Preparing Single-Subject Teachers for Content-Based Reading Instruction:

A Working Paper of the CSU Systemwide Evaluation of Teacher Preparation

Center for Teacher Quality
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Brief Introduction to the Systemwide Evaluation

During the 1990s, campuses of the California State University initiated and implemented many changes in their teacher preparation programs. These included changes in the volume of teacher preparation and in approaches to mathematics instruction, the instructional uses of technology, and the teaching of English language learners, students with disabilities, and at-risk students in low-income schools, especially in urban districts of California. Preparing teachers for reading instruction was also modified by the CSU campuses. In 2000, the Deans of Education from all 21campuses collectively decided to initiate a systemwide evaluation to see how well the modifications in teacher preparation were working in practice. The Chancellor of the CSU System supported the evaluation by allocating funds and staff time to it.

The primary purpose of the CSU Systemwide Evaluation of Teacher Preparation is to provide uniform information to the CSU Deans of Education so faculties and other academic leaders can determine whether additional changes are needed in teacher preparation programs. An additional purpose is to enable the CSU Chancellor to assess the quality and effectiveness of teacher preparation throughout the system, and to decide on additional initiatives that may be needed. To implement the evaluation, the Deans and the Chancellor's staff in 2001 and 2002 collected information from random samples of CSU's teaching graduates, and from the K-12 supervisors of these graduates. The evaluation in 2001 compiled information provided by teachers who had completed CSU preparation programs in 1999-2000. The 2002 evaluation focused on a second cohort of CSU graduates – teachers who had finished CSU preparation during 2000-01.

Brief Introduction to this Working Paper

One focus of the evaluation has been the preparation of teachers for reading instruction. In reviewing the systemwide results of the evaluation for two years, the Chancellor's Office recently became concerned that the preparation of Single-Subject Credential candidates may need increased attention in the coming years. The results indicated that these candidates may not be prepared as effectively as their Multiple-Subject counterparts, and that their preparation may actually be declining in effectiveness. Recognizing that most of the "reading reforms" of the 1990s had focused on elementary teaching, the Chancellor's Office asked the CSU Center for the Advancement of Reading (CAR) to develop and initiate an appropriate activity to address the preparation of secondary teachers for reading instruction in their content-based classes. The Center agreed to do so and, in turn, asked the Chancellor's Office for a written summary of the evaluation findings related to reading.

Reading: Questions and Response Options in the Systemwide Evaluation

In 2001 and 2002, the evaluation invited each CSU teaching graduate to respond to the following question if she/he had earned a Multiple-Subject Teaching Credential in the CSU program.

Program Effectiveness Question for Multiple-Subject Graduates (Item 12-B-13-G)

Once you finished your teacher preparation program and earned your credential, how well prepared were you to begin to use instructional materials and to teach reading-language arts according to California Content Standards for your grade level(s)?

Response Options: As a new teacher, I was . . .

- Well prepared to begin (Response Value = 3)
- Adequately prepared to begin (Response Value = 2)
- Somewhat prepared to begin (Response Value = 1)
- Not at all prepared to begin (Response Value = 0)
- I don't know (Response Value = Missing)

Concurrently, the evaluation asked each graduate to respond to an alternative question if she/he had earned a Single-Subject Teaching Credential in the CSU program.

Program Effectiveness Question for Single-Subject Graduates (Item 12-C-23-G)

Once you finished your teacher preparation program and earned your credential, how well prepared were you to begin to contribute effectively to pupil reading skills including vocabulary and comprehension skills in your primary subject area(s)?

Response Options: As a new teacher, I was . . .

- Well prepared to begin (Response Value = 3)
- Adequately prepared to begin (Response Value = 2)
- Somewhat prepared to begin (Response Value = 1)
- Not at all prepared to begin (Response Value = 0)
- I don't know (Response Value = Missing)

In both years, the evaluation also included the site-based supervisors who had district responsibility for evaluating the first-year teachers who were CSU graduates. In elementary schools most of these supervisors were principals; in secondary schools they included principals, assistant principals and department chairs. Each supervisor was given the name of the specific teacher whose preparation was being evaluated. Supervisors were asked to answer the following question if the new teacher had a multiple-subject teaching assignment.

