiency and Progress (MAPP) (Educational Testing Service, n.d.).

The CLA and CAAP are two widely known, large-scale writing tests designed to measure skills of college students after they have completed their general education requirements. The tests employ similar holistic scoring rubrics to judge student essays (see Table 6.1). In holistic scoring, the essays receive a single score based on how well the writer achieved the set of text characteristics in the scoring rubric.

Table 6.1. Text Characteristics Listed in the CLA and CAAP Holistic Scoring Rubrics

<table>
<thead>
<tr>
<th>Test</th>
<th>Text characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collegiate Learning Assessment (CLA)</td>
<td>• Presentation (clear and concise argument)</td>
</tr>
<tr>
<td></td>
<td>• Development (effective structure)</td>
</tr>
<tr>
<td></td>
<td>• Persuasiveness (effective defense and analysis)</td>
</tr>
<tr>
<td></td>
<td>• Mechanics (quality of writing)</td>
</tr>
<tr>
<td></td>
<td>• Interest (maintain reader’s interest)</td>
</tr>
<tr>
<td>Collegiate Assessment of Academic Proficiency (CAAP)</td>
<td>• Take a position</td>
</tr>
<tr>
<td></td>
<td>• Organization</td>
</tr>
<tr>
<td></td>
<td>• Support position</td>
</tr>
<tr>
<td></td>
<td>• Mechanics, usage, sentence structure</td>
</tr>
</tbody>
</table>
The six text characteristics mentioned by at least 10 participants in my study are found in the CLA and CAAP rubrics: establish a focal issue, set and fulfill organizational expectations, create coherence, provide evidence and explanation, use unambiguous sentences, and follow grammar and mechanics rules. However, tests such as the CLA and CAAP treat writing skill as an “unsituated, universal competence” (Bazerman & Russell, 2002, p. 449). By doing so, they do not acknowledge that some text characteristics are expressed or manifested differently across academic communities or genres within them. My findings do not support a one-size-fits-all writing test because faculty members are likely to view it as not aligned with their desired outcomes for senior-level writing.

The Art and Biology participants selected student texts that represented genres of the community, and they wanted students to demonstrate their skill in following the community’s traditions and practices. Psychology participants also wanted students to follow the community practices but they restricted the scope to particular sections of the APA manual. Thus a single test can not align with the writing expectations of faculty members in different academic communities. The likely result of administering a single test is that faculty members will view the test as invalid and not applicable to their students. They may be unwilling to make changes in their curriculum or pedagogy (if needed) because the test does not match what they believe about good student writing.

The Psychology participants were looking in student texts for clear transmission of a message. Taking that into consideration, students’ writing skills in Psychology could be determined through embedded course assignments or a timed essay test if at least one article or other source/reading was part of the task. By including a source/reading, the
task could measure a student's skill in correctly citing according to APA rules. A timed exam could elicit other text characteristics also, such as establish a focal issue, set and fulfill organizational expectations, create coherence, define terms, provide evidence and explanation, conclude effectively, and follow grammar and mechanics rules. Moreover, because the Psychology participants did not state that learning to write in the genres of their academic community was important for seniors, the task may not need to specify a genre of the psychology academic community. The CLA has the potential to measure the writing skills the Psychology participants mentioned and produce meaningful results for the faculty.

Given the descriptions of characteristics of good writing in Art and Biology, a timed test appears inappropriate because it does not provide students with an opportunity to demonstrate achievement on text characteristics mentioned by the participants. Even the CLA, which includes a reading passage from which the writer can draw evidence, is unsatisfactory. The short test period, fewer than 90 minutes, does not provide sufficient time for students to show their writing skills as expected by the Art and Biology participants. For example, the Art and Biology participants believed that good student essays and reviews contain complex content and voice the student writer's stance or opinion. The limited time frame given students to complete tests like the CLA is not conducive to student contemplation or reflection on the content.

In addition, for my study, the Art and Biology participants selected texts that mirrored genres common in their professional community. The large-scale writing tests such as CAAP, CLA, and MAPP do not collect evidence on how well students can write
in particular genres created and used by an academic community. The findings from my study suggest that tests such as these would be of limited usefulness to Art and Biology faculty members in assessing student writing skills and improving student learning.

