27 The contributions of North American longitudinal studies of writing in higher education to our understanding of writing development

Paul Rogers
George Mason University

For many decades researchers have investigated the development of writing abilities (Britton, 1975; Applebee, 2000). While this research has included attention to children's acquisition of print literacy prior to schooling as well as writing in the workplace and the professions, a good deal of this research interest has been sustained by the need for an evidence-based foundation for the teaching and learning of writing in schools. Longitudinal studies in particular with their emphasis on change over time and across contexts have proven a particularly appropriate method in understanding writing development. As Emig (1971, p. 95) noted in her pioneering work

Longitudinal case studies of a given sample of students, following them from the time they begin to write in the earliest elementary grades throughout their school careers, up to and including graduate school ... would make better known the developmental dimensions of the writing process, both for the individual and for members of various chronological and ability age groups.

To date, no studies of the scope for which Emig called have been conducted; yet, in North America a number of longitudinal studies of writing have been conducted, particularly in higher education settings.

Methodologically longitudinal approaches have proven to have incorporated four out of the six levels of inquiry in research on the composing process proposed by Bereiter and Scardamalia (1987, p. 34): reflective inquiry, empirical variable testing, text analysis, and process description. Rather than comparing cohorts to control groups, as in theory-embedded experimentation, findings for these studies were derived by examining changes in the performances, attitudes, beliefs, and values of the participants. Moreover, they were based on viewing events and their impact on the cohorts or participants as they occurred over time, and did not include experimental interventions.
For a variety of reasons these studies do not, however, allow for direct causal arguments: the high number of variables bearing upon different units of analysis; the small incremental nature of change; the complex interrelationships between observed phenomena; and the near impossibility of determining the extent to which an individual variable contributed to an overall perceived change. However, the studies reviewed here have added much to our understanding of writing development; in particular, they have contributed to the generation of valuable hypotheses concerning how people learn to write and the impact of writing on learning, and they have provided a rich description of the multiple variables that contribute to the development of writing abilities.

The earliest longitudinal studies of writing focused on children in their early years of schooling and the development of print literacy (Tierney & Sheehy, 2005). Loban (1963), for example, undertook a longitudinal study of 338 urban students during the entire course of their K–12 schooling showing that socioeconomic factors played a significant role in the development of their reading, speech, and writing. Rental and King (1981, 1983) followed 36 children stratified by sex, socioeconomic status, dialect, and school at intervals of four months over the children's first four years of schooling. Primarily using an analysis of student narratives, this study looked at the transition to writing from earlier forms of literacy. The scarcity of such studies attests to the many challenges of longitudinal research, including high attrition rates, the need for significant human and financial resources to cope with logistics and large quantities of data, and the desire for quick results by funding sources. In spite of these difficulties and because of the urgent need for evidence regarding the need for and efficacy of writing instruction in higher education, a number of researchers have conducted longitudinal studies of writing in North American colleges and universities. In the rest of this chapter I summarize the developmental findings of these studies, looking first at single-subject longitudinal case studies, and then the multi-subject longitudinal studies.

The earliest longitudinal case study of a college writer was Lucille McCarthy’s (1987) dissertation study. Conducted at a private liberal arts university between 1983 and 1985, McCarthy used classroom observations, informal discussion, textual analysis, think-aloud protocols, as well as retrospective and semi-structured interviews, with teachers and her subject to investigate how the student came to understand the requirements of different disciplines and teachers, and how the student produced the writing to meet those demands. McCarthy found a great similarity among assigned writing tasks; yet, the students attentional focus was different on each task, and he was unable to identify the connections among the tasks, i.e., the student interpreted each writing situation as being totally different from other writing tasks. McCarthy’s research highlighted the dominant role the immediate environment of the classroom played in the student’s learning, and described other factors which influenced the student’s writing success: the role the writing served for the student personally, the impor-
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cance of teacher-student relations including differences and similarities in ethnic and class backgrounds, and the learning that resulted from the student's interactions with peers and their writing.