Program Effectiveness Question for Multiple-Subject Supervisors (Item 12-B-13-S)

How effective was this teacher's preparation to begin to use instructional materials and to teach reading-language arts according to California Content Standards for her/his grade level(s)?

Response Options: This new teacher was . . .

- Well prepared to begin (Response Value = 3)
- Adequately prepared to begin (Response Value = 2)
- Somewhat prepared to begin (Response Value = 1)
- Not at all prepared to begin (Response Value = 0)
- I don't know (Response Value = Missing)

If the newly-certificated teacher was assigned to teach in a departmentalized assignment, the school supervisor was invited to respond to a different question.

Program Effectiveness Question for Single-Subject Supervisors (Item 12-C-23-S)

How effective was this teacher's preparation to begin to contribute effectively to pupil reading skills including vocabulary and comprehension skills in the teacher's primary subject area(s)?

Response Options: This new teacher was . . .

- Well prepared to begin (Response Value = 3)
- Adequately prepared to begin (Response Value = 2)
- Somewhat prepared to begin (Response Value = 1)
- Not at all prepared to begin (Response Value = 0)
- I don't know (Response Value = Missing)

These questions about the effectiveness of preparation were designed to facilitate comparisons between (1) the responses of graduates and their supervisors, (2) multiple- and single-subject graduates, and (3) 1999-00 and 2000-01 cohorts. The Systemwide Evaluation will be repeated in 2003 to include the cohort of 2001-02.

Both surveys comprehensively assessed the *effectiveness* of teacher preparation in all major aspects of a beginning teacher's responsibilities. In 2001, the four questions shown above were the only items related to preparation for reading instruction. Beginning in 2002, the evaluation also assessed the *quality* of teacher preparation by including a series of questions in which graduates were invited to assess how valuable and helpful several program elements had been. These "new" questions included the following item for graduates who earned Multiple-Subject Teaching Credentials.

Short Summary and Analysis of Table 2

A study that includes only two cohorts of university graduates is *not* a "longitudinal study." But by contrasting the available data about the 1999-2000 cohort with parallel data about the 2000-01 cohort, the CSU may begin to get a glimpse of possible trends in program effects. (The program-quality questions were not asked in 2001 so only the program-effectiveness questions can be the basis for cohort-to-cohort analysis.) While such a glimpse could not, by itself, be a basis for decisions, it might bolster or call into question decisions that would otherwise be based only on information about the second cohort of CSU teachers.

In Table 2, Column 1 indicates that the numbers of participating supervisors (Rows 1-4) and graduates (Rows 5-8) greatly increased from the first to the second study. (This occurred because the 2001 effort was a "pilot study" and the 2002 evaluation had a much larger sample. Response rates in 2001 were 45 percent for the sample of supervisors, and 50 percent for the sample of graduates. In the larger-scale evaluation in 2002, these rates increased to 50 percent for the increased sample of supervisors, and 55 percent for the larger sample of graduates.) The Ns in Column 1 also reflect the fact that single-subject programs have fewer enrollees and graduates than multiple-subject programs. For the first cohort of single-subject graduates in Rows 3 and 7, the Ns are relatively small so the findings in these rows are more susceptible to sampling/measurement error than the other findings in Table 2.

For the pilot-study cohort that graduated in 1999-00, the findings in Table 2 suggest that multiple-subject programs may have been more effective than single-subject programs, according to supervisors (Rows 1 and 3) and graduates (Rows 5 and 7). This contrast resembles the findings for the evaluation cohort that graduated in 2000-01 (noted in Table 1). Given the small samples that were drawn in the pilot, and the relatively small numbers of respondents, differences between multiple- and single-subject programs in 1999-00 are less reliable than they are for 2000-01. This uncertainty is particularly strong when we focus on the responses of the two cohorts of CSU teaching graduates.

