Working Paper

Basic Skills Instruction in Community Colleges: the Dominance of Remedial Pedagogy

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BASIC SKILLS INSTRUCTION IN COMMUNITY COLLEGES:

THE DOMINANCE OF REMEDIAL PEDAGOGY

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Abstract:
A previous working paper argued, that, to understand basic skills education, it is necessary to observe classrooms to see what the "instructional triangle" involving the instructor, students, and content is like. This working paper presents the results of observing classes in 13 community colleges. It starts with a conceptualization of instruction, distinguishing behaviorist teaching, constructivist teaching, and hybrid teaching that combines the two (as well as several other dimension of quality), and provides various reasons why hybrid or constructivist teaching is likely to be more effective than behaviorist teaching.

One notable feature of remedial classrooms is the consistent encouragement and support of students. Sometimes this takes the form of support classes or Student Success courses, but often it is simply part of common instructional practice.

However, the majority of basic skills classes follow what we call *remedial pedagogy* — drill and practice on sub-skills, usually devoid of any references to how these skills are used in subsequent courses or in adult roles. Remedial pedagogy takes different forms in math, reading, writing, and ESL (where it is least common). Unfortunately, remedial pedagogy violates many of the precepts of effective instruction presented in the first section of this paper, so there are reasons to think that this approach is partly responsible for the lack of success in developmental education.

Fortunately, there are many alternatives to remedial pedagogy, some of which are outlined in this paper and many of which are further developed in Working Paper 3.

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In the previous working paper, we argued that understanding any kind of instruction, including teaching in basic skills classes, requires examining what happens in the classroom, within the "triangle of instruction" composed of an instructor, students, and content. Unfortunately, there has been relatively little research that describes community college classrooms, and — except where individual departments have organized themselves to improve instruction, profiled in Working Paper 3 — there is no tradition in community colleges (indeed, in most formal schooling) of instructors visiting each others' classes to understand what happens there. Many community college instructors we interviewed have never seen another class. A few have, particularly where subject-matter departments collaborate to examine their own teaching practices, but this is rare. So neither in the research literature nor in the community of instructors is there much description and analysis of classroom practices.

As a result, most discussion of education seems to ignore instruction itself. Cuban (1990) presents an ocean metaphor, in which waves of attention on the ocean surface (the vociferous debates about educational policy and direction,

often prompted by economic and political crises far from education) have only some influence on issues near the surface (greater effectiveness, or equity and narrowing the achievement gap, or College for All) but no influence whatsoever on classrooms buried deep beneath the waves. David Labaree (2010, 109 – 112) has noted that most discussion about education is *rhetoric*, where most reform efforts begin and end; some rhetoric is translated into changes in the *formal structure* at the federal, state, or district level; still less finds its way into *teaching practices* in the school and classroom; and *student learning* is the most difficult to improve, because it requires student participation as well.

However difficult it may be to get inside the classroom, this is the place (almost but not quite the only place) where learning does or does not occur. The purpose of this working paper is therefore to describe what instruction in basic skills looks like, based on classroom observations in 13 colleges, as well as interviews with both instructors and administrators to analyze the institutional and policy effects on instruction. (See the Appendix for more detail about the research methodology). The first section compiles several arguments about why the quality of instruction matters, partly to make the point that those concerned with basic skills need to be more concerned with the basic nature of instruction *as well as* the issues of articulation, student support, and special programs that have dominated the writing on basic skills. The second describes the dominance of one particular approach to instruction that we call "remedial pedagogy", describing practices that cannot be understood without classroom observations.

Remedial pedagogy takes distinctive forms in math, in writing, in reading, and in English as a Second Language (ESL), and it also shows up in other instructional practices including textbooks, technology, and tutoring. Unfortunately, there are many reasons to think that remedial pedagogy is among the weakest approaches to instruction, and therefore that learning and progression through basic skills sequences cannot improve substantially until other practices become more common.

Of course, there are many other ways to teach basic skills other than through remedial pedagogy. Some of these are subject-specific like Reading Apprenticeship, valuable in any area that requires reading, or the writing process approach developed by the national Writing Project. Others are approaches that can be used in any subject: the use of collaborative learning methods and group work, the development of project-based learning, and efforts to contextualize instruction by showing how it applies to different settings. We will cover these alternatives and innovations in Working Paper 3, but we will also suggest within this chapter what alternatives to remedial pedagogy look like.

I. WHY INSTRUCTION MATTERS

While it seems ludicrous to defend the importance of instruction, it often seems like the last topic anyone wants to discuss — witness the vast amount of writing about basic skills that never mentions instruction. Even in K-12

education, where a new conventional wisdom has declared the quality of teaching to be the most important element in effective schools, the discussion about what "good teaching" means has been incredibly confused. The perspective we take is that good teaching can be identified by the behavior of instructors in the classroom, not mainly by their credentials (which may reflect content knowledge only, as it usually does in community colleges), or what they know about instruction (since more extensive knowledge may not lead to improved teaching practices), or by *ex post* measures of what students have learned including value-added measures, both because of horrendous technical problems with value-added measures and because they cannot tell us what about an instructor has improved student learning. To understand basic skills instruction — or any other kind of teaching — it is absolutely necessary to enter the classroom, and no discussion about the institutional and policy contexts of teaching can compensate for the lack of observation.

Classroom practices have been described in many ways, though many observers have divided practices into two polar opposites. On the one hand are those pedagogical approaches called constructivist, student-centered, "progressive", conceptual, "active", "teaching for meaning", or innovative, while the opposite approach is called behaviorist, teacher-centered, traditional, conventional, information transfer, or passive. The first is concerned with students being active creators or constructors of their own understandings, while the second is more concerned with transferring information and procedures from

teachers (or textbooks) to students. Many different vocabularies have been used to describe these two approaches: the instruction for computer programming uses the terminology of "systematic" versus "minimalist" teaching; mathematics often uses "complex instruction" to refer to conceptual approaches; the senior author has used the terms "systems" vs. "skills" approaches to describe teaching in occupational subjects; and a confusing discussion about behaviorist "teaching" versus constructivist "learning" has taken place in community colleges.[i] These different vocabularies may refer to different aspects of instruction — behaviorism refers to the rewards and punishments that may (or may not) motivate students, constructivism is a theory of learning, teacher- and student-centered often refer to the source of expertise and often the source of talk in a classroom — so descriptions of classrooms using these vocabularies have to be understood flexibly, since different observers may use different language to refer to these two approaches.

Of course, any time there are two polar opposites like behaviorist vs. constructivist approaches, there is everything in between, or instructional practices that draw on both schools of thought.[ii] These have been called "balanced", as in balanced literacy programs, or hybrid instruction. Many recommendations about teaching, including the National Academy of Science reviews mentioned below and those aimed at postsecondary instructors (Grubb and Associates 1999, Ch. 1), in effect recommend balanced instruction.

There are at least six reasons to think that more constructivist or balanced approaches are superior to those described as behaviorist. The evidence behind these six reasons varies enormously: some of it is based on relatively well-specified statistical models, while some is simply the consensus of instructors about what works. Rather than looking for a single kind of evidence providing overwhelming "proof", whatever that would be, we should recognize that many different arguments support the use of more constructivist or balanced instruction.

First of all, some statistical evidence demonstrates that more balanced instruction, or "teaching for meaning", increases learning as measured by different test scores.[iii] My own research on high schools, based on NELS88 data, indicates that learning in math, science, reading, and history is enhanced by the way teachers use time, depressed by conventional teaching and enhanced by more balanced teaching, and increased when teachers have more control over the curriculum. Placement in vocational, general, and remedial tracks — where teaching is more likely to be behaviorist and teacher expectations are likely to be lower — depresses all test scores as well as progress through high school. Research by Knapp et al. (1995) has shown that in schools with high proportions of low-income students, a greater number of practices involving "teaching for meaning" — conceptual approaches rather than emphasis on procedure and information transfer — improves test scores. The research by Newmann et al. (2001) on Chicago elementary schools indicates that more balanced instruction

increases test scores on both basic skills tests and more comprehensive tests — so constructivist approaches do not cause students to do worse on the all-too-ubiquitous basic skills tests. The highest-improving elementary schools in Chicago were distinguished by instructionally-oriented leadership, by a coherent instructional guidance system, and by student-centered learning (Bryk 2010; Bryk et al. 2010). When we see schools (and colleges) improving learning and test scores, it often results from a shift toward more balanced instruction.

Second, the National Academy of Sciences has undertaken numerous reviews of the enormous empirical literature on instruction, including research on reading difficulties among young children (Snow, Burns, and Griffin 1998); a companion volume aimed at parents, promoting success in reading (Burns, Griffin, and Snow 1999); a report on the teaching of math (Kilpatrick and Swafford 2002); a summary of *How People Learn* (Bransford, Brown, and Cocking 1999); another on *How Students Learn*, compiling vast amounts of research on learning in math, science, and history (Donovan and Bransford 2005); and a report on engagement and motivation in high schools, a volume with substantial implications for learning in community colleges (NRC 2004). All of these clarify not only the importance of instruction, even to issues like motivation and engagement that are often thought to be characteristics of *students*, but more specifically the centrality of balanced instruction, for example by combining specific "skills" (phonemic awareness, mastery of mathematical procedures) with efforts to understand and communicate through text and with conceptual

understanding of mathematical approaches and procedures. These reports generally depend on empirical research in small settings, no one of which can be considered "proof", but the consistency across studies adds to the evidence for balanced instruction.

In particular, the review of engagement and motivation (NRC 2004) outlines several recommendations for engaging instruction. Students are more likely to be motivated in programs with close adult-student relationships; where they have some autonomy in selecting tasks and methods; where they can construct meaning, engage in sense-making on their own, and play an active role in learning; in well-structured educational environments, with clear purposes, a challenging curriculum, high expectations, and a strong emphasis on achievement; when students have multiple paths to competence, and when students can enhance their understanding of school and its relation to future goals. But most teaching in basic skills, especially the remedial pedagogy described below, does not look like this. To move to more engaging instruction, more balanced approaches are necessary.