Ways to collect evidence of student writing skills that have the potential to be meaningful and useful to Art, Biology, and Psychology faculties are course-embedded writing assignments and portfolios. Course-embedded writing assignments are assignments that students complete as part of their regular coursework. For example, in writing-intensive classes at UHM students are required to complete at least 16 pages of writing. Some of that embedded writing can be collected and evaluated. Portfolios are collections of a student’s writing, often compiled from several courses over a period of time. Both embedded writing assignments and portfolios are forms of contextualized writing assessment because the writing is generated in and for a particular context such as a course or program. Because the students usually plan, draft, and revise written assignments, embedded assignments or portfolios can provide evidence related to the text characteristics mentioned by participants in my study. Moreover, the assignments can specify particular genres, which appeared important to Art and Biology participants.

If essay tests, course-embedded writing assignments, or portfolios were selected as evidence of seniors’ writing skills, a way to evaluate the quality is needed. Typically, scoring rubrics or scoring guides are created (Stevens & Levi, 2005; Walvoord & Anderson, 1998). The rubrics essentially define criteria. My findings provide a basis for creating rubrics that represent both shared concerns across academic communities and specific academic-community concerns. George Mason University (GMU) is an example
of this method and the university is similar to UHM (4-year public, large study body, graduate programs, high research activity). At GMU, faculty members from each department created a rubric to judge student writing in their writing-intensive courses. The same major categories are used, but the criteria differ by academic discipline. For example, the scoring criteria for the Department of Art and Visual Technology state

Content: Student writing should clearly engage with, and actively respond to, the subject matter described in the assignment. Papers should show evidence of research and should integrate research, reading, viewing and knowledge of art making (where appropriate) into writing. Students should try to integrate their research with their own interests. (George Mason University, n.d.-a, para. 1)

The Department of Psychology criteria state

Content: Content is clearly stated, including adequate justification of hypotheses, appropriate level of detail throughout . . . Literature review studies are applicable and used appropriately, and the review includes adequate and appropriate documentation. Method section includes sufficient detail to enable reader to replicate the study. (George Mason University, n.d.-b, para. 1)

GMU faculty members within an academic area gathered writing assignments from their department’s writing-intensive classes and used the criteria to judge the writing. UHM faculty members’ support of the writing-intensive program suggests that this model may be feasible.

The six shared text characteristics that emerged from my study can serve as the starting point for scoring rubrics. Faculty members can use them as the basis for a community-specific scoring rubric, which can then be further adapted to include genre-specific criteria. They can then use the rubric to score a sample of their seniors’ writing. The written texts can be taken from writing-intensive classes. GMU handled workload issues, in part, by scheduling the assessment of different academic departments each year
so no department assessed writing every year. In addition, the number of pieces of student writing can be limited to 50 or fewer (M. Allen, personal communication, September 15, 2007). A sample of student texts can reduce faculty time to fewer than 4 hours of training and scoring plus the initial time to align a scoring rubric with academic-community goals. UHM would need to provide administrative support for logistics such as collecting texts and inputting scores.

This collection and scoring method has several benefits. Because it involves faculty members and addresses writing criteria they mentioned as important, the chances of faculty members using results increase. It satisfies WASC requirements. However, while cultural-historical theory, research on written communication, and the literature on higher education assessment support this method, it does not allow for easy cross-institution comparisons. If the federal Department of Education's recommendation that assessment results be comparable nationwide becomes a requirement, this method would be inadequate.

Use Results

The third assessment phase is to interpret and use results to guide improvements in pedagogy and the curriculum as needed. Although this is the third phase, it is appropriate to attend to factors that promote use while designing the first two phases (Patton, 2000). Research in program evaluation showed that improvement is likely when the program members were involved in planning and implementing the assessment (Alkin et al., 1990; Fetterman et al., 1996). Thus if professors themselves were involved, the likelihood of their use of the results is increased.
Moreover, the participation of professors is supported by cultural-historical theory. As professors join an "assessment community" and interact with other community members, they will be introduced to the goals of assessment and, over time, internalize the traditions and practices of the assessment community. Through the internalization process, the professors can form new cognitive structures and new forms of behaviors (Vygotsky, 1987b) that can lead them to use assessment results to improve student learning.

My interviews with the participants in this study engaged them in the initial stages of assessment planning. They articulated for me and themselves the criteria they apply when judging student texts. By creating SLOs and developing rubrics from the characteristics and criteria that faculty members mentioned as contributing to good student writing, they are more likely to use the results because the assessment will give them performance data on student learning they care about.