For multiple-subject programs, elementary principals indicated that program effectiveness in preparing teachers for reading instruction increased from 1999-00 (Row 1) to 2000-01 (Row 2) in the CSU system. These assessments were provided by sufficient numbers of supervisors, and the assessments of the two cohorts were sufficiently different to suggest (in the analysis of variance in Column 4) that the cohort-to-cohort change was *unlikely* to be an artifact of sampling/measurement error. The less-reliable cohort-to-cohort analysis for single-subject programs suggests the possibility that the outcomes of these programs may have declined because the supervisors' assessments were a little weaker in 2002 than in 2001. The change in these findings was small, however, and the findings were based on relatively few respondents, so there is a marginal possibility that the entire population of school supervisors regarded the second cohort (2001-02) to be as well prepared as the first cohort (1999-00).

Among CSU's teaching graduates in the two cohorts(Rows 5-6 and 7-8 in Table 2), the *direction* of the two sets of findings resembled the direction reported by the two sets of supervisors. The second cohort of multiple-subject graduates reported themselves to be slightly better prepared than the first cohort, while the reverse was true of the two cohorts of single-subject graduates. However, the differences between the cohorts were so small that the greatest likelihood is that the second cohort of graduates felt as well prepared as their counterparts one year earlier.

Overall, Table 2 suggests that single-subject programs were probably less effective in 1999-00 than were multiple-subject programs, that elementary school principals felt the multiple-subject programs increased their effectiveness in 2000-01, that high school supervisors regarded the single-subject programs as somewhat less effective in the second year, but that the two cohorts of graduates did not differ from one year to the next.

Reading: Sources of Strength and Weakness in Single Subject Programs

When single-subject candidates enroll in programs of professional preparation, they are much less aware than their multiple-subject counterparts that their teaching responsibilities will include reading-related responsibilities. So the two groups of candidates differ from the beginning. CSU faculty and administrators are acutely aware that students in grades 7-12 need further instruction in reading, that teachers of all subjects are expected to address these needs, and that reading instructional competence is among the requirements for earning Single Subject Credentials. While it will always be more difficult to focus and motivate single-subject candidates (as a group) than multiple-subject candidates (as a group) in issues of reading instruction, such focus and motivation are among the important functions of a single-subject program.

In this context, and given the emerging evidence in Tables 1-2 that single-subject programs may be less effective than they should be, what evidence is available from the Systemwide Evaluation regarding the sources of strength and weakness in the effectiveness of single-subject programs to prepare prospective teachers for reading-related instructional responsibilities? This question will be the subject of the remainder of this Working Paper.

In 2001 and 2002, participating CSU graduates answered several questions about the conditions in which they earned their credentials, and the conditions of the schools in which they served as teachers after earning those credentials. At the same time, their supervisors answered a smaller number of similar questions about school conditions that could potentially influence the extent to which the new teachers could utilize and implement their CSU-based preparation. The graduates' and supervisors' responses to these questions will be the basis for subdividing the single-subject graduates into sub-groups and looking at the effectiveness and quality of sub-group preparation. We begin by looking at the subjects of the Single Subject Teaching Credentials that were earned by the graduates who participated in the large-scale evaluation in 2002.