Third, a review of the evidence on the effectiveness of professional development clarifies the importance of sustained work on pedagogical content knowledge (Little 2006). This is the application of general pedagogical approaches (e.g., use of more complex questioning, problem-based learning, student-centered procedures) to specific subjects like math, business, or automotive repair (Shulman 1967). It requires an integration of *both* content

knowledge *and* general pedagogical knowledge — rather than viewing strong instruction as dominated by one *or* the other.

Fourth, by definition basic skills instruction pays attention only to those mathematical and linguistic capacities that are considered basic, and not to conceptual abilities including those cited by Conley (2007) as part of college readiness, or "higher-order" or "21st century skills" like problem-solving abilities or communications "skills". When developmental classes confine themselves to basic skills, they do a poor job of preparing students for college-level courses,[iv] or for transfer to four-year colleges. Indeed, shifting the terminology of remediation from "developmental" education to "basic skills" instruction seems a step backward, since the term developmental education implies improvement on many dimensions of cognitive ability, not just basic skills.

Fifth, in the specific area of basic skills instruction, most students (including most immigrant students) have been taught by behaviorist methods for twelve or thirteen years of formal schooling.[v] Given these conditions, it seems inappropriate — daft might be a better expression — to try still one more round of traditional teaching. To be sure, students in community colleges may be more motivated to learn than they were in earlier grades, as they confront the challenges of adulthood. Otherwise, however, it seems absurd to try the same methods when these methods have failed so many times before. As one department chair defended his belief in group work (which he described as

"hands-on"[vi]) in place of lecture: "Inside the box didn't work in high school, so let's do something else". Another instructor, a math instructor, noted that

> If they didn't get it for the last however years of their life, most of them are not going to get it in 17 weeks. Being a former high school teacher, I know different things to do like collaborative learning — I want them to talk and do collaborative work in groups.

However, we very rarely saw any group work or student cooperation in trying to understand math issues; in these basic skills classes, students usually have an instructional relationship only with the teacher, not with each other. In conventional terms these are teacher-centered classrooms, not student-centered.

Sixth, while community colleges have many well-known examples of innovation, they can all be undermined by conventional and unimaginative teaching. For example, learning communities , where students take 2, 3 or even 4 courses simultaneously, as one way of contextualizing instruction , lack coherence when two (or more) instructors vary in their instructional approaches. As one instructor in a pairing of basic reading with Introduction to Computers related: "It's hard working with another instructor locked into a lecture format — horrible because lectures don't reach 'new students' ." [vii] Similarly, the effort to teach basic skills (including ESL) in the context of an occupational subject can be as drill-oriented as any "academic" version of basic skills. If instructors in such paired courses neglect to consult with one another, the result is two parallel courses without integration. In many ways the *structure* of instruction (the attempts to create learning communities or paired courses, the various

mechanisms of acceleration) may improve the conditions for better instruction; but without specific attention to instruction itself, a new structure may not enhance learning at all.

In the community colleges we observed, there is indeed a great variety of approaches to instruction — "there's a lot of individuality to making that decision" — replicating the divisions between behaviorist or teacher-centered instruction versus constructivist or student-centered teaching. Some instructors are frankly behaviorist, concerned with information transfer: "Mostly I lecture in my class and ask for their questions", said one. Another commented that "to be honest, I pretty much lecture, just because it's supposed to be a class at a certain time and the students are supposed to be there." This instructor did not agree with the whole notion of classes at fixed times — "I think the best way to teach stuff at this level, everything would be modularized and individualized — the whole idea of having a class at a certain time with a lecture I think is a mistake." But as long as standard practice is to hold classes, he felt he was "supposed to" lecture. (In Working Paper 3 we will examine ways of departing from conventional classes and moving toward individualized instruction). Another instructor expressed her belief in worksheets and drill, the essence of remedial pedagogy, because it lent itself to mastery earning — the notion, prevalent in the 1980s and 1990s, that students must master certain skills before advancing to the next stage.

But many of their colleagues rejected the practices of conventional teaching: "That's what I knew what to do [traditional lecturing] when I got here, and that doesn't work very well." They tended to talk in terms of "active" or "hands-on" learning, "interactive" and "problem-based" teaching: "These are not students who would just sit well and listen to a lecture." One noted that "Piaget has been talking about hands-on learning since when, years and years and years — and some people are looking at it now as like, this is new?" They try to vary their classrooms to incorporate balanced approaches, not eliminating lecturing but combining it with other methods: "We try to use for every hour, no more than 20 minutes of lecture. A lot of just student group work, student presentations." Others acknowledge using "an eclectic mix [of teaching approaches], I don't know, from other people I've known, my second grade teacher, my grad schools."

Several talked about the need for contextualizing instruction,[viii] or clarifying how any particular competence is useful in different settings, either academic or occupational. One math instructors acknowledged that "math instructors are not good at providing real-world examples", while another, when asked how he could motivate students, replied that he could

> give better illustrations — some students always tell me, I don't want to learn this stuff, it doesn't seem relevant to my life, I don't want to learn math, what is this all about? I could get better at getting, like, real-world examples and bringing them into the class . . . that would motivate them.

Note that, while he raises the issue of "relevance" that is so crucial for community college students, he hasn't yet done much about providing contextualized examples. (We examine student views about learning, including "relevance", in Working Paper 3). Furthermore, when colleges try to change instruction, they refer to many of the practices of constructivists and student-centered approaches: When one college got a Title III grant from the federal government (formally known as Aid for Institutional Development), it explicitly used it to change teaching: "The focus is on the faculty and staff development and helping them understand the learner-centered method of teaching, as opposed to 'I taught it, so why didn't they learn it'?"

So approaches to teaching vary substantially among basic skills instructors, and when they talk about instruction some of them tend to replicate familiar dimensions of instructor-centered, behaviorist instruction concerned with fact transmission and knowledge of specific procedures versus student-centered and constructivist instruction incorporating various forms of "active" and conceptual learning, often contextualized. However, there are many more dimensions of teaching and instructional quality than the traditional/progressive, behaviorist/constructivist divide — too many to have been empirically validated, so the evidence for them is often taken from the logic of practice. Some dimensions of instructional quality are supported by virtually everyone: content mastery; warm and supportive relationships with students; explicitness about the purposes of instruction; clarity in presentation; care in

providing the prerequisites for understanding before developing new material; developing checks for student understanding; using student errors to diagnose how students are thinking about a topic. Other dimensions of quality are specific to particular approaches; some might use project-or problem based learning, in sciences and occupational areas in particular, and others might not. Some instructors try to vary the classroom, changing topics or exercises every 15- 20 minutes in the interests of motivating students; others do not. Some instructors would emphasize the duration of instruction as crucial to outcomes and high standards, while other would caution that what counts is not time per se but the amount of *engaged academic learning time* (Cotton 1990).

Within each of these approaches to instruction, there are better and worse forms that instruction can take. For behaviorist teaching, the techniques of Direct Instruction suggest a careful progression of introducing a new topic, presenting it to students, having students practice with guidance (or "scaffolding"), and finally having students work independently. Behaviorist teaching that neglects this progression (for example, instructors who present a new topic or skill, and then move on to the next without scaffolding or independent performance) is likely to leave some students without mastery of the new topic. For constructivist instruction, the efforts to develop student-centered methods can work well or badly: student groups can be truly cooperative, or dominated by a few students; projects can be engaging and "relevant", or "academic" and even demeaning when they are too childish; attempts to contextualize an academic competence

can draw on contexts meaningful to students, or only those that the instructor likes.

In effect, there are some dimensions of quality that everyone agrees are important; others that may be subject-specific, or more controversial; dimensions of quality particular to constructivist teaching; and somewhat different elements of quality important in behaviorist teaching. In addition, balanced instruction requires skill in developing an appropriate mix of behaviorist and constructivist approaches, and skilled instructors can usually specify why they move from one to the other. To clarify the alternatives, the "landscape" of instructional possibilities looks like those in Figure 1. The x-axis displays, from left to right, behaviorist teaching, passing through balanced instruction, toward increasingly constructivist teaching; the y-axis describes low-quality to high-quality instruction, though quality in reality is multi-dimensional (and difficult to visualize) rather than one-dimensional. Balanced instruction seems, based on the arguments above, more effective than behaviorist instruction, or than extreme constructivist, student-centered instruction; indeed, many critiques of constructivism use extreme versions as their targets, when instructors have failed to do any direct teaching at all. High-quality teacher-centered instruction (point A) might be more effective than low-quality student-centered instruction (point F). Figure 1 displays possible combinations of instructional approaches, not their effectiveness; no one has figured out how to measure all the dimensions of instruction included in this figure,[ix] and no one can say which of these

instructional combinations is most effective. All one can say with any confidence is that movement to the right from extreme behaviorist teaching (the segment A - B) is probably an improvement, and movement toward the top (improvements in quality) are surely beneficial, if we can agree what the crucial dimensions of quality are. Ideal teaching, like that in the National Academy of Science reviews, might be described along the segment C - D, with high-quality balanced instruction. If instruction is both behaviorist and low quality, at a point like X describing a great deal of the "remedial pedagogy" we have observed, there's obviously room for improvement to the northeast.

Finally, no one has much idea about the magnitude of instructional effects in community colleges. It's possible that simple dimensions of quality — instructor mastery of content, or the warmth of teacher-student relations — make much more difference than subtle variation in student-centered vs. teacher-centered instruction, though the converse may also be true. It may also be true that the nature of instruction pales in significance compared to other dimensions of community college students' lives, like their employment and familial obligations, or other dimensions of basic skills like the lack of alignment (in Working Paper 7). From the first author's own research with high school data, the effects of different dimensions of instruction are individually small but collectively powerful, so the overall quality of instruction is among the most powerful of all school resources. But these are empirical issues than no one yet has data to address at the postsecondary level. For the moment, what is

important is to understand the different dimensions of the basic skills classroom, so we can better understand which features might be worth reforming.