The continued assistance of participants from my study and additional faculty members are advisable during the drafting, discussing, and implementing of an assessment plan. My recommended plan that involves faculty honing rubrics to align with their criteria for good writing and spending an afternoon scoring a sample of student texts needs to be discussed with the faculty in each department.

During the discussion, the challenges to assessment such as faculty resistance and measurement-related concerns can be addressed. Resistance can stem from lack of knowledge about assessment in higher education, fear of being judged, and fear of how
the results will be used. Faculty members can help create a plan that specifies how they and the institution will use results to guide improvement and not to punish.

Technical measurement aspects can be brought to local experts for their advice so that the assessment remains focused on improving student learning and is not reduced to measurement-related issues. Faculty members' participation can move them into the assessment community, and through continued participation, it can change how they view assessment and teach students. The faculty can set policies encouraging or requiring faculty participation in assessment efforts. However, without administrative support and resources, faculty, staff, and administration may not implement and uphold assessment policies.

Limitations of My Study

My study has several limitations. Issues related to trustworthiness were discussed in chapter 3 and one, triangulation, will be elaborated here. Other limitations deal with open coding and the constant comparative method; generalization of my findings to different settings; no ranking of the text characteristics; and the texts selected for the study.

Triangulation

I designed this study with two forms of triangulation: having four faculty members' perspectives on the same student texts and using assignment handouts to confirm that the participants' stated expectations were similar to those they provided their students. As I stated in chapter 4, only four assignment handouts were adequate for the
purpose of triangulation. Thus, I used the assignment guidelines when possible and relied on the four participants' separate interviews as a method to confirm the text characteristics for each academic discipline. The second interview with each participant allowed me to check my understanding of the text characteristics the participants mentioned in the first interview.

*Open Coding and the Constant Comparative Method*

Miles and Huberman (1994) discussed issues involved with knowing whether the findings of a qualitative research study were dependable, reasonable, credible, and useful. With qualitative research, the researcher has a direct effect on the quality of the results and the interpretations. I took into consideration my beliefs about written texts and writing in Art, Biology, and Psychology during open coding and comparing transcript segments to other segments. I enlisted the help of others, including a second interview with each participant, to guide how I was applying codes to the transcripts. When analyzing, I moved back and forth between segment and full transcript to maintain the context of the conversation. I defined the codes and checked whether all coded segments met the definition. I acknowledge that my interpretations partly reflect my previous experiences and the communities in which I am a member. My history and current social context have necessarily shaped my study.

*Generalization*

Generalization from a sample of four professors to their departments and also to departments on different campuses requires that the sample group be representative of those larger groups. Because a small subset of a department typically teaches writing-
intensive courses, the participants in my study may have a different view of good senior-level writing when compared to the faculty at-large in their department. To aid in obtaining a representative sample, I carefully selected participants with the help of a key informant and my selection criteria were designed so that participants would reflect the department in terms of specialization and experience.

**Participants Did Not Rank Text Characteristics**

I did not ask participants to rank the text characteristics that they mentioned. Instead, when the four participants in one academic community discussed the same text characteristic, I included that characteristic as contributing to the quality of a text. However, the participants may not weigh each characteristic equally when judging student texts. For example, all four participants in Art pointed out poetic phrases and/or rhythm in answer to the question of why the artist's manifesto was good. If they place less weight on this characteristic when compared to other stated characteristics, they may judge a text without poetic phrases and/or rhythm as good student writing.

**Texts Selected For Study**

The texts selected for my study showed that students can encounter different types of assignments and genres both within an academic discipline and across disciplines. My findings suggest that differences exist within and across disciplines and some are likely linked to genre expectations. The participants looked for certain characteristics with particular genres. An obvious example was the lab report. When reading the students' lab reports, Biology participants expected the typical organizational structure found in published reports of experimental research. Because of these genre differences, if the
participants had selected different genres from the ones in this study, my findings may have been different. Given that I asked participants to select texts that represent the type of writing that students do in their discipline, my findings do contribute to knowledge about writing in the three academic disciplines.