Earners of Different Single-Subject Credentials in Table 3. The single-subject graduates in the 2002 study are subdivided in Table 3 based on the subjects of their credentials, shown in the left side of Table 3. At the top, the effectiveness of each sub-group's preparation for reading-related responsibilities is assessed by their supervisors (Rows 1-10). In the middle, each sub-group's response to the program-effectiveness question is summarized in Rows 11-20. At the bottom, Table 3 shows each sub-group's response to the program-quality question (21-30). It is important to note reasons why the numbers of respondents in Table 3 (Column 1) are less than in Tables 1-2. Table 3 includes only those graduates who responded to combinations of questions about both their preparation and their credentials, whereas Tables 1-2 included those respondents who provided no information about their credentials. A greater restriction reduced the numbers of supervisors in Table 3. Only the graduates were asked to identify their credentials, so Rows 1-10 includes only those cases in which (a) the graduate provided credential data and the supervisor answered the program-effectiveness question. Because of these limitations, together with the fact that CSU prepares relatively few single-subject teachers, several of the sub-groupings in Table 3 are quite small. Data findings in Columns 2 and 3 should always be screened in relation to the numbers of respondents in Column 1.

Like Table 2, the percents in Column 2 of Table 3 show the consolidated proportion of each sub-group who gave the two most-favorable responses to the evaluation questions (well prepared or adequately prepared). The remainder of each sub-group gave the two least-favorable responses (somewhat prepared or not at all prepared). As before, mean values in Table 3 (Column 3) could range from a high value of 3.00 to a minimum potential value of zero.

Table 3
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among Earners of Different Single-Subject Credentials
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	English Was the Only SS Credential Earned	*54*	**80 %**	**2.17**	
2	Foreign Language Was Only SS Credential	*18*	**89 %**	**2.39**	
3	Social Science Was Only SS Credential	*36*	**58 %**	**1.78**	
4	Science or Health Was Only SS Credential	*43*	**81 %**	**2.19**	
5	Mathematics Was Only SS Credential Earned	*19*	**53 %**	**1.63**	
6	Art or Music Was Only SS Credential Earned	*18*	**72 %**	**1.94**	
7	Physical Education Was Only SS Credential	*21*	**52 %**	**1.67**	
8	Vocational Subject Was Only SS Credential	*10*	**80 %**	**2.30**	
9	Earned 2 or More Single-Subject Credentials	*5*	**80 %**	**2.20**	
10	All CSU Graduates in This Analysis	*224*	**72 %**	**2.02**	***.022***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
11	English Was the Only SS Credential Earned	*159*	**70 %**	**1.90**	
12	Foreign Language Was Only SS Credential	*64*	**81 %**	**2.16**	
13	Social Science Was Only SS Credential	*120*	**72 %**	**1.96**	
14	Science or Health Was Only SS Credential	*123*	**57 %**	**1.74**	
15	Mathematics Was Only SS Credential Earned	*82*	**56 %**	**1.54**	
16	Art or Music Was Only SS Credential Earned	*65*	**77 %**	**2.08**	
17	Physical Education Was Only SS Credential	*62*	**55 %**	**1.58**	
18	Vocational Subject Was Only SS Credential	*55*	**73 %**	**1.96**	
19	Earned 2 or More Single-Subject Credentials	*21*	**76 %**	**2.00**	
20	All CSU Graduates in This Analysis	*751*	**67 %**	**1.86**	***.000***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
21	English Was the Only SS Credential Earned	*161*	**76 %**	**2.01**	
22	Foreign Language Was Only SS Credential	*63*	**71 %**	**1.92**	
23	Social Science Was Only SS Credential	*128*	**76 %**	**2.00**	
24	Science or Health Was Only SS Credential	*126*	**60 %**	**1.76**	
25	Mathematics Was Only SS Credential Earned	*84*	**45 %**	**1.48**	
26	Art or Music Was Only SS Credential Earned	*62*	**68 %**	**1.89**	
27	Physical Education Was Only SS Credential	*64*	**58 %**	**1.66**	
28	Vocational Subject Was Only SS Credential	*54*	**76 %**	**2.06**	
29	Earned 2 or More Single-Subject Credentials	*21*	**86 %**	**2.33**	
30	All CSU Graduates in This Analysis	*763*	**68 %**	**1.87**	***.000***