II. Concern for Students

As we examined the many basic skills classes in 13 colleges, one crucial observation is that many basic skills instructors are devoted to teaching; as an English teacher said,

> I love teaching. I love seeing their results — both on a immediate basis and a long-term basis. . .and I love it when they come in and they'll say that they don't really like reading, but that [book or reading assignment] was really interesting or really fascinating.

This represents the ideal of a "teaching college" with faculty devoted to teaching and their students. Similarly, most basic skills instructors are enormously respectful of their students. They praise students lavishly; they ask about their lives, and seem to know a great deal about them. We saw almost none of the belittling or demeaning treatment of students (sometimes called "micro-aggressions"[x]) that one routinely sees in high schools, or that we have seen in more advanced classes in community colleges.[xi] In this sense basic skills instruction in community colleges rarely becomes the dreadful, destructive teaching that is so demoralizing to watch, and that is likely to push students out of formal schooling.

Here's an example of a class that highlights the amount of encouragement and support from instructors:

This is a class in basic arithmetic, with students seated in rows facing the instructor. He asks them to complete the following: "12 is what percent of 600", using the formula A – RB, or the rate R (percent) times the base B. He walks them through this problem, then changes the problem slightly: "6 is 15% of what number?" Throughout the process, he is praising students for their responses: "Excellent". "That's it"; "you've got it." Once they complete several problems, he encourages them to do a "sanity check", examining whether their results make sense given the numbers they started with. He then instructs students to work on a sheet on similar problems; he and two tutors walk around and assist students. Student are also discussing their answers with each other and explaining how they arrived at their answers. Several volunteer to work out problems at the board; one becomes quite nervous, but she gets through her demonstrations with his patience and encouragement, and the class claps when she is done. One student told the observer that she loves the class, and this is the first time she has understood math because the instructor pauses, takes his time, often asks "Is that right", "He knows where the hard places are, and gives you support at the right moment." His kindness and patience were evident, and the students showed how appreciative they were of his support.

Other colleges have recognized the extent of student anxiety, especially in math: some instructors have incorporated topics from Student Success courses in their classes; sometimes a department develops support class for a gatekeeper math class to provide other forms of support and review; one college developed a course in Managing Study Strategies, taught by an enthusiastic instructor with the persona of a caring grandmother covering such topics as study skills, test-taking tips, and ways to manage anxiety; and many colleges have adopted Student Success courses for new students, again to reinforce study skills, time management, and other dimensions of "how to be a student" — a subject we will revisit in Working Paper 4.

To be sure, the concern for students in this class, and virtually all the basic skills classes we observed, has a dark side as well. Out of concern for students and the busy conditions of their lives, many instructors place very few demands on them. Most writing assignments are one page long; much of the reading consists of a few paragraphs, or one or two pages. Aware of how busy many students are, many instructors arrange their classes so all of the work — problems to solve, reading, essays to write — can be done in class so there is virtually no homework. They also appear to feel that students are fragile, only weakly connected to the educational enterprise, and that imposing too many requirements would cause them to drop out. Unfortunately, instructors with these low levels of demand are not preparing students for college-level work, and certainly not for transfer to four-year colleges. One of the enduring problems in remedial classes, therefore, is how to impose adequate demands on students while simultaneously providing the right amount of moral and academic support so that they will continue.

III. The Dominance of Remedial Pedagogy

What is also notable about the arithmetic class just described is that it followed an approach we call "remedial pedagogy". This involves drill and practice (note the sheet of similar problems) on small sub-skills (here, solving a simple equation, but in other classes subject-verb agreement, grammar rules,

sentence-level writing, converting fractions to decimals, or solving standard rate-time-distance problems) that most students have been taught many times before, in decontextualized ways that fail to clarify to students the reasons for or the importance of these sub-skills. In some ways this arithmetic class is an improvement on most remedial pedagogy, because students do work with one another in groups sharing their solutions, and several students present their procedures at the board (so the instructor can check their logic); but in most classes there is no student-to-student interaction (in this sense classes are extremely teacher-centered) and very little public display of work or teacher diagnosis of what students understand. The basic approach has also been called part-to-whole instruction, emphasizing the small parts or sub-skills that presumably are assembled into a whole, referring to broad competencies like the comprehension of varied texts, understanding of mathematical procedures and thinking, and the ability to write in several genres. But in remedial pedagogy these larger competencies rarely are practiced or experienced in any way, so instruction results at best in students mastering small sub-skills.

Here's another example of a class with remedial pedagogy:

The instructor entered class five minutes early, but didn't interact with students. Right on time the instructor started by saying that the topic of the day (factoring linear equations) is important, but didn't explain why. The instructor commented that students might have forgotten everything because of spring break, but he didn't review what happened before the break or review the sequence of topics.

The instructor worked through one example from the text, using the conventional approach of writing the mathematical steps on the board while explaining each step orally. When one student asked "Where did that come from?", the instructor repeated the same explanation; the student still did not appear to understand. The

instructor then worked a second problem from the text, asked for questions, and responded with short answers. These are IRE questions — inquiry-response-evaluation — rather than questions elaborating the mathematical issues.

The instructor put two expressions on the board for students to factor — $16z^4 + 24z^2$ and $12x^3 + 6x^2$ — but without instructions. He circulated and provided individual assistance when asked. Several students in the back appeared to understand and were sharing methods, but other students' questions sounded as if they didn't understand at all. The instructor showed no awareness of the extent to which students did not understand the material. He commented that "we need this skill in order to factor polynomials", but again there was no reason why factoring polynomials might be important.

The instructor then shifted to a textbook example of grouping with four-term polynomials. Most of the students did not have the text with them. At the end of this demonstration, the instructor asked, "Everybody understand how it's working?" Without waiting for any responses he said, "So now try it by yourself." He circulated again, and corrected students who had done something wrong, but didn't use such problems to share potential errors or misconceptions with the rest of the class.

The instructor then provided an example of algebraic multiplication (x+m)(x+n), again without any rationale. One student suddenly complained that the instructor was explaining as if she already knew the material; she sounded frustrated, bordering on hostile, and asked him to use different colored chalk. Again, the low-key response was to repeat the same explanation, not to ask the student to explain what she did; the student complained that "This used to be fun; it's moving too fast. Show me how you get the answer."

The instructor continued to present small algebraic procedures throughout the 2 ½ hour class, without any break, circulating to provide individual help with getting the right answers, but never using students' questions to examine more carefully what they have understood.

This class is almost a caricature of what we saw over and over: presentation of a series of small sub-skills, presented without any justification for why such skills might be useful in other contexts. The class itself is calm, with only a few moments of student irritation showing through, but it's also extremely tedious, and a single method — presentation and practice — is used for the entire class. When students ask questions about the procedures, the instructor simply repeats his previous explanation rather than providing an

alternative. The instructor periodically asks a formulaic question about understanding — "Everyone understand how it's working?" — but when students make mistakes, or are obviously guessing, he provides the right answer — rather than engaging in any diagnosis of why students have arrived at the wrong answer. The instructor therefore has no way of understanding whether students are making mistakes systematically — contrary to the idea that instructors need to understand students' reasoning in order to correct it (Donovan and Bransford 2005; Shaughnessy 1977).

Other characteristics of remedial pedagogy include an emphasis on getting the right answer, rather than any conceptual understanding of why an answer is correct, or how to develop alternative "right" approaches to solving a math problem, writing an essay, or interpreting a reading passage. When instructors ask questions, these are usually IRE questions with a single correct answer, rather than open-ended questions that students might answer in different ways — for example, if they were asked about the interpretation of a reading, or author's purpose (which might vary from conventional literature to an auto repair manual to anatomy texts for nursing students). Instructors often provide the right answers if they don't get responses right away; an alternative is to rely on the same few students to give the right answers, and then to move on without checking to see whether other students understand.

Very seldom is instruction contextualized, with references to how basic reading or writing or math might be used in settings outside the classroom,

either in subsequent classes or in the world outside schooling. Math seems to exist for its own sake, and is obviously a gate-keeper; but rarely are there explanations of why mathematical procedures or mathematical thinking is necessary in occupational or civic settings, or illustrations of how math emerges in daily life. (In one class, the textbook was full of ways that instructors could ask students to collect real-life examples of math use, which might have helped them with number sense as well as the capacity known as document literacy;[xii] but the instructor ignored these elements of the text.) Reading is similarly de-contextualized; students usually read short passages, or short stories, but the variety of reading that students might do in occupational or transfer courses is rarely included. There are well-developed contextualized approaches to basic skills — for example, in learning communities where students take several courses simultaneously, or in linked courses where a basic skills course is paired with a conventional academic or occupational course — but they tend to be few and far between, and the practice of making linkages between classroom learning and the world outside the classroom is rare.

Other common problems include covering material too quickly without checking for understanding — the basis for the student's complaint in the classroom described above; this is something that often happens in K-12 education, and that may explain why so many community college students need basic skills instruction. Many instructors also use humor, or short games, to lighten the class, but these usually have little to do with fostering understanding.

Sometimes instructors circulate to provide individualized attention, but without giving other students anything to do; in these cases student quickly get bored and restless. So basic instructional techniques are often weak, as one might expect of instructors who have no preparation in teaching methods.

One problem with remedial pedagogy is that it violates almost all of the precepts for good teaching presented in the previous section. It is the most passive form of learning, with students absorbing material from the instructor; it is relentlessly teacher-centered, with almost no chance for students to participate in their own learning. It focuses on the most basic skills — sub-skills, really — and, whatever one's definition is of "higher-order" or "21st-century" or conceptual abilities is, these are missing from remedial classrooms — and so these classes are poor preparation for college-level courses or transfer that are the hope of most basic skills students. These classes have none of the characteristics of motivating instruction clarified in *Engaging Schools* (NRC 2004), and students "vote with their feet", drifting in and out of these tedious classes — and, of course, very often dropping out of remedial sequences before they finish. The lack of any context in remedial instruction, of any examples of how these sub-skills are used, means that students with intentions to transfer or to move into occupational programs have no coherent answer to the enduring question of "why do we have to learn this?" For observers like the researchers in this study, who can leave at the end of the day, these classes are painful and tedious; for

students who have to stick with them in order to make progress in their education, they must be excruciating.