Haas (1994) described the rhetorical development of one biology major whom she followed between 1986 and 1990 at a private research university. Through extended, minimally structured, and discourse-based interviews, classroom observations, and think-aloud protocols, Haas sought to understand "if students' views of academic discourse change over the course of their college careers" (p. 46), and more specifically if they recognized "the rhetorical nature of scientific action and scientific texts" (p. 30). Haas found in her subject a growing awareness of the rhetorical frame supporting written discourse, as the student began to see "behind scientific texts are human authors with motives" (p. 32). Haas claimed it was not the explicit introduction of theories of discourse which led to the development of her subject's growing awareness of the social dimensions of scientific writing; rather, the student developed new ideas concerning the nature of disciplinary discourse through interaction and activity. In particular, work with scientists in the lab helped her to see more clearly the human agency involved in text production and the social context in which texts operated. Changes to her perception of academic discourse influenced the way she approached her writing, i.e., she moved from merely reporting what her textbooks said to understanding that authors are having a conversation. Haas's research suggests that in order to understand the development of student writing abilities researchers must investigate student's pre-existing conceptions of texts at the beginning of their college career, observe ways in which these conceptions change, and note the variety of factors influencing their change, especially in relationship to a rhetorical or social understanding of the ways texts operate within specific communities of practice.

Undertaken at a major private research university between 1990 and 1993, Beaufort's (2004, 2007) study was not concerned with the general development of writing abilities; instead, it attempted to describe the development of one college student in learning to write history in order to further a model of disciplinary writing expertise. Using interviews, textual analysis, and consultation with disciplinary experts on history writing, Beaufort aimed to understand "how expertise in history writing might be characterized; what developmental changes occurred that were related to writing; and what factors contributed to the development of the subject's history writing skills" (2004, p. 137). The results of her study show the complex, simultaneous, interweaving of multiple factors in the development of discipline-specific writing expertise, and how a writer may develop in one area but not another. Beaufort argues that mature members of the community of professional historians choose appropriate genres for appropriate purposes, but in the student's case the genres and purposes for the writing in his history classes were unclear: the subject described assignments as either the regurgitation of content or general explorations of
broad subject matter. Hence, his texts approximated features of several genres, and often exhibited different purposes within the same document (2004, p. 162). However, genre awareness gains did include a movement toward the formal register of history writing, and some of his texts approximated aspects of authentic history writing.

The student’s history writing did improve across his freshman, sophomore, and junior years: the student made gains in subject-matter knowledge including “some understanding of historical themes, but his key interpretive skills were still weak” (2004, p. 154). The subject's critical-thinking skills (what Beaufort refers to as the procedural aspect of subject-matter knowledge) were not consistently applied. While the student’s purpose for writing changed slightly from writing for self and grades toward writing for the discipline of history, “The classroom discourse community took precedence and was, in fact, the only social context the student was aware of, rather than any sense of the larger disciplinary discourse community” (2004, p. 150). Beaufort reports that the subject was unable to make the kinds of writing-related rhetorical choices that would be considered an authentic part of the discourse of historians. There were, however, signs that the student was beginning to understand what historians do when they write, and that he was to some degree attempting to take on features of that identity: he was beginning to understand how historians analyze historical texts and through these texts take on the analysis of broader social events. However, what the student learned about history writing seemed to happen inferentially rather than through explicit instruction.

The only longitudinal study dealing explicitly with second-language acquisition, Spack (1997) reported on a student she followed for two years using classroom observations, textual analysis, interviews, and informal conversations. She wanted to understand how her subject(s) drew on multiple resources to succeed as readers and writers in a university setting, and what features of the subject’s linguistic, educational, and cultural background constrained and enabled it to manage coursework. Spack found that the student matured as a writer and reader as she received meaningful input from numerous classroom experiences; she linked the student's writing development to constant practice, subject-matter immersion, and “talking about her projects with those who could share their expertise” (p. 47). In the beginning of the student’s experience, linguistic and cultural factors impacted the student’s writing performance; however, in Spack’s view the student’s lack of background knowledge and difficulty with academic argument in English posed the greatest challenges later on. As the student progressed through her course of study her literacy skills developed through active engagement in course activities, especially reading. While the student’s sense of self-efficacy as a writer grew over time, she continued to perceive her most difficult writing problem as overcoming a “Japanese style of writing” (p. 46). Although the student benefited significantly from the ESL courses she took in her first year the learning did not always transfer to future courses.