Recommendations for Future Study

Application of Method to Additional Academic Communities

In-depth interviews based on student texts were effective in drawing from the participants the text characteristics that contributed to quality, their beliefs about writing, and the origin of those beliefs. A key to the method appeared to be basing the interviews on the activity of reading and discussing student texts. Without being grounded in such an activity, the descriptions of good writing and the text characteristics mentioned would likely be unusable and almost meaningless. The interview method allowed me to probe for explanations of common terms and phrases such as “well organized” and also ask for examples from the student texts.

Investigation of other academic communities can be carried out using the same method. This would allow for comparison of different communities and exploration of whether academic units share traditions and practices. For example: explore the extent to which the art community overlaps with other communities within humanities; compare the noted text characteristics within the natural sciences to determine if a single description of good natural science writing can capture the various science areas; look at
how well the professional schools (e.g., nursing, education, engineering) match humanities, social sciences, and natural sciences.

Setting Standards

The participants in my study described the text features that contributed to their judgment that the text represented good senior-level writing. However, the levels of quality associated with particular text features were not systematically discussed. A next step would be to collect samples of student texts that represent a range of quality and ask faculty members to evaluate how well the texts fulfill their expectations on the text characteristics identified in my study.

In addition, research on the expectations for different levels—freshman, sophomore, junior, senior, and graduate student—would also be useful. For example, lower-division Art courses require students to write essays and artist’s manifestos and Biology courses assign reviews of issues and lab reports. How do professors’ standards differ across course level?

Effect on Participants

The interviewer and interviewees involved with in-depth interviews make meaning and co-construct meaning during the interview/conversation (Kvale, 1996; Mishler, 1986; Rubin & Rubin, 2005). I found evidence of this when some participants commented, as an aside after the interview, that it was hard work to articulate their thinking and beliefs about good student writing. They had never been asked to explain in such detail what was good about a student text and why they thought that way. I would like to return to the participants and ask whether they believed anything had changed in
their teaching practices or thinking about writing. The interview effect on the participants may have led them to be more precise in their writing assignments and specification of expectations to their students.

**Community-Based Versus Genre-Based**

My findings indicated that some differences were community based and others were genre based. The set of text characteristics mentioned by the participants differed by genre, although some characteristics were noted in all genres. The participants themselves were unable to shed light on differences across academic disciplines because they have had insufficient discussions about writing with professors outside their area. Teasing out community- from genre-based expectations and beliefs about writing would be useful.

Support for basing judgments of writing on genre rules comes from Swales (1990, 2004) and Johns (1997) who advocated that professors should teach students features of particular genres, and it comes from existing rubrics that have been tailored to the genre specified in the writing task. For example, see the rubrics used for narrative, informative, and persuasive writing by The National Assessment of Educational Progress (Persky et al., 2003). Thus an area of study branching from my findings is to determine how a community’s text characteristics cut across genres and how they match with another community that has a similar genre.
Conclusion

To meet accreditation requirements, UHM and other institutions of higher education, need to assess college seniors’ writing skills. Assessment can be accomplished in a meaningful manner by involving faculty members and using assessment methods that fit their expectations and desired outcomes. My study suggests that writing assessment plans have an increased likelihood of success if they acknowledge differences across academic communities. An institution-wide, one-size-fits-all testing instrument may satisfy calls for UHM to be accountable, but the prospect that faculty members will subsequently improve teaching and students’ writing skills is unlikely. Granted, even with a tailored assessment plan, faculty resistance remains a challenge and resources for assessment efforts remain scarce. Yet an assessment project aligned with what professors teach and focused on the text characteristics they value has the potential to do more than help the UHM meet accreditation requirements. Community-specific writing assessments have the potential to provide information that faculty members can use to improve students’ writing skills.
Appendix A. Interview Protocol for the Semi-structured Interview

1. How did the examples of student writing measure up to your conception of good student writing?

2. Could they be considered exemplary examples of senior-level student writing? Why/why not?

3. If you were to make a list of the characteristics or features of good writing in your field, what would be on that list? Why?

4. Are these characteristics of writing different from what faculty members in other disciplines might say? Why?

5. How does being professor in Art (or Biology or Psychology) influence how you evaluate student writing?

6. Is there anything else that you’d like to add?
Appendix B. Protection of Human Subjects: Assurance Identification / IRB Certification / Declaration of Exemption

<table>
<thead>
<tr>
<th>Protection of Human Subjects</th>
<th>Assurance Identification/IRB Certification/Declaration of Exemption</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Common Rule)</td>
<td></td>
</tr>
</tbody>
</table>

Institutions must have an assurance of compliance that applies to the research to be conducted and should submit certification of IRB review and approval to the Department or Agency in accordance with the Common Rule.