Remedial pedagogy shows up in different forms in different subjects as one might expect; this reflects the meaning of pedagogical content knowledge, which is the understanding that general pedagogical practices (student versus teacher-centered instruction, project methods, or remedial pedagogy) take different forms in different content areas:

Math

There is little question that the teaching in basic math follows remedial instruction much more than any other subject. Many of the classes we observed were relentless in their emphasis on drill and practice on small skills, without any applications to the world outside the classroom. A great deal of instruction is based on little tricks for getting the right answer without understanding the underlying procedures; for example, in shifting from decimals to percents you move the decimal point two places to the right and add a percent sign (e.g., .39 to 39%; in converting percents to decimals you shift the decimal two places to the left and eliminate the percent sign, 39% to .39). In setting up simple one-variable equations to solve, there is again a mechanical process: for the problem 35% of what is 21? "what" is rewritten as X, "is" becomes an equal sign, and the word problem becomes 35% x = 21, x = 21/.35 = 60. But when word problems are given in non-standard form, then students can't use these algorithms, and they

get lost. For example, one problem gave a table of the presidents who had died in office, and then asked students to calculate the fraction of elections in which a president died; but since this was not in standard form, one student burst out with an objection: "I don't see no 'is' up there — where is the 'is'?" There's very little check for understanding on the part of most instructors — unlike the instructor portrayed at the beginning of the previous section — and students don't have any mechanisms for judging the correctness of their answers, so their answers are likely to be nearly random combinations of the numbers they have been given. The emphasis throughout is on getting the right answer, not on understanding the underlying math. Students may be able to get the right answers and pass tests, because the problems they face have been so standardized, but they seem to lack any number sense, or any understanding about what is happening when someone sets up an equation. As a science instructor in one college mentioned, someone who need her students to be facile with basic math,

> they don't have a number sense, they see symbols but they don't relate to a reality at all, you've got a word problem and how does that relate to a mathematical equations? Because [the student] has just learned patterns and manipulating equations — [the student] doesn't know what they mean, they don't represent reality.

So the routine algorithms of most math classes failed to teach students the value of math in representing other phenomena, so they can't use the math they have learned in other settings — in this case science. Math becomes a self-contained

subject, a requirement for transfer or for other courses, but not something valuable for its applications in many other subjects and spheres of life.

Many of these instructors seem to think there is only one way to teach math; as one commented, about working with a student in an electrician program, "That person may have an understanding of his environment, but math is math. He's still having trouble doing the fractions." So even though there may be ways to contextualize math — for example, to focus on the particular kinds of math that emerge in electricity or other occupational areas — "math is math", and the student needs to understand fractions in some decontextualized way before he can use them in a class on current, ohms, and resistance. As another math instructor commented, "Our math classes are terrible as far as connecting with anything real-world." But a clear alternative is to teach math in some particular context, so that students start to understand how to take some phenomenon they know and express it mathematically; a great example from a college outside of our sample was an applied math course created for HVAC (heating, ventilating, and air conditioning) technicians, where the instructor got her students to move between the heating and cooling applications they knew and the non-linear multi-equation representation of these same phenomena.[xiii] Wisely (2011) has found that students in CTE-contextualized pre-algebra are more successful than those in standard pre-algebra in passing the course, in attempting and passing subsequent degree-applicable math courses, and in passing transfer-level course work, but he also found only 10 contextualized

courses in the 35 colleges who responded to his questionnaire — so this effective and well-known method[xiv] is hardly used at all.

The effect of such mediocre math teaching on students was quite obvious: in many math classes students came late, drifted in and out, had off-topic conversations in the back of the classes, and continued to text and look up e-mail while the class was going on. The contrast was particularly stark in one college whose English department has organized to develop a coherent, non-remedial approach to reading and writing (profiled in Working Paper 3, on innovation). In that college, students in English classes were on time, engaged rather than off-task, and displayed none of the signs of disengagement that roughly the same students showed in their math classes. We note again that remedial pedagogy adheres to none of the precepts for motivation and engagement summarized in the first section of this Working Paper, and the results in classes are obvious.

A final problem, which we defer until Working Paper 3 on innovation, is that math instructors are the least likely to participate in college efforts to reshape instruction: "The people the least on board are the math instructors", mentioned one of the faculty members associated with a Basic Skills Initiative; "we haven't had as much participation from math as we would like", noted another, even as English, ESL, and counseling faculty were participating in trying new approaches to basic skills. The result is that when initiatives come along to improve instruction — from foundations, Title III, the Fund for the Improvement of Postsecondary Education (FIPSE), or from the Basic Skills Initiative in

California — math instructors are least likely to participate: "we've had no leadership in math to really connect with basic skills initiatives", so "it's a black hole".

It isn't clear precisely why math is so uniform in its adherence to remedial pedagogy. Textbooks are surely part of the problem, since most of them are relentlessly remedial in their approaches, with page after page of routine problems with no effort to develop any mathematical understanding.[xv] In a system where adjuncts are often handed a textbook and a syllabus, textbooks often determine what teaching looks like — these are less teacher-centered classes than they are textbook-centered classes. In addition, math instructors typically have M.A. degrees in math, without any preparation in teaching methods; while this is also true of most other college instructors, at least there are traditions of discussion in English that encourage more student-centered approaches, while there are few to none in math. We also noted that many math instructors in community colleges come from former eastern European countries and from Asian countries, which have particularly rigid, teacher-centered approaches to instruction in all subjects — although native-born math instructors were just as guilty of remedial pedagogy. Finally, as we will clarify in Working Paper 3, there appear to be fewer innovations in math, fewer organized groups promoting alternative approaches like Reading Apprenticeship or the writing process approach championed by the National Writing Project. Even though the math professional association, Association of Mathematics in Two-Year Colleges

(AMATYC) has written about math instruction being "meaningful", "relevant", and a "carefully-balanced educational program" combining problem-solving and collaboration with skill acquisition,[xvi] it hasn't developed curriculum materials or teaching guides that instructors can use, and the math innovations we describe in Working Paper 3 are all developed by individual departments. Instead, there seems to be a pervasive belief that "math is math", and that the only way to teach is through the method of remedial pedagogy.

Writing

One of the oddest aspects of basic skills instruction, to an outsider at least, is the division of basic skills into separate reading and writing courses. This approach assumes that reading and writing are different "skills", taught in different ways — rather than seeing speaking, reading, and writing as alternative forms of communication, as in the whole language approach. The separation of reading and writing in turn means that readings — including readings from different genres or disciplines or subjects — cannot be examined for their writing conventions, and similarly that writing exercises cannot follow models from readings. By now the separation has been institutionalized in separate reading and writing courses, sometimes in separate departments. To be sure, several colleges are now experimenting with combining reading and writing courses, or offer several reading-writing combinations alongside more conventional separate courses. But, just as remedial approaches break complex competencies like

mathematical understanding into small sub-skills, the common practice is to break communicative competence into different courses in reading and writing.

Remedial pedagogy in writing instruction is often, as it is in math, a part-to-whole exercise following strict procedures. As one instructor noted, "We find that the only way to address that [low skills at the 3rd or 4th grade level] is to break it into parts." These classes move from grammar rules (and many colleges have courses called simply "Grammar", or workshops in "Spelling") to sentence-level writing stressing correctness in grammar, usage, and spelling, then to combining sentences into paragraphs following rigid rules (there must be a topic sentence introducing the paragraph, two or three sentences of elaboration and evidence, and a concluding sentence), and then to the five-paragraph essay, where again each paragraph serves a particular role. Each of these steps may be broken into further sub-skills; for example, one writing class for ESL students uses a checklist that students have to follow for the paragraph they write:

1. The paragraph starts with a topic sentence that clearly states the main point of the paragraph.
2. The paragraph gives relevant details to describe/summarize the news story.
3. The paragraph includes at least two time transitions.
4. I use the passive voice at least once.
5. I use at least 2 words or idioms from Unit 1.
6. I include 1 – 2 sentences about my opinion of the news story, at the end of the paragraph.
7. My sentences are clear. I have chosen my words carefully and punctuated my sentences correctly.
8. I have edited my sentences for grammar (tense, word forms, number, verb form, etc.).

So writing becomes an exercise in following a specific script or procedure, producing error-free sentences and paragraphs with topic sentences and supporting sentences, rather than a way of communicating to different audiences where the form might vary with the purpose.

If students get this far in a sequence of writing courses, the next step is to conduct research, which means collecting some kind of information and then arranging it in a logical order. However, when instructors get to research, they spend a great deal of time explaining what plagiarism is since many students think that "research" means going to the Web, looking up a topic on Wikipedia or some other source, and then copying great chucks of Web material into their essays. (Of course, high schools may be responsible for students' conceptions of writing since, with English instructors facing 150 - 180 students a day, very little writing is done). In classes that focus on research and writing, a great deal of time is spent on the correct forms of citations (Modern Language Association forms, Chicago Manual of Style forms, American Psychological Association forms) and this practice returns a class to the study of correct forms and avoiding errors in citations. Because the part-to-while approach spends so little time on what the (multiple) purposes of writing are, the notion of a writer constructing an independent argument, marshalling evidence from a variety of sources, and both identifying and resolving in some ways disagreements about controversial points, the kind of writing that is required in college-level courses, or in transferring to four-year colleges, is not part of this approach.

Like math, the teaching of writing tends to be decontextualized — or, more precisely, the contexts are confabulated, or made up for the purposes of teaching. Thus the topics for writing tend to be personal essays about their lives, or reactions to small segments of writing. But students in basic writing classes are in college because they want to transfer and need to pass a series of academic courses, or because they want to enroll in nursing or business or some other occupational field. The writing requirements in different fields of study are quite varied, and occupational areas in particular usually require forms of writing that are quite different from academic writing — diagnoses in nursing or automotive, precise descriptions of procedures undertaken for medical technologists, business plans in various business courses or budget descriptions for proposed budgets.[xvii] These specific forms of writing are not taught in most basic writing classes, unless there has been an attempt to link a writing course with another academic or occupational course. (The award for the most ingenious course title in a community college goes to a basic reading and writing course developed for auto technicians called "Reading, Writing, and Wrenches"![xviii]) So students are learning how to write in a particular format, one with a certain logic and structure to it to be sure, but not necessarily the forms of writing they will encounter in their subsequent education or work life.