Short Summary and Analysis of Table 3. The probability coefficients in Table 3 (ANOVAs in Column 4) indicate that, despite the small numbers of respondents, differences in the sub-group means were *almost certainly not* the product of measurement or sampling artifacts. It may be possible for the Advisory Council to derive implications from Table 3 about the specific subjects in which CSU preparation for reading instruction is most and least effective. The three sets of findings (Rows 1-10, 11-20 and 21-30) suggest that graduates and supervisors were in agreement that mathematics teachers and physical education teachers were comparatively unprepared for reading instruction in their classes in mathematics and physical education. Among the graduates, the science teachers also sensed that they were not well prepared (Row 14), perhaps in part because their CSU coursework in reading was not very valuable or helpful (Row 24). Other implications may be difficult to derive from Table 3 because of lack-of-agreement between graduates and supervisors, or between graduates' effectiveness responses and their quality responses. Differences among the subject-matter groups will be examined further in 2003 when the results of the third annual evaluation are available.

Teachers of Different Subjects in Table 4. Graduates were asked to report how many classes they taught in each major subject of the curriculum during 2001-02 (the year following completion of CSU programs). Table 4 subdivides the data based on the subject in which each graduate taught the greatest number of classes. Prior analysis showed that fewer than ten percent of the graduates in this cohort were misassigned to subjects they were not prepared or authorized to teach. Because the incidence of misassignment was relatively low, Table 4 includes all respondents who answered the relevant questions. The smallest Ns are in Rows 1-9 because these findings could include only those cases in which the graduates provided assignment data *and* the supervisors answered the program-effectiveness question. Throughout Table 4, however, caution should characterize the interpretation of data based on fewer than thirty respondents.

Short Summary and Analysis of Table 4. Analysis of variance indicates that the observed differences within each set of findings (Rows 1-8, 10-17 and 19-26) is *almost certainly* reflective of real differences in the preparation of the sub-groups. A cursory look at Columns 2 and 3 suggest that teachers of mathematics and physical education, again, were among the most unprepared to provide reading-related instruction, and they regarded their prior coursework in this field to be relatively low in value or helpfulness. On the other hand, teachers of English, foreign languages, art, music and vocational subjects were relatively well-prepared for this instruction, according to both the graduates and their supervisors. Although the science teachers' supervisors considered these CSU graduates to be comparatively well-prepared to foster reading skills in their science classes, the graduates did not share this assessment, and they considered their coursework in this field to be less valuable or helpful than the teachers of several other subjects.

Teachers of Different Grade Spans in Table 5. While we would expect the majority of Single-Subject Credential earners to teach in the upper grades (9-12 and 7-8), it may be illuminating to look at responses for the smaller numbers who taught in the lower grades (4-6 and K-3). A related question is whether reading preparation is equally effective among single-subject graduates at the two levels of secondary education (7-8 and 9-12). All graduates were asked which grade-levels they taught in 2001-02; Table 5 subdivides the response group based on answers to this question. Once again, Ns are restricted because some respondents did not report their grade-levels and a few taught in more than one of the grade-spans in Table 5.