<table>
<thead>
<tr>
<th>Request Type</th>
<th>2. Type of Mechanism</th>
<th>3. Name of Federal Department or Agency and, if known, Application or Procurement Identification No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGINAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTINUATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXEMPTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Title of Application or Activity
"Professors' Evaluations of College Seniors' Writing: Similarities and Differences Across Three Disciplines"

5. Name of Principal Investigator, Program Director, Fellow, or Other
Monica Still-Breng

6. Assurance Status of this Project (Respond to one of the following)

[X] This Assurance, on file with Department of Health and Human Services, covers this activity.

Assurance Identification No.: F-3528, the expiration date: September 23, 2008. IRB Registration No.: IORG0000188

[ ] This Assurance, on file with (agency/dep't), covers this activity.

Assurance No., the expiration date: , IRB Registration/Identification No.: (if applicable)

[ ] No assurance has been filed for this institution. This institution declares that it will provide an Assurance and Certification of IRB review and approval upon request.

[X] Exemption Status: Human subjects are involved, but this activity qualifies for exemption under Section 101(b), paragraph 2.

7. Certification of IRB Review (Respond to one of the following if you have an Assurance on File)

[ ] This activity has been reviewed and approved by the IRB in accordance with the Common Rule and any other governing regulations.

by: [ ] Full IRB Review on (date of IRB meeting) or [ ] Expedited Review on (date)

[ ] This activity consists of multiple projects, some of which have not been reviewed. The IRB has granted approval on condition that all projects covered by the Common Rule will be reviewed and approved before they are initiated and that appropriate further certification will be submitted.

8. Comments

9. The official signing below certifies that the information provided above is correct and that, as required, future reviews will be performed until study closure and certification will be provided.

11. Phone No. (with area code): (808) 956-5007
12. Fax No. (with area code): (808) 839-3954
13. Email: dendle@hawaii.edu

14. Name of Official
William H. Dendle

15. Title
Compliance Officer

16. Signature

17. Date
January 27, 2006

Authorized for local Redactions by IRB
Appendix C. Consent Form With Brief Description of the Study

Agreement to Participate In
“Professors’ Evaluations of Student Writing Research Project”

Monica Stitt-Bergh, Principal Investigator
Department of Educational Psychology, University of Hawai‘i at Mānoa

This interview is being conducted as part of a dissertation research project documenting the perceptions and evaluative criteria that professors use when reading and evaluating student writing. Twelve University of Hawai‘i at Mānoa faculty members will participate. Participation in the project will consist of two audiotape-recorded sessions with you at a time and place agreed upon. Your participation in this project is completely voluntary and you may withdraw from participation at any time. You may elect not to answer any question(s) at any time for any reason. The two interviews will be informal and conversational and will focus on your perceptions and evaluations of student writing. Following the interview, I will transcribe the tapes. At the completion of the project, the audiotapes will be destroyed. No personal identifying information will be included with the research results. Research data will be confidential to the extent allowed by law. Agencies with research oversight, such as the UH Committee on Human Studies, have the authority to review research data.

There may be no direct benefit to you for your participation in this project. However, your participation will contribute to the University of Hawai‘i’s goal of assessing student writing.

“I certify that I understand the foregoing, that I have been given satisfactory answers to my inquiries concerning project procedures and other matters, and that I have been advised that I am free to withdraw my consent and to discontinue participation in the project at any time without prejudice.

I herewith give my consent to participate in this project with the understanding that such consent does not waive any of my legal rights, nor does it release the Principal Investigator or the institution or any employee or agent thereof from liability for negligence.”

Please contact me, Monica Stitt-Bergh (375-5806; bergh@hawaii.edu), if you have questions regarding this project.