By and large, these writing classes are teacher-centered, in the sense that instructors (or instructors relying on textbooks) provide all the information about what appropriate writing is. In turn, students receive feedback on their writing

individually, from the instructor either correcting their essays or circulating during class time and responding to questions about writing. Students also receive feedback from tutors in writing labs and workshops, something we will explore in Working Paper 5 on student services — but here again most tutors follow remedial pedagogy and its emphasis on "correct" forms of writing.

Just a few instructors have attempted to incorporate group work into their writing classes, again on the student-centered assumption that students can learn from each other as well as the instructor, and that students may even be more willing to accept correction from their peers rather than an instructor who is, in the final analysis, the individual who will grade them. But here one of the central difficulties of teaching in community colleges often emerges: the fact that students are not accustomed to group work, or to providing feedback and correction to their peers. Here's an example of such a class:

> A writing instructor in a class with about 12 student presents the schedule for the coming weeks, including a sign-up sheet for individual conferences about writing; as an additional 6 students come in late, he repeated the instructions each time. Some students were texting and he had to repeat the instructions for them; others seemed confused by the schedule.
>
> The instructor then asked for students to form groups of three without telling them the purpose, and many students were confused about the activity. The instructor then handed out rubric by which each group of readers were to assess drafts of papers written by their peers; the rubric was a series of yes/no questions like "Does the essay have a thesis statement"? It was unclear from the directions whether students should engage in discussion about the answers to the questions, or about the rubric and its use. As the groups went to work, there were very few comments or questions about the essays themselves, and many students were chatting off-task; the group the observer focused on was more engaged with a sister's wedding, sharing pictures, fingernail length, and hair issues in the wind. The instructor was circulating, but he didn't hold students to the task, and his non-specific questions — "How are you doing?" and "Do you have any questions"?" — elicited non-specific answers. At the end he told the

students to give the essays they were reading a rating, though the scale of the rating was unclear. Most groups threw out scores without much discussion, and students were very resistant to score each other's work.

So an exercise that was intended to get students engaged in discussing and critiquing each other's work according to a rubric, and thereby understanding in the context of their own work what good writing should be, in practice fell apart, partly because of the instructor's unclear directions, and partly because students were not adequately prepared to work in groups and give each other constructive feedback. In Working Paper 4 on students, we will present numerous examples where instructors complain about students, that "they're not ready to be college students", and an instructor might claim that these students are "not ready" for the kind of academic discussion we associate with college seminars. However, the instructor and the college have done little to introduce students to the need for more active participation.

Unlike math, where the vast majority of classes we observed follow remedial pedagogy, there is somewhat more variation in the teaching of writing. Some instructors have taken their own approaches, and in Working Paper 3 we will describe the efforts of instructors to follow the writing process approach, championed by the National Writing Project. In other cases English departments have organized themselves and developed their own unified approaches to writing — just as a few math and ESL departments have done. But unless there is some structured method that can help English instructors teach writing, remedial pedagogy is likely to dominate.

Reading

Reading is a subject that, in some colleges, is only reluctantly included in developmental education. Instructors are more likely to believe that students have fewer problems reading than have math and writing problems, but many reading instructors believe that there is increased need for remedial reading despite the marginal status of the subject. In several colleges, for example, instructors bemoaned the static number of offerings despite growing need. Indeed, the high and apparently increasing rates of referring students to developmental English courses are almost entirely due to assessments in reading, since the most commonly-used assessments include reading comprehension but do not require writing samples. If there has been an increase in the need for basic reading, it may be due not only to the weaknesses of K-12 education and the failure of American culture to support reading,[xix] but also to increasing demands for more sophisticated reading abilities not only in society as a whole (Deshler et al. 2007, p. 18) but also within community colleges: transfer students need to be able to read at "college" levels, of course, but even occupational programs require high levels of reading because of the complexity of textbooks in subjects like nursing ("in the nursing program you can't get away from not having those reading skills"), business, electronics technology, and automotive occupations.

As in math and writing, there is a distinctive remedial pedagogy in reading, following a part to whole approach. One college we visited illustrates a

typical approach: there is a three-course sequence in remedial reading starting with Basic Reading for College Success, covering phonics, dictionary skills, study skills, and vocabulary; the Reading Comprehension for College Success focuses on vocabulary, reading, speed, comprehension skills, and study skills; and the third course, Critical Reading and Study Skills, emphasizes analysis, vocabulary, comprehension, and study skills once again. All students must also co-enroll in a Reading Lab focused on computer-based practice of the skills they are leaning in the classroom.

Within each of the subjects covered in remedial reading, again there is a tendency to use drill and practice — vocabulary drills, reviewing long lists of words with no more context than a sentence illustrating a word's use, are staples of these classes — as well as little tricks and procedures to extract meaning from texts: finding the topic sentence, identifying supportive ideas, identifying the thesis statement. (The similarity of this approach to topics in writing a "correct" essay suggests why reading and writing courses might be combined.) One college used a series of texts called *Reading for Thinking*, *The Effective Reader*, and *The Skilled Reader*, with tricks for comprehension like graphic organizers, study maps, and "blue boxes of strategies of how to do things," as one instructor described it. The advantage of these approaches to comprehension is that many college students have never been explicitly taught earlier in their schooling how to derive information from text, with teachers usually assuming they can pick this skill on their own; this may happen, particularly with students from well-

educated and well-read families, but it leaves at a disadvantage students from families with low levels of schooling including "the first in their family to go to college", some racial minority students, immigrant students, and those with learning disabilities (Deshler et al. 2007, p. 24-25).

One problem with the part-to-whole approach of remedial pedagogy is that each of the early steps in the sequence is necessary but not sufficient to increase comprehension, especially sophisticated comprehension. It's difficult to read without an adequate vocabulary and fluency in reading individual words, but being able to perform these sub-skills does not lead automatically to comprehension. And simple comprehension — being able to get the main idea of a text correctly, or locating ideas within a text — does not mean that the student can manage higher-level capacities like summarizing, predicting what will happen, inferring what a text has said when it doesn't state something directly, and analyzing and critiquing a text.[xx] So if instructors have not placed sufficient emphasis on comprehension strategies, or if students have not gotten to the end of a remedial reading sequence, then they may not have mastered the more sophisticated reading abilities necessary for college-level coursework. One consequence is that subject matter instructors — in history, the social sciences, general education requirements, and the like — complain about the reading skills of students who have managed to avoid taking the appropriate developmental classes.

In addition, there is a good deal of variation in what kinds of texts are used. One problem is finding motivating reading at the appropriate level; one instructor commented that "there's nothing out there at fourth grade [reading] level for college level students". In addition, a problem that also affects ESL is the goal of remedial reading: presumably the purpose is to prepare students for the college-level classes that might follow. But many classes focus on non-academic material — "modern topics, like the Healing Power of Humor", mentioned one instructor, or autobiographies of well-known individuals — and it's hard to know how these materials will help students with academic reading in the future, even if they are more enjoyable in the moment. Another issue involves different genres of reading: while the texts in many basic reading classes are drawn from literature, one department we visited has decided that they should use non-fiction only, because their students are unlikely to be literature majors and non-fiction is more likely to prepare them for the transfer courses they hope to take. But no one uses automotive manuals or the texts for medical technicians — unless there is some paired course like "Reading, Writing, and Wrenches", or a learning community with basic skills along with some other academic or occupational focus — so even in the best cases students are being prepared to read a narrow range of "academic" material.

As in writing classes, many instructors have tried to move away from lecture and teacher-centered classes to more student-centered discussion and presentation. This is, of course, part of a pattern within English in which

debating different interpretations of literature is common, though such debate is quite uncommon in the sciences and occupational subjects, where precision and a single correct interpretation of scientific findings or X-rays or business procedures is stressed. But not surprisingly classes vary not only in the extent of such student participation, but also (as in writing) in its embrace by students. In one example, in the lowest level of reading, the instructor arranged the classroom seminar-style, and the instructor stated that she uses some cooperative exercise in every class. In one class we observed, groups were assigned prefixes (like intra-, intro-, intro-, circum-) and then asked as a group to create other words with the prefix, using the dictionary if needed. But the students were confused about the exercise; there was little instructor enforcement of collaboration, and students by and large worked individually on the exercise. In this particular class the enormous range of students — from older adults just needing some review to some younger students who seemed developmentally delayed — may have impeded cooperation. They started working together only after 10 of the allotted 20 minutes were over, but what was intended as an activity where students might learn from one another turned into conventional individual seatwork.

At the other end of the spectrum, a reading instructor (an adjunct, incidentally) broke the 90-minute class into three segments. In the first she had the students read a non-fiction article about a prep school, and had the students discuss connections between the article and a character in the fictional story they were reading; she then segued into four student presentations on the novel the

class was reading, summarizing what they read, providing quotes to backup their interpretations, and giving the class a question to answer in their journals; and then moved to an exercise in which students scored an essay written by a classmate, based on a rubric rating the organization and development of the paper. Unlike the writing class profiled above, the instructor had clearly taught her students what student participation and critique should look like, so there was very little off-task talk and refusal to participate.

However, in another version of the same course, in the same college, student participation was much lower, and it was evident that participation varies depending on how the instructor directs the class. The instructor started by passing out an article, explained her expectations, and then had students read the article and write down their answers individually to seven questions by locating answers in the text — a standard comprehension exercise. She then had students discuss with one another the answers they got, and then present them to the class; this increased engagement and participation markedly. Then the instructor took over with an animated discussion of effective reading strategies, and moved to a short lecture on the seven common patterns of organization, with a handout for students to fill in with main ideas, major supporting details, and minor supporting details. So most of the class was instructor-centered, with short articles and conventional fill-in-the-blank comprehension exercises; the period of student discussion and presentation was much more engaging to students, although it was also comparatively brief. Once again, more student-

centered approaches are certainly possible, even within a remedial framework, but they depend on the skills of the instructor in managing class activities and preparing students for participation.