Chiseri-Strater (1991) reported on longitudinal research at the University of New Hampshire between 1989 and 1996, following six. Her research interpreted the literacy demands upon the student’s point of view through interviews with students, informal conversations, and textual analysis of writing tasks, discipline specific for the student as they moved through academic life. Moreover, the student groups, and in class modeling never generated totally in isolation; texts served as a foundation. Furthermore, students came to understand that is their attention moved away from the “sources and interpretation” (p. 21). However, this learning differences found between classroom discourse community and the students' writing development occur, undergraduate years. The change in the student's writing across their college career was when he developed, more coherent, mature, with more authority; their less personal assurance and purposes. They also provide detailed comments, reflection, self-fashioning, and interests to personal development, shaping student interests are closely implicated.

Herrington and Curtis pointing with students pre-existing writing experiences, both personal shaping student perceptions. They relate to and works in parallel place in students' lives, in particularities to revise, hard work and writing topics also contribute. Emphasizing the way classroom discourse community illustrate how supportive classroom discourse community, growth, and provide examples.
Longitudinal studies and writing development

Chiseri-Strater (1991) reported on two students she followed at the University of New Hampshire between 1987 and 1988—although she began following six. Her research interests included understanding “how students interpreted the literacy demands made on them and what it meant from the student’s point of view to be literate in a university” (p. 184). Drawing upon interviews with students and teachers, classroom observations, informal conversations, and textual analysis, Chiseri-Strater reported that texts, writing tasks, discipline-specific knowledge, and language provided support for the students as they moved toward greater levels of participation in academic life. Moreover, through class discussion, reading and writing groups, and in class modeling, students begin to see that their ideas were never generated totally in isolation, and that the reading and writing of texts served as a foundation from which writers make new knowledge. Furthermore, students came to a tacit understanding of intertextuality, that is their attention moved away from focusing on the lone writer and shifted instead to the “sources and social contexts from which discourse arises” (p. 21). However, this learning was fraught with difficulties because of the differences found between courses that even in the same discipline use writing and classroom discourse in very different ways (see also Thaiss & Zawacki, 2006).

Herrington and Curtis (2000) investigated the development of four students between 1989 and 1993 at the University of Massachusetts, Amherst (the original cohort was 18 students). In their case studies they integrated interviews with the study participants and their teachers, textual analysis, and classroom observations, and describe, using chronological narratives, the students’ writing development and personal growth through their undergraduate years. The cases show positive change in the students’ writing across their college experience: “students writing became more developed, more coherent, more surely articulated; further, all were writing with more authority; their later writings conveyed more of a sense of personal assurance and purpose in communicating with readers” (p. 357). They also provide detailed descriptions of the way that writing for self-reflection, self-fashioning, and participation contributed to the students’ personal development, stating that “students’ personal histories, goals, and interests are closely implicated in their learning” (p. 124).

Herrington and Curtis point to many influences on development beginning with students pre-existing abilities, cultural backgrounds, and prior writing experiences, both positive and negative, which contribute to shaping student perceptions. They posit that writing development is interconnected and works in parallel with other forms of development taking place in students’ lives, in particular development in reading. Opportunities to revise, hard work and effort, and student choice and interest in writing topics also contribute to the development of writing abilities. Emphasizing the way classroom contexts dominate student concerns, they illustrate how supportive classmates and their texts contributed to student growth, and provide examples of the significant role teachers played in...
student writing development. For example, the ways that the presence or absence of “scaffolding that is specific to the writer” (2000, p. 93), clearly defined course and assignment expectations, and a responsive teacher attitude in relation to feedback can constrain or promote higher levels of literacy.