If you cannot obtain satisfactory answers to your questions or have comments or complaints about your treatment in this project, contact the Committee on Human Studies, University of Hawai‘i, 2540 Maile Way, Honolulu, HI 96822; 956-5007

Copy to Participant
Appendix D. Verbal Instructions Given to Participants During the First Interview

One of my goals for my dissertation study is to define and describe good student writing in the fields of Art, Biology, and Psychology. These three pieces were written by students in upper-division courses in your field. Other professors in your field have identified them as examples of good student writing. I'm interested in finding out what it is about these pieces of student writing that make them good. I'd like you to read each paper, taking as much time as you need. Instead of grading it, I'd like you to tell me what it is about the paper that is good. For example, point out the characteristics that make it good writing. You can mark on the paper if that is helpful. After we discuss the first paper, we'll move on to the second and third papers. Do you have any questions?
### Appendix E. Karen’s Within-subcase (Participant) Matrix (Excerpt)

<table>
<thead>
<tr>
<th>Code</th>
<th>Number of mentions</th>
<th>Quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>4</td>
<td>They have the components here. They have an abstract, an Introduction, they have separated out the materials and the methods, and the results from the discussion.</td>
</tr>
<tr>
<td>Focus</td>
<td>8</td>
<td>What he’s done here in these first couple of sentences – I’ll read them out in a second – what he’s done here is introduced the problem. In a very broad context, he starts talking about the problem of introduced species of Hawai‘i. And then in the second paragraph he starts to hone in on more specific examples. And compares and contrasts this idea of Hawai‘i having a very unique biota and also making it very vulnerable to invasion by introduced species. . . . So he’s starting off in a very general way, talking about why Hawai‘i is special, it’s isolated, it’s very much alone as an archipelago in the pacific and just naturally it’s evolved a very unique flora and fauna. Nevertheless we have had a number of introductions to the state over the last couple of centuries.</td>
</tr>
<tr>
<td>Definition</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Evidence</td>
<td>7</td>
<td>They could have expanded on the background because I know there’s literature available for Hawai‘i on this, they could have also expanded on the presentation of the data. There should be a lot of pretty detailed data available and interpretation of that as well.</td>
</tr>
<tr>
<td>Coherence</td>
<td>2</td>
<td>I think they’ve done a good job at tying this all together so that they’re flowing through the story of the process that they are describing.</td>
</tr>
<tr>
<td>Comprehensive</td>
<td>3</td>
<td>I think for this particular piece it’s important because he’s bringing together these opinions from these different camps, these different points of view on the topic, if he was to only present information that he’s gleaned from scientific articles he’d be getting only one of these points of view. But here he’s got that together with information that he’s gathering from the fisheries departments and from the fishermen themselves.</td>
</tr>
<tr>
<td>Contextualize</td>
<td>5</td>
<td>We need to place our work in context. The truth is that when we do studies we do them on very small minuitia, things that most people aren’t necessarily interested in. There’s going to be a very limited audience to a scientific study. Typically, when we start a paper, I think we would try to give it the broadest importance that you can starting off, and then bring it down to the details so that you can capture a broader audience or put the importance in a place that key words are going to pick up on. Things that may be people who are peripherally interested will still find.</td>
</tr>
<tr>
<td>Hook</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Inference</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>3</td>
<td>He’s pretty successful in immediately he’s laying out the fact that – what is the issue, why is it important, and what are some of the things that he’s going to address in the essay.</td>
</tr>
</tbody>
</table>
Appendix F. Within-case (Discipline) Matrix: Art (Excerpt)

<table>
<thead>
<tr>
<th>Code</th>
<th>Number of participants</th>
<th>Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>4</td>
<td>You have to start it off well, get the logic started. Start the process moving so that every thing that follows, follows from something. So if you have a question, premise, or problem and then what follows somehow relates back to that. Answers the initial question, or furthers the basic argument that is signaled at the beginning. (Mark, 2) Succinctly stating what they are doing and just sort of deeply describing, and then concluding it. It was very organized. . . . I think they provide a structure, a framework in which to work. There’s a logic to it. It flows through just sort of logically. (Joe: 2) Everything else that happens after [the first paragraph] is about the question of beauty . . . How beauty used to be more a prerequisite and now it’s almost a negative because things have turned around to social commentary and activism. . . . She talks about what people think, what artists have done, the controversy from both points of view, and then she says what she thinks. That’s just logical. A B C. Makes perfect sense to me. (Dave, 1) It’s very very clear, stepwise, argument wise. And it is a balance between sources – quoting others and using her own observations. The logic is her own. She has put the pieces together. But she’s using pieces that come from inside and outside so to speak. (Tracy, 1)</td>
</tr>
<tr>
<td>Focal issue</td>
<td>4</td>
<td>“Traditionally, art without beauty would be seen as a contradiction in terms. As odd as it may sound, calling an art piece beautiful nowadays” – is “nowadays” a word, Hmm? “may not be taken as a complement” and she just goes on. But that’s the premise for everything else she talks about. Everything else that happens after that is about the question of beauty and the fashion-ability of beauty is more what she is talking about. How beauty used to more a prerequisite and now its almost a negative because things have turned around to a social commentary and activism. (Dave, 1) I liked the way the person who writes that defines what they are going to do in the first paragraph. . . . That’s good writing. I think that the essence of what they are doing should be stated right at the beginning. (Joe, 1) It opens with the basic argument. It’s set up nicely. The idea that this painting contains references that go beyond the specific image, has to do with the broader context and the attitudes of the artist. (Mark, 1) The paper has a clear main point, which appears at the end of the first paragraph. Which is where you’d expect to find it. Lines eight to eleven. Last four lines of the first paragraph. (Tracy, 1)</td>
</tr>
</tbody>
</table>
Appendix G. Codes, Code Descriptions, and Results for Text-based Characteristics and Participant-based Characteristics