Of course, as in other subjects there are obvious alternatives to remedial pedagogy. Many instructors follow a whole-to-part strategy, reading entire books carefully selected to appeal to adults, with these texts then used to examine more sophisticated literary issues. For example, one instructor used a mixture of novels and non-fiction readings to explore multiple points of view, multiple themes, characterization, symbolism, literary devices, and ethnical dilemmas, and to examine the "ways in which the fiction illustrates the non-fiction, and how the fiction informs your reading of fiction" — a far cry from "blue boxes of strategies". And in Working Paper 3 we will examine the classes following the methods of Reading Apprenticeship, an approach to reading that can be used in a variety of subjects in addition to basic reading. So there is nothing inevitable about remedial pedagogy in reading.

English as a Second Language (ESL)

Instruction in ESL seems more varied than in math, reading or writing. However, there are many "traditional" classes following remedial pedagogy. Many courses are focused on grammar — the passive voice, irregular verbs, different tenses used in English, the structure of independent and dependent clauses. As in other forms of remedial pedagogy, there are lots of

decontextualized little rules: "If you use *how*, you have to use *get*, as in how am I going to get there; if you use *what* you have to use *take*, as in what are you going to take to get well" — a rule that seems incomprehensible to a native English speaker. Vocabulary exercises are also a staple of ESL following a remedial approach; sometimes these are dressed up as games — the same grammar-focused class played a version of "Jeopardy", which is really a word-recognition game without any context (and without the excitement of money being at stake) — and the instructor warned that these exercises would be on the test. Other exercises were standard CLOZE drills, filling in blanks with the "correct" words, though sometimes the correctness seemed doubtful: one sentence involved choosing one of three possibilities — "I (get, am, have) a headache", where the correct answer was *have* "because headache is a noun" — but of course *get* and *am* create perfectly appropriate sentences, albeit with different meanings. A class full of these rules and drills is almost unbearably boring, and it's hard to imagine that students can learn a new language merely by learning a set of rules. Such a class tends to neglect speaking and listening so that English language development becomes somewhat lop-sided.

Another issue, somewhat independent of whether instructors use remedial pedagogy or not, is the content that instructors emphasize. One way to distinguish *adult* ESL, as might take place in adult schools, from *academic* ESL in community colleges, is that the former emphasizes life skills — how to read a financial document or a rental agreement, how to fill out an application — while

the latter emphasizes the oral, reading, and writing competencies that will be necessary in subsequent academic and occupational courses. Some community colleges have respected this division by assigning the lowest level ESL courses focused on life skills to their non-credit divisions — "the majority of students who come here are looking for survival skills, job skills, you do through non-credit". In another case, a college created 5 levels of ESL, with "levels 1 and 2 like adult education, and those people go away when they've learned enough English, and then we get another group for the high levels [3, 4, and 5] who go into academic English." At the other extreme, in one college the ESL department has organized ESL around Learning English for Academic Purposes: "Content as early as possible, support as long as possible", as one instructor described the vision. (We will also profile this department in Working Paper 3, on departmental innovations.) But in many other cases, college ESL courses emphasize life skills. Partly this is based on a construction of what ELLs (English Language Learners) need, but it may also be the result of perceived difficulties with overly academic approaches; as one instructor asserted, "That kind of personal topic is approachable. If I give them vocational or too academic of a topic, many of these students will struggle even more." A class that combines remedial pedagogy with a life skills curriculum is therefore not only deadly, but fails to prepare students for movement into college-level courses — which is presumably the purpose of incorporating ESL into community colleges.

But large numbers of ESL courses do not follow remedial practice, and instead have students engage in wide variety of speaking, reading, and writing, *using* English in a variety of ways rather than *memorizing the rules* about English. In these classes one can see a variety of oral activities, sometimes as a whole class and sometimes in small groups; different kinds of reading, often followed by read-alouds so that students can practice speaking as well as reading; different writing exercises, again often linked to reading and/or oral presentations. This is the ESL equivalent of the whole language approach, which stresses the *use* of language for various social and academic purposes. For example, one class we observed moved in 15 – 20 minute chunks among a series of oral, written, and reading exercises, each leading to the next. The instructor claimed that

> I think it's pretty typical for ESL, because of the nature of language learning. I think we tend to think in, like, 15- or 20 minute blocks in different activities to keep people engaged. I can tell you it's a very labor-intensive prepping for our classes.

Unlike some of the classes described above, she (and other ESL instructors in this particular college) had introduced their students to group work and active participation early on, as a *necessary* element of ESL:

> I think for language learning it's speaking a language in relationship with somebody, and so I really stress in my class their responsibility when they get into groups. . . For some of my students, the classroom is the only time during the day when they're really using English.

As a result there is extensive use of English among the students in the class, but in addition she has created a link with a global studies class where native speakers interested in other countries speak with the ESL students: "My students

want to have conversations with native speakers, so we just started experimenting with it".

However, her statement that "It's pretty typical for ESL" to use varied and participatory activities is not correct, according to our observations, and the reasons for variation seem to be departmental. In her college, virtually all the ESL courses we observed were lively and varied, and we even observed a bilingual course (described below). But at a college not 20 miles away, one with an exemplary English Department that developed its own vision and pedagogy, virtually all the ESL was grammar-and drill-oriented. (Even here, however, there were pockets of innovation, especially an ESL instructor who had students read an entire novel and use that reading to develop grammar lessons, whole-to part rather than part-to whole instruction.) In yet another college, some of the liveliest classes in the entire college were ESL, but we also observed a class focusing on articles (a, an, the) and worksheets with blanks to fill in individually. In that college there had been no full-time ESL instructor for several years, and so the adjuncts hired to teach ESL were entirely on their own. The result was an incredible hodge-podge of ESL courses, with no effective assessment, no coherent sequence through the courses offered, no effort to develop a common pedagogy, and very little communication among ESL instructors — a good example of what we will call a laissez-faire college (in Working Paper 10), with instructors as well as students left to their own preferences in teaching and learning.

We even uncovered two examples of bilingual classes, rather than the conventional English-only ESL classes. One emerged when an ESL instructor happened to be bilingual in Spanish, teaching in a college where the vast majority of recent immigrants came from Mexico (as is true in California as a whole). In another case, an employer hired a number of skilled Mexican craftsmen, and then asked the local college to provide them English instruction; because one of the ESL instructors was fluent in Spanish, he created a two-semester sequence where the first semester was bilingual, gradually shifting to English-only instruction in the second semester. Although community colleges stress the enormous variety of languages spoken by their students as the reason for English-only instruction, in fact some colleges serve pockets of Spanish-speaking students, or Mandarin- or Vietnamese-speaking students, and they could create bilingual programs with a little additional effort. In general, bilingual programs are more effective than mono-lingual programs,[xxi] and so experimenting with bilingual approaches might help the progress and the English fluency of immigrant students.

ESL programs in the community colleges we studied therefore vary enormously, with many practices drawn from whole language and "active" and student-centered approaches as well as many examples of remedial pedagogy. There are many other issues raised by ESL that we reserve for subsequent working papers: the role of departments in creating coherent approaches, mentioned above; the extremely long sequence of ESL courses required in some

colleges, presenting almost insuperable barriers to getting into college-level courses; the low status of ESL on some campuses, where ESL seems to be ignored relative to basic English and math. And so, as for developmental education in general, instructional approaches are only one of several issues that must be confronted in order to improve the effectiveness of community colleges.

Remedial Pedagogy in Other Forms

There are several other instructional settings in community colleges aside from classrooms, since virtually all colleges have adopted support services for students who need additional help and attention — especially tutors, and labs for math and English where students have access to tutors as well as computer-based programs to provide additional ways of reinforcing what takes place in class. Each of these instructional settings can be examined with the triangle of instruction (in Figure 2 of Working Paper 1), where an instructor (or computer program) and a student interact around content. Each of these alternative settings has its own pedagogy as well, though almost no one talks about the pedagogy of computer-based instruction[xxii] or the pedagogy of tutorials and workshops. But this is too bad, because remedial pedagogy can show up in all these other instructional settings.

In the tutorial sessions we observed, including the help students receive in math and English workshops, a great deal of the interaction between tutor and

student is essentially remedial pedagogy, helping students get the right answers in math problems and construct grammatically correct sentences and paragraphs. As is true in most classrooms, there are few efforts in tutorials to engage in diagnostic mechanisms to determine why students are getting the wrong answers, or persist in making the same grammatical or spelling errors, and therefore errors are corrected but without the student knowing why. The tutors are usually upper-level community college students (rarely, upper-level undergraduates from local four-year colleges) with only a little training in teaching methods, so they can hardly be expected to master the range of instructional approaches that might be useful, especially for students who have failed to understand a concept in the regular class. For some purposes this kind of support may be all that is necessary, particularly for "brush-up" students who have been out of school for several years and need to brush up on rusty academic skills, or for students (including those in ESL classes) seeking additional drill in order to achieve fluidity. But for students who are still fundamentally lost in basic skills, tutors replicating remedial pedagogy are unlikely to provide much help.

Of course, this need not be the case, and several colleges have invested in tutor training — which could presumably provide tutors with approaches that stress conceptual approaches as well as procedural methods, diagnostic practices as well as giving students the answer. But such an approach would essentially have to replicate with tutors, whose own content knowledge is necessarily limited and

whose educational experiences are limited as well, the kinds of pedagogical preparation and professional development that would be required to change faculty approaches to instruction. As we will document in Working Paper 6 on institutional effects on instruction, professional development of any kind is quite limited in most colleges. If the purpose of tutors and workshops is to develope relatively low-cost supplements to classroom instruction, then it seems unlikely that colleges would invest as much in tutors as they might in faculty, and tutors and labs are likely to fall back into remedial pedagogy.