Sternglass (1997) followed 53 study participants between 1989 and 1995 at the City University of New York (CUNY), through their initial composition courses into their upper division courses—in her published accounts she reported on nine. Using interviews, classroom observations, surveys, and textual analysis of student writing and course materials such as syllabi and instructor comments, she sought to understand “the ways in which the development of complex reasoning strategies were fostered by writing, the role that writing plays in learning, and how the multifaceted social factors in students lives affected their academic progress” (p. xiv). She also looked beyond students’ academic development and sought for “a full and rich picture of [student’s] development as whole persons” (p. xiv). While all of the students in her study developed as writers their growth was “neither neat nor linear” (p. xiv). The role of writing in their overall growth was very important for “only through writing did they achieve the insights that moved them to complex reasoning about the topic under consideration” (p. 295). Specifically, all of her subjects “were able to move beyond automatic acceptance of facts to recognize that new insights could be provided that might alter some unexamined assumptions in their field” (p. 295). Students also grew in their ability to create new knowledge for themselves through the integration of their own experience and academic discourse: “The worldviews of all students impinge on their attempts to make sense of the academic perspective and to integrate their experience into it” (p. 296). She claims that the relationship of college material to student’s experience, especially the issues of race, class, and gender on multicultural urban populations is significant.

Sternglass argued that early instruction in composition was critical to fostering critical reading and writing skills, and was especially important for students with poor academic preparation who “have the potential to develop the critical reasoning processes that they must bring to bear in academic writing if they are given the time” (1997, p. 296). Her longitudinal perspective allowed her to frame composition as “only a single step in the progression of student writers” (p. 141). Qualifying the ways instruction influences writing development, Sternglass argued, “Writing instruction needs to be thought of from a long term perspective and issues of content and form should be pursued at every level, both in composition courses and in content level courses” (p. 160). Moreover, the types of tasks students are asked to perform both for writing and examinations, and institutional practices such as grading contribute greatly to creating “teaching facilitated learning” (p. 195), and “the enculturation of students into academic cultures” (p. 24). The nature of assignments, whether they are challenging or not, the amount of previous practice and experience students
that the presence or absence of responsive teacher attitudes higher levels of achievement than were fostered by the multifaceted ways instruction was critical to their progress" (p. xiv). She and her colleagues described how the student the degree of empathy between instructor and student can be an important source of support for student development; as students progressed through their schooling, they began to develop professional relationships with their instructors who frequently served as strong role models and mentors for them.

Conducted at Pepperdine University between 1994 and 1998, Carroll (2002) followed 46 students over four years—with 20 staying through the duration of the study—to answer the question: “What do we actually know about how the writing of students develops over the course of several years of college?” Carroll’s data (portfolios of student writing, videotaped focus groups, textual analysis of student writing including instructor comments and grades, written self-assessments, interviews, and analysis of course materials) showed that students did develop new and complex forms of literacy over their four years of college through multiple interactions with teachers, peers, and texts. Carroll argues that a one-or two-semester first-year course in writing cannot meet all the needs of even our more experienced writers, for literacy skills develop slowly “as writers take on new roles” (p. xii). Carroll suggests that as students progressed through their undergraduate years they internalized a language and strategies for approaching new reading and writing tasks. For the students to accomplish the advanced writing tasks required in college they needed to grow in multiple dimensions rather than develop a general writing ability. Even students who came to Pepperdine feeling prepared and who were competent in writing certain kinds of argumentative and research writing were challenged by the greater analytical demands and presentation concerns of college writing; however, it was in working through these challenges that students developed as writers.

Sommers (2002) conducted a longitudinal study of 422 students at Harvard University between 1997 and 2002. Drawing upon interviews, surveys, and textual analysis—including writing assignments, student papers, and teacher comments, Sommers and her colleagues set out to gain a comprehensive view of the role writing plays in the college years, to document students’ first-year writing experiences outside of their required expository writing courses, and the way students talk about writing changed throughout their undergraduate years. Although a complete report of the study has never been published, one finding to emerge was that students appeared to make the greatest gains in writing when they saw in writing a larger purpose than fulfilling an assignment (Sommers & Saltz,
2004, p. 139). While Harvard students clearly valued writing their sense of interest needed to be sustained throughout their college career, by first accepting a novice role, then shedding it as they progress through their college careers. Sommers (2007) argues that feedback on writing plays an important role in undergraduate writing development “when, and only when, students and teachers create a partnership through feedback—a transaction in which teachers engage with their students by treating them as apprentice scholars and evolving writers, offering honest critique paired with instruction.” Sommers concludes that when students have been taken seriously as apprentice writers, and when instructors model the role of an attentive reader, such comments function to anchor students in their academic lives and, ultimately, make a vast difference in their college writing.