* = 4 (all) participants mentioned this characteristic  
+ = 3 participants  
× = 2 participants  
1 = 1 participant  
= none

<table>
<thead>
<tr>
<th>Text Characteristic Code</th>
<th>Description</th>
<th>ART</th>
<th>BIOL</th>
<th>PSYCH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRUCTURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Focal issue</td>
<td>Establishes a focal issue through a statement(s) that delineates scope, often by a thesis statement or hypothesis.</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>2. Organization</td>
<td>Sets up global organizational expectations and then fulfills them.</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>3. Coherence</td>
<td>Forms relationships across ideas by paragraphing, using transitions, consistently referring to concepts (e.g., a word or phrase is used throughout the text to identify the same concept).</td>
<td>+</td>
<td>+</td>
<td>**</td>
</tr>
<tr>
<td><strong>DEVELOPMENT OF IDEAS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Definition</td>
<td>Defines terms, operationalizes concepts.</td>
<td>1</td>
<td>×</td>
<td>**</td>
</tr>
<tr>
<td>5. Evidence and explanation</td>
<td>Develops or supports ideas by providing evidence and explanation.</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>6. Contextualize</td>
<td>Places the student writer’s ideas, focal issue, or results in the context of what’s already known, typically by comparing or relating to other sources.</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>7. Hook</td>
<td>Opening paragraph captures the reader’s attention.</td>
<td>×</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8. Inference</td>
<td>Makes inferences from data or evidence.</td>
<td>+</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9. Significance</td>
<td>Justifies or provides rationale for the importance of the text’s focal issue.</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>10. Complex</td>
<td>Contains complex ideas; goes beyond superficial, commonplace ideas; reveals deep content knowledge; goes beyond repeating of sources; indicates sophistication of ideas and thinking; suggests nuanced thinking.</td>
<td>**</td>
<td>**</td>
<td>×</td>
</tr>
<tr>
<td>Text Characteristic Code</td>
<td>Description</td>
<td>ART</td>
<td>BIOL</td>
<td>PSYCH</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------</td>
<td>-----</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>11. Tell a story</td>
<td>Tells an “academic story” about the text’s focal issue through background information, discussion of problem, and solution or results.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Unique contribution</td>
<td>Contributes to the existing body of knowledge on an issue.</td>
<td></td>
<td></td>
<td>✗</td>
</tr>
<tr>
<td>13. Voice opinion or stance</td>
<td>Voices the student writer’s opinion, stance, observation, belief, idea, hypothesis.</td>
<td>✗</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

**RESEARCH QUALITY**

| 14. Plagiarism          | Avoids plagiarizing. | ✗  | 1    | ✗     |
| 15. Sources             | Uses reliable and valid sources in regards to type, publication date, expertise of author. (Sources include library items, Internet sites, and personal communications.) |     |      | ✗     |

**GENRE ELEMENT**

| 16. Title               | Informs reader of text’s focal issue in the title. | 1   |      | ✗     |
| 17. Abstract            | Opens with a stand-alone paragraph that summarizes the entire paper. | ✗   |      | ✗     |
| 18. Methods             | A “methods and materials” section that describes the methods used to collect data or evidence. | ✗   |      |       |
| 19. Results             | A “results” section that provides the results obtained through the stated research methods. | ✗   |      |       |
| 20. Data display        | Incorporates tables, figures, charts, pictures, graphs. | ✗   | 1    |       |
| 21. Conclusion          | Ends with the appropriate elements of a concluding paragraph or section. | 1   |      | ✗     |