Similarly, many basic skills classes provide computer-based instructional packages for their students, particularly in math and ESL — ALEKS, Access, Academic Systems Math, Plato, Carnegie Learning Systems, Kurzweil, Hawkers Learning Systems Basic Mathematics, the Lindamood-Bell system for reading, Math Excell, the Universal Learning Design Smartext Project — an almost interminable list of computer-based programs, all bought from outside purveyors. No one has reviewed these for their pedagogy or effectiveness, though most of them come with "research" of low quality[xxiii] asserting they are "proven practices!!" However, looking at these materials even briefly clarifies that they are largely drill and practice, with decontextualized examples and word problems. They certainly provide additional practice, if that is appropriate, and they can *manage* the process of learning in the sense that they keep track of student progress through a sequence of problems and issues. But they cannot

instruct students, or diagnose why students are getting the wrong answers, and so they largely replicate remedial pedagogy.

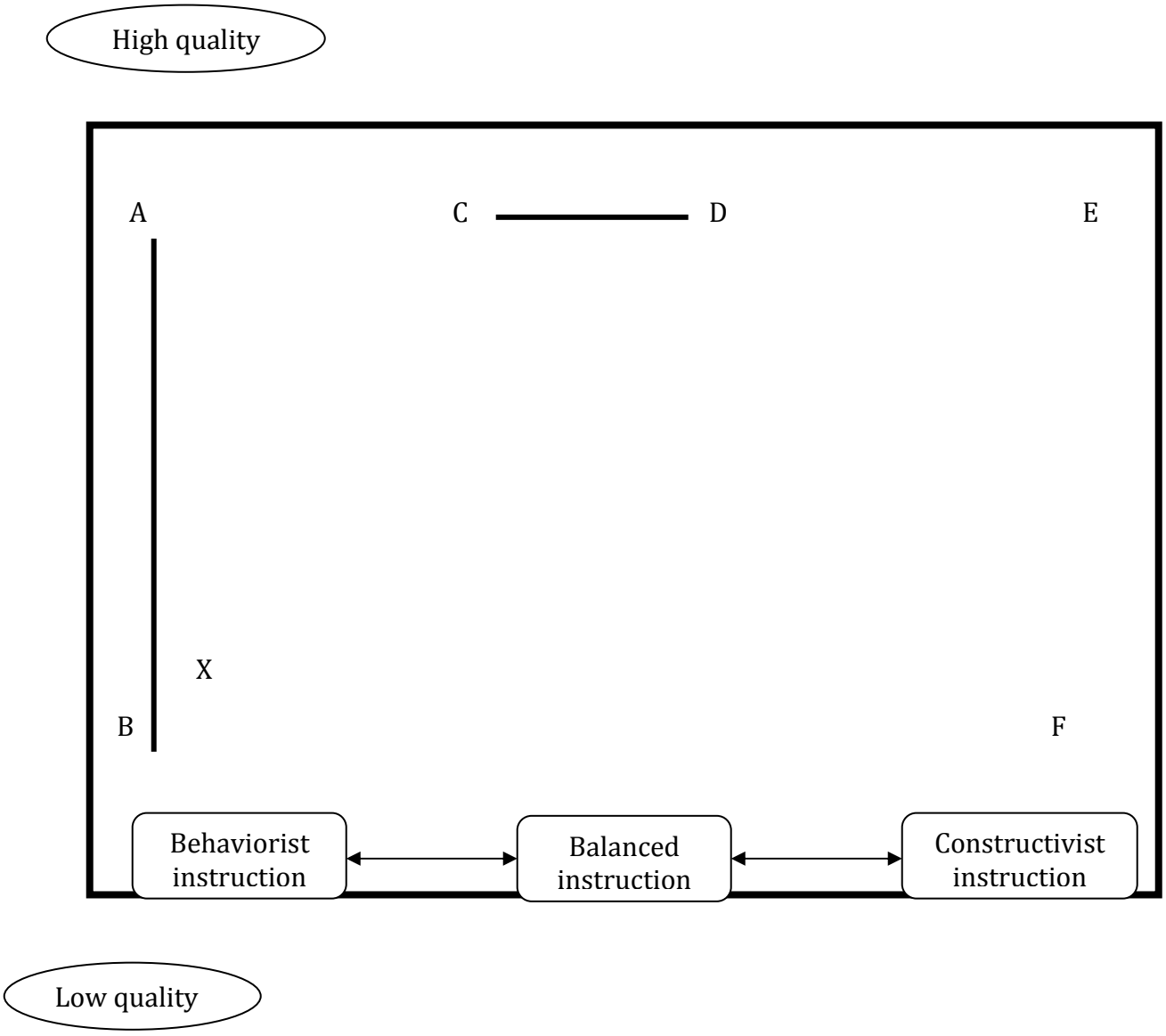
Again, this does not have to be the case. To anticipate some findings in Working Paper 3 on innovations, one math department uses statistical analysis packages with powerful graphics, to have students analyze data sets developed by the instructors. Students are therefore doing the work that statisticians do with these computer programs, not simply engaging in drill. But without asking what the pedagogy of computer-based learning is, it is all too common to fall back on the techniques of remedial pedagogy.

Finally, textbooks also have their own pedagogy, as well as embodying the content of the instructional triangle. Textbooks are particularly important given the large numbers of adjunct professors who teach basic skills: often they are handed a textbook and a syllabus, and without more guidance or professional development than adjuncts usually receive, the easiest course is simply to follow the textbook. But here too many textbooks — particularly in math and in writing, and in grammar-based approaches to ESL — have a series of decontextualized problems to solve, or lists of grammar rules and examples.[xxiv] Sometimes the texts are somewhat comical in their lack of understanding: one math text asserted in the introduction that it would teach students not only *how* to carry out mathematical procedures, but *why* they worked. However, once again the text had many decontextualized problems, without much explanation about why the procedures work; at one point the text

stated, "Of course we have a base-10 number system", assuming that students know what this is. But when students are converting decimals to fractions and vice versa — a staple of pre-algebra classes — it's clear that many students have no idea of place value, and therefore of the base-10 system. Textbooks like these *assume* what they should *teach.* As supplements to instruction, or sources of practice for students, such textbooks may be quite useful (as are drill-oriented computer programs), but when they shape basic instruction they lead right back to remedial pedagogy.

Again, there are clear alternatives, and we will review some of them in Working Paper 3, on innovations. But our point for the moment is that remedial pedagogy is insidious, affecting not only classroom instruction itself but also the textbooks, computer programs, and certain support services that shape and supplement the classroom. Given the many reasons for thinking that behaviorist approaches are less effective than more constructivist or balanced approaches, improving instruction must be one of the ways to enhance the success of remedial education.

Figure 1: The landscape of instructional approaches



Quality itself is multi-dimensional, and could refer to mastery of subject-matter content; rapport with and support for students; organization and preparation of classes; explicitness about the purposes of instruction; providing the prerequisites for understanding before developing new material; checking for student understanding and using student errors to diagnose how students are thinking.

FOOTNOTES

[i] Barr and Tagg (1995) used the term "teaching" to refer to teacher-centered, behaviorist instruction, and "learning" to refer to student-centered and constructivist methods; there then followed a great deal of talk about creating "teaching colleges", without clarifying how to do this. The problem with the Barr and Tagg formulation is that "teaching" and "learning" have conventional meanings; instructors in constructivist classrooms are still teaching, and students in behaviorist classrooms are still learning (one hopes).

[ii] To cite John Dewey on this point: In his introduction to *Experience and Education* (1938) he wrote: "Mankind likes to think in terms of extreme opposites. It is given to formulating its beliefs in terms of Either-Ors, between which it recognizes no intermediate possibilities" (p. 17). In discussing traditional and progressive pedagogies, he lamented that "the problems are not even recognized, to say nothing of being solved, when it is assumed that it suffices to reject the ideas and practices of the old education and then go to the opposite extreme" (p. 22) — in effect calling for balanced instruction.

[iii] See Grubb (2009), Ch. 2, or Grubb (2008); Raudenbusch, Fotiu, and Cheong (1998); Goldhaber and Brewer (1997); Elliott (1998); Knapp 1995; Newmann, Bryk, and Nagoaka (2001).

[iv] See especially Cox (2009), with her description of students who believe that learning means information transfer and mastery of sub-skills, while instructors are looking for more conceptual and analytic abilities. Similar evidence emerges in our current study of 13 California colleges.

[v] The structural reason that most community students have probably been taught with routine methods is the strong tendency within K-12 education to reserve more conceptual teaching for upper-track and high-performing students, with more skills-oriented teaching for the low tracks and low performing students; see, for example, Powell, Farrar, and Cohen (1985).

[vi] See Grubb and Associates (1999), pp. 106 - 119, on the various meanings of "hands-on" — basically everything that isn't direct lecture.

[vii] See the review of innovative practices in Grubb and Associates (1999), Ch. 7, presenting both positive and negative examples of innovative practice.

[viii] An enormous amount has been written on the idea of contextualization, though there seems to be much less of it in practice. See Perin (2011) for a review, as well as Center for Student Success (2009).

[ix] The empirical work cited in footnote 3 tends to look only at dimensions of behaviorism to constructivism. There is currently some research in progress, some of it funded by the Gates Foundation, on developing observation protocols to measure other dimensions of instruction more precisely.

[x] On micro-aggressions see Solórzano (2001). For more extended evidence of mistreatment in K-12 education, especially of students of color, see Grubb (2009), Ch. 4.

[xi] See especially the discussion of distressed and collapsed classes in Grubb and Associates (1999), pp. 218 – 229. For that work we kept a list of RBTs (Really Bad Teachers), who were almost uniformly instructors who belittled their students.

[xii] Basic skills students often lack number sense, the intuitive understanding of what numbers mean, their magnitudes, relationships to one another, and how they are affected by various operations. In watching them transform decimals into fractions, many don't understand place value — i.e., the meaning of 4 and 7 in the number 10.457. Document literacy is the ability to extract meaning from the documents (including numbers) we encounter in daily life like graphs and pie-charts, thermometers and other measuring devices, maps and other geometric depictions; the International Adult Literacy Survey has found enormous variation in document literacy.