In addition, Sommers argues that growth in writing knowledge and skills is not always immediately evident in student texts. In fact, gaps between what students know about writing and what they can perform can be observed throughout the undergraduate years. This sleeper effect between what students report understanding and what they can consistently perform presents additional challenges for writing researchers, as several studies of writing at the college level suggest that students regress as well as progress as writers throughout their college experience (see, for example, Haswell, 2000, p. 310).

Haswell (2000) conducted a quantitative longitudinal study that used a direct comparison of writing samples written by the same 64 students during their first and third year of college. The goal of Haswell’s study was to “document normal longitudinal changes in the writing of students during the first five semesters of college, changes associated with the performance of competent post graduate workplace writers” (p. 324). This empirical study of texts employed a theoretical frame that held the work of professional writers as the direction toward which students develop (p. 337).

Writing samples were drawn from each participant when they entered college and in the first semester of their junior year. In order to combat the attrition associated with longitudinal studies, Haswell drew his random sample after the students had completed the writing in their junior year. Analysis of the texts was conducted using a group of eight measures condensed and refined from Haswell’s earlier studies. No significant differences in the random sample in terms of pre-existing abilities (p. 330) or gender emerged; also, neither the order of the prompt nor the rhetorical frames from which students could answer showed any difference. Eight of the nine measures showed statistically significant change for the group; still few of the students in the sample show “wholesale advance across all eight measures and some record hardly any change from freshman to junior year” (p. 333). In the same way the focus on individual cases in the other longitudinal studies reviewed here prohibits the generalization of effects, Haswell’s shows how conversely focusing on “group norms hides individual differences” (p. 333). While this study provides clear empirical evid-
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the junior year, many questions remain.
Lunsford and her colleagues conducted a longitudinal study of writing between 2001 and 2006 at Stanford University (ssw.stanford.edu), which examined the writing practices and development of a random sample of 12 percent of Stanford's incoming class of 2001 (n=189), through their undergraduate years and into their first year beyond college. Using semi-structured interviews, textual analysis, and surveys, the Stanford Study of Writing was the first longitudinal study of writing to collect student writing through an online database and to pay systematic attention to students' extracurricular writing. Additionally, the collection of data in the students' first year post-graduation provided insight into the development of college students' writing abilities as they entered graduate school or began professional careers, and helped to address issues of learning transfer across multiple contexts.
The study had several major goals: "to provide an overview of student writing at Stanford; to trace student development in writing across a five-year period; and to use findings to inform writing instruction at the institutional level." In addition, the study consciously sought to make useful contributions to longitudinal studies of writing and to the teaching of writing across the disciplines. Stanford students reported being deeply engaged with writing in and out of class; for these students, extracurricular writing was very often more important than in-class writing. Across the five years of the study, participants' understanding of the scope and function of writing also changed considerably, from fairly instrumentalist definitions of writing to writing as a way of managing and making sense of enormous amounts of information and as a way of creating new knowledge.
Rogers (2008) has reported on 40 of the Stanford Study of Writing participants, addressing the processes and products of their writing development through an analysis of interviews and a criterion referenced scoring of students' academic writing across the five years of the study. Analysis of this data indicates that students developed through social interactions that took place at two levels: first, through interactions with the college curriculum itself; second, and more importantly, students grew through dialogic interactions with teachers and peers, that is, writing focused conversations (written or spoken) that were ongoing, invited active response, and which were addressed to the individual writer’s thinking and ideas. The actual mechanism of development was fine tuning in which writers adjusted, synchronized, and coordinated their writing with readers and teachers, as well as disciplinary and professional communities of practice. As students moved through the undergraduate curriculum and pursued disciplinary specializations their writing showed statistically significant growth in a number of important knowledge domains: rhetorical knowledge, genre knowledge, and domain-specific content knowledge, including critical thinking and argumentation. Moreover, student writers developed across
these multiple dimensions in a nonlinear fashion in the direction of increased, specialized, social participation. At the time of this writing, data analysis continues on the Stanford Study and is focused on issues of audience, agency, and collaboration.

Discussion

While these studies demonstrate that writers develop across their college years in multiple ways, defining writing development remains a difficult task, as writing is a complex-cognitive and situated-social activity. Writing development therefore must always be seen as highly contextual. Moreover, theories and standards of development are cultural inventions rooted in changing social practices which are also in flux; therefore, tracing what counts as competence and development means invoking theoretical frames, not merely reporting empirical data.