**LANGUAGE AND STYLE**

<p>| 23. Jargon              | Employs jargon instead of student writer’s own words or simple language. | ✗   | ✗    | ✗     |
| 24. Poetic              | Contains poetic or imaginative words, phrases. Rhythmic. | ✗   |      |       |
| 25. Tone                | Conveys a mood such as boring, monotone, spirited, formal, academic, conversational. | ✗   | ✗    | 1     |
| 26. Unambiguous         | Uses unambiguous sentences. | ✗   | *    | +     |
| 27. Word choice         | Chooses precise, effective words. | ✗   |      | +     |</p>
<table>
<thead>
<tr>
<th>Text Characteristic Code</th>
<th>Description</th>
<th>ART</th>
<th>BIOL</th>
<th>PSYCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RULES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Citation</td>
<td>Follows a style guide's rules for citing sources.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GENERAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Interest</td>
<td>Appeals to the reader because it provokes reader interest, piques reader curiosity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Audience</td>
<td>Communicates to an average reader; communicate so that a non-specialist could understand.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Publication</td>
<td>Achieves a quality that is close to publication quality.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant-based Code</td>
<td>Description</td>
<td>ART</td>
<td>BIOL</td>
<td>PSYCH</td>
</tr>
<tr>
<td>Discipline</td>
<td>Participant's perceived influence of the discipline (the academic community) on his/her evaluation or view of student writing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Participant commented on the possible gender of the student writer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>Participant's perceived ability to evaluate the student text because of own knowledge, knowledge of assignment, or knowledge of genre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned</td>
<td>Where and how participant learned to write</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student capability</td>
<td>Participant’s perception of students’ preparedness for college writing, writing capabilities of undergraduates and seniors (particularly majors).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student circumstances</td>
<td>Participant inferred the student circumstances surrounding the production of the text (e.g., student did not have sufficient time to complete the assignment, student had completed prerequisite courses).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td>Participant’s strategies for teaching writing-intensive courses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant-based Code</td>
<td>Description</td>
<td>ART</td>
<td>BIOL</td>
<td>PSYCH</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Tradition</td>
<td>Participant-identified tradition, practice, or value of the academic/professional community</td>
<td>⭐️</td>
<td>⭐️</td>
<td>⭐️</td>
</tr>
<tr>
<td>Values</td>
<td>Participant's beliefs about the value of learning to write, being a good writer.</td>
<td>⭐️</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Writing across the academy</td>
<td>Participant’s perception of good writing in academic communities across the curriculum, writing in other academic communities.</td>
<td>⭐️</td>
<td>⭐️</td>
<td>⭐️</td>
</tr>
</tbody>
</table>
### Appendix H. Text-based Characteristics Noted by Individual Participants

**ART**

<table>
<thead>
<tr>
<th>TEXT CHARACTERISTIC</th>
<th>MARK</th>
<th>DAVE</th>
<th>JOE</th>
<th>TRACY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish a focal issue</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>2. Set and fulfill organizational expectations</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>3. Create coherence</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Define terms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Provide evidence and explanations</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>6. Contextualize the writer's ideas, focal issue, or results</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>7. Hook the reader</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Make inferences from data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Justify significance</td>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>10. Contain complex content</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>11. Tell an “academic story”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Make a unique contribution</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>13. Voice student’s opinion/stance</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>14. Avoid plagiarizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Choose reliable and valid sources</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Inform reader through title</td>
<td></td>
<td></td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>17. Summarize text in an abstract</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Describe methods in methods section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Present results in results section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Incorporate data displays</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Conclude effectively</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Avoid wordiness</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>23. Employ jargon or technical terms</td>
<td>YES: negative quality</td>
<td>YES: negative quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Include poetic phrases and/or rhythm</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>25. Set the tone</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Use unambiguous sentences</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>27. Choose precise words</td>
<td>YES</td>
<td></td>
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## Biology

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References


ACT. (n.d.). Collegiate assessment of academic proficiency. Iowa City, IO: ACT.