[xiii] This example is described in Grubb and Associates (1999), pp. 272-73. We came across only one math course contextualized with CTE applications in our 13 colleges, and our working hypothesis is that this practice has dwindled since the 1990s. I HAVE AN INTERVIEW WITH A PT INSTRUCTOR AT COC WHO HAS A MATH-WATER COURSE THAT MIGHT BE RELEVANT. I'LL HAVE THIS INTERVIEW TRANSCRIBED, AS WELL.

[xiv] In the 1990s Grubb and his colleagues documented many examples of integrating academic and occupational education in community colleges, including basic skills or applied math courses contextualized by specific occupational areas or related areas; see Badway and Grubb (1997). Similarly, Grubb and Associates (1999) found a number of contextualized basic skills courses. However, this research found very few examples in the 13 colleges we examined, from which we surmise that this practice has dwindled.

[xv] Indeed, one text promised not only to teach *how* to get the right answer but *why* an answer is right — but as the text launched into decimals and fractions it said "of course we use a base-10 system" without any further elaboration — but in working on decimals, fractions, and arithmetic operations many students lack any understanding of place value and therefore the base 10 system.

[xvi] See the section on Basic Principles in AMATYC (2009).

[xvii] On the non-standard forms of academic skills found in occupational classes, see Grubb and Associates (1999), Ch. 4 on teaching in occupational classes, or Achtenhagen and Grubb (1999).

[xviii] See Grubb and Associates (1999), p. 272 - 273 for this particular example as well a several others integrating basic skills with CTE.

[xix] On the general decline in reading in the American population, including among people with baccalaureate degrees, see the report of the National

Endowment for the Arts (2007), *To Read or Not to Read: A Question of National Consequence.*

[xx] Again, see Deshler et al (2007), especially pp. 21 – 36. The introductory chapters are excellent guides to the questions of what reading is and how it can be taught. The volume focuses on adolescent readers, presumably in high schools and middle schools, but everything in the book is applicable to young adults in community colleges as well.

[xxi] See Genesee et al. (2006), Ch. 6, as well as August and Shanahan (2006); García (2005), especially Ch. 3; Thomas and Collier (1995); and Minami and Ovando (2004).

[xxii] But see Hodara (2011), pp. 20 – 22, where she explicitly contrasts drill and practice software derived from Skinner's behaviorist approaches with more balanced pedagogies when computer-based programs may incorporate conceptual understanding as well as procedural skills.

[xxiii] Most often, this "research" provides some examples of a few classes who have participated in the program, contrasted with other classes without the program — but the composition of the two comparison groups is unknown, the nature of the alternative is unclear, and the possibilities of particularly motivated instructors and students are uninvestigated. In the language of evaluation, most of the threats to the validity of these research findings have been ignored.

[xxiv] This is not universally true, of course. One text — Bittinger (2002) — presents the usual topics from whole numbers to solving simple equations, but also incorporate a large number of word problems — about the size of a field hockey field, the Leaning Tower of Pisa, batting averages — that illustrate the many ways math is used in daily life, and could also provide students with number sense. But the instructor chose not to use any of these examples, thereby creating a wholly decontextualized class.

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APPENDIX: The Methodology of the Study

To understand what happens in basic skills instruction, or indeed to understand any educational setting, it is necessary to understand all elements in the triangle of instruction. This requires both understanding the classroom, including the actions of instructors and students, and documenting the content of the classroom, whether that is represented in textbooks, in the instructor's materials, in class discussions, or in the computer-based instruction that is part of some classes. It also requires understanding the institutional setting of the classroom. Therefore we carried out case studies of 13 colleges in California, later supplemented by a 14th, where we could interview administrators and instructors to understand the institutional setting, observe classrooms to understand the variation in instruction, and interview instructors to understand their perspectives on their own teaching, on the institutions they taught in, and on their students. In these case studies we were not initially able to interview students systematically, though we talked with them whenever we could; however, in spring 2011 we plan to interview students at a number of colleges about their experiences in basic skills.

The thirteen colleges were chosen in different ways. We first selected two colleges well-known to the researchers, with quite different reputations, as a pilot test of the methodology we developed, including the interview protocols for both instructors and administrators; we modified these protocols after these first two visits. We then attempted to identify 3 high-quality developmental programs and 3 low-quality programs, based on the data that Peter Bahr has developed for California (e.g., Bahr 2010); with his measure of success (movement from a remedial course into a college-level course within six years, he provide us with residuals from regression analyses explaining success rates with various independent variables including race, gender, receipt of financial aid (to indicate family socio-economic status), the level at which students were assessed, and other variables. The logic is that colleges with high residuals may be high-quality in various ways, since they have very high success rates even considering the kinds of students they enroll; colleges with low residuals presumably have low-quality developmental courses. We choose three colleges with especially high residuals in both English and math, and 3 with low residuals in both subjects, and we did indeed visit these 6.

However, this method for choosing college proved to work poorly. Many of the colleges with high residuals were middle-class suburban colleges, because Bahr's data (and indeed virtually all data in higher education) has mediocre data about family background and high school performance. In addition, several colleges had idiosyncratic conditions that accounted for their success, including one located near a large state university with a number of foreign students and another with a high proportion of retired individuals enrolled for avocational

reasons. The six colleges chosen in this way provided a good mix of urban and suburban colleges, but we do not consider them high- or low-quality. One implication of the failure of this method is that systems of rewarding colleges based on raw data on success rates in remediation probably fail to identify especially high-quality programs because there are too many other variables associated with student background and preparation levels that cannot be considered with such crude methods.

For a third group, we tried to identify colleges attempting to innovate in their basic skills programs. California has funded a program called the Basic Skills Initiative since 2005-06, providing $30 million in the first year and roughly similar amounts in the next 3 years, dwindling to $20 million in 2009-10 and 2010-11, and now caught up in the general fiscal chaos of California. Each college has a Basic Skills Coordinator, and we surveyed these coordinators to ask about colleges with particular innovations such as integrating basic skills with other courses (especially CTE courses), forming learning communities, integrating student success with basic skills, or providing special forms of professional development for basic skills instructors. Based on these responses and on our desire for a geographically balanced set of colleges, we chose another six colleges. One of these did not want to participate in the study so we were left with a sample of 13 colleges. Afterwards, we conducted a visit to a 14th college that kept coming up as particularly innovative. If anything, then, our final sample of 14 colleges is biased on favor of more innovative colleges. Working Paper 3 in particular will describe some of the prominent patterns of innovations we uncovered.

At each college we interviewed the deans of instruction, of student services, the department chairs in math, reading, writing, and ESL, the institutional researcher, the basic skills coordinator and/or the chair of the basic skills committee, the head of EOPS, and any other administrators identified as important in basic skills. At the outset we did not interview the heads of Disabled Students Program and Services (DSPS) because we did not appreciate the potential magnitude of learning disabilities until we observed a number of classrooms, where both learning disabilities and mental health problems became obvious (as we examine in Working Paper 4). However, we did end up interviewing 3 heads of DSPS. We asked administrators about the magnitude of development education at their colleges, college approaches and innovations, priorities of their colleges, what the college did in response to the Basic Skills Initiative, and their perceptions about how well different dimensions of basic skills — assessment, articulation among courses, student services, professional development — were working.

We requested each college to provide us lists of basic skills instructors in math, reading, writing, and ESL; we then contacted these individuals to observe between 3 and 6 hours of class, plus a one-hour interview. Our hope was to observe and interview about 16 instructors in each college, 4 in each of the 4

subject areas. Unfortunately, the success of this element of the project varied considerably: some colleges provided adequate numbers of names and helped in setting up interviews; others seemed not to understand that we truly wanted to observe classes, and scheduled many interviews with administrators but few classroom observations despite repeated efforts.

We completed 13 case studies in 2009-10, and devoted 2010-11 to examining innovations and promising practices both in our original 13 colleges, in one additional college we visited, and in other colleges where we heard about interesting developments. We revisited 3 of our original 13 colleges to examine more deeply some of their practices, especially departments which had developed their own coherent approaches (analyzed in Working Paper 3). We observed and interviewed a group of teachers in 4 colleges using Reading Apprenticeship, interviewed and observed 4 instructors using the techniques of the National Writing Project, and sought out promising math departments in particular. It is, however, impossible to identify all promising practices, even if only in one state, because of the large number of colleges, the lack of any repositories of information, and the incredibly fluid nature of innovation in community colleges (described in Working Paper 3). But it is possible to describe some of the dominant approaches to innovation, and also to clarify how few students are reached by many of these reforms.

In many ways this research has followed the pattern of *Honored But Invisible* (Grubb and Associates, 1999), an earlier book that examined teaching in a variety of subjects including basic skills but also in academic or transfer courses, in occupational or CTE courses, in literacy practices in a variety of subjects, and in various innovations — again by observing classrooms and interviewing administrators.

List of Working Papers

WP 1: Understanding The "Crisis" In Basic Skills:
Framing The Issues In Community Colleges

SECTION ONE: THE NATURE OF BASIC SKILLS INSTRUCTION

WP2: Basic Skills Instruction in Community Colleges:
The Dominance of Remedial Pedagogy

WP3: Promising Practices in Basic Skills Instruction:
The Locus of Innovation

WP4: The Students in Community Colleges:
Faculty and Student Perceptions

WP5: Student Services:
Their Possibilities and Their Limits

SECTION TWO: INSTITUTIONAL INFLUENCES ON INSTRUCTION

WP 6: Institutional Effects on Instruction and Innovation

WP7: The Trajectory of Basic Skills:
Assessment, Alignment, and Articulation

WP8: the Money Myth:
Funding and Resource Issues

WP9: The Effects of State and Federal Policies

WP10: The Organization of the Community College;
Laissez-faire Institutions versus Learning Communities

CONCLUSIONS

WP11: Resolving the "Crisis" in Remediation