The studies reviewed here provide evidence that writing develops in multidimensional and nonlinear ways in higher education, supporting Kellogg's (2006) model of development, which suggests that important aspects of writing development take place in and beyond the college years. This evidence directly challenges the idea that writing is a single general skill, which, like riding a bike, once learned is never lost (Russell, 2002). These studies also show that college students developed as writers through growth in multiple knowledge domains and by becoming enculturated into disciplinary practices (Rogers, 2008; Beaufort, 2004, 2007). As Haas (1994) noted, “at the college level to become literate is in many ways to learn the patterns of knowing about and behaving toward, texts within a disciplinary field” (p. 43). Thus, while growth in writing abilities is intimately connected to social interactions and is related to other forms of psychological and emotional change related to identity and self-efficacy, the bulk of the detectable changes exhibited by developing writers are arguably best viewed as movement toward greater levels of participation in particular communities of practice.

Additionally, the longitudinal studies reviewed here show unequivocally that students develop as writers and people throughout their college experience through interactions with a variety of sociocultural inputs. These studies also provide a comprehensive view of the curricular and extracurricular factors that contribute to the development of writers and writing abilities (see Table 27.1). While non-classroom factors influence considerably student writing development, of particular interest are those factors that relate to students’ classroom experiences; it is in the classroom where the students’ background and pre-existing abilities, teacher behaviors and talk, assignment design, writing tasks, peers, feedback, texts, and assessment practices influence students’ writing performance; moreover, these factors may be directly influenced by teachers and curriculum designers.

The studies reviewed here attend differently to these variables, as some of the studies deliberately focused upon out-of-class variables within their research design. Sternglass, Chiseri-Strater and Schil Hydra note the intermingling of personal and non-schooling factors. On the other hand, interest was in student growth within the classroom setting.
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research design. Sternglass, for example, wanted policy makers to understand the ways in which outside financial pressures affected student performance; Chiseri-Strater and Herrington and Curtis wanted to show the intermingling of personal literacies with academic literacies, and make visible the complex interplay between the development of writing abilities and development of the whole person. These studies give more attention to non-schooling factors. On the other hand, Beaufort and Haas, whose interest was in student growth within a single discipline, focused almost entirely

| Table 27.1 Factors contributing to the development of writing abilities |
|-------------------------------------------------|-----------------|
| **Non-classroom-related factors**                | **Classroom discourse** |
| Students' lives outside of the classroom or school context | What teachers say about writing in the classroom, including direct instruction |
| Psychological factors such as self-esteem, confidence, or anxiety | Peer to peer talk, reading and writing groups |
| Time – Natural development (growth, maturity, and development) | Whole-class discussion |
| Pre-existing abilities and writing experiences; cultural backgrounds, and gender | Conversation with teachers |
| Student engagement | |
| Institutional context, including assessment regimes | |
| Mentoring (in sociocultural settings) | |
| **Teacher behaviors** | **Classroom genres** |
| Teacher expectations | Teacher written response to writing, i.e., ongoing, performance-specific feedback |
| Responsive teacher attitude in relation to feedback | Model texts |
| Immediate rhetorical context, e.g., classroom and grades | Access to other student texts |
| Time to draft, revise, and reflect | Reading |
| Mentoring (by teachers) | General instructional supports: handouts, graphic organizers, assignments, rubrics |
| Repeat performance opportunities, i.e., practice | Increased domain knowledge |
| Nature of tasks | |
| Teacher supportiveness, accessibility outside class | |
on school-based factors. In this regard, the Lunsford study is the first longitudinal study to pay systematic attention to both school and extracurricular writing.

These findings confirm Emig's notion that "longitudinal case studies ... make better known the developmental dimensions of the writing process" (1971, p. 95); furthermore, they suggest the importance of constructing rich learning environments where these variables are present in ways that promote rather than constrain student learning. Finally, these factors provide us with clear variables for future inquiry, where they can be tested for correlations, their relative importance in contributing to development, as well as the varying degrees in which individual elements contribute to the varying dimensions of writing development.

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