Table 4
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among Graduates Who Taught Different Subjects (7-12)
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	English Was the Primary Subject Taught	*70*	**83 %**	**2.26**	
2	Foreign Language Was the Primary Subject	*14*	**86 %**	**2.43**	
3	Social Science Was the Primary Subject Taught	*31*	**48 %**	**1.65**	
4	Science or Health Was the Primary Subject	*50*	**78 %**	**2.18**	
5	Mathematics Was the Primary Subject Taught	*35*	**60 %**	**1.80**	
6	Art or Music Was the Primary Subject Taught	*14*	**79 %**	**2.00**	
7	Physical Education Was the Primary Subject	*17*	**47 %**	**1.59**	
8	Vocational Subject Was the Primary Subject	*7*	**86 %**	**2.29**	
9	All CSU Graduates in This Analysis	*238*	**71 %**	**2.04**	***.002***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
10	English Was the Primary Subject Taught	*203*	**72 %**	**1.97**	
11	Foreign Language Was the Primary Subject	*53*	**79 %**	**2.15**	
12	Social Science Was the Primary Subject Taught	*98*	**75 %**	**2.01**	
13	Science or Health Was the Primary Subject	*154*	**60 %**	**1.79**	
14	Mathematics Was the Primary Subject Taught	*137*	**64 %**	**1.72**	
15	Art or Music Was the Primary Subject Taught	*58*	**79 %**	**2.03**	
16	Physical Education Was the Primary Subject	*38*	**50 %**	**1.47**	
17	Vocational Subject Was the Primary Subject	*33*	**73 %**	**1.94**	
18	All CSU Graduates in This Analysis	*774*	**69 %**	**1.89**	***.000***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
19	English Was the Primary Subject Taught	*163*	**76 %**	**2.02**	
20	Foreign Language Was the Primary Subject	*48*	**75 %**	**2.00**	
21	Social Science Was the Primary Subject Taught	*93*	**80 %**	**2.02**	
22	Science or Health Was the Primary Subject	*135*	**63 %**	**1.78**	
23	Mathematics Was the Primary Subject Taught	*106*	**54 %**	**1.63**	
24	Art or Music Was the Primary Subject Taught	*53*	**68 %**	**1.85**	
25	Physical Education Was the Primary Subject	*37*	**46 %**	**1.46**	
26	Vocational Subject Was the Primary Subject	*29*	**79 %**	**2.17**	
27	All CSU Graduates in This Analysis	*664*	**68 %**	**1.87**	***.000***

Short Summary and Analysis of Table 5. Among the four sub-groups in Table 5, the percentages and means differ less than they did among the different credential sub-groups (Table 3) and the teachers of different subjects (Table 4). Supervisors reported that preparation was least effective when the graduates taught in grades 9-12, and the graduates in those grades offered the least-favorable assessments of the value and helpfulness of their CSU coursework. But the differences were smaller than in prior analyses. Little import should be assigned to the tendency of K-3 teachers to be the best prepared, because these findings are based on few responses. Overall, the ANOVA results for grade-span differences indicate that the observed differences may not reflect actual differences in preparation.

Table 5
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among Graduates Who Taught Different Grade Spans
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	Graduates Taught in Grades 9-12	*159*	**71 %**	**2.01**	
2	Graduates Taught in Grades 7-8	*104*	**72 %**	**2.07**	
3	Graduates Taught in Grades 4-6	*51*	**86 %**	**2.25**	
4	Graduates Taught in Grades K-3	*28*	**86 %**	**2.29**	
5	All CSU Graduates in This Analysis	*342*	**75 %**	**2.08**	***.172***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
6	Graduates Taught in Grades 9-12	*547*	**69 %**	**1.89**	
7	Graduates Taught in Grades 7-8	*318*	**67 %**	**1.86**	
8	Graduates Taught in Grades 4-6	*131*	**69 %**	**1.91**	
9	Graduates Taught in Grades K-3	*36*	**81 %**	**2.11**	
10	All CSU Graduates in This Analysis	*1,032*	**69 %**	**1.89**	***.398***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
11	Graduates Taught in Grades 9-12	*531*	**68 %**	**1.87**	
12	Graduates Taught in Grades 7-8	*229*	**69 %**	**1.93**	
13	Graduates Taught in Grades 4-6	*55*	**78 %**	**2.04**	
14	Graduates Taught in Grades K-3	*18*	**83 %**	**2.33**	
15	All CSU Graduates in This Analysis	*833*	**69 %**	**1.91**	***.131***

Teachers of English Language Learners in Table 6. It would be plausible to suppose that the preparation of single-subject teachers in reading would be most severely challenged by teaching assignments involving large numbers of English language learners (ELL). Each graduate was asked to report the percentage of students in her/his classes who were ELL students during the 2001-02 school year. If they did not know this information, the graduates were encouraged to so report, and many indicated they did not know. Table 6 sub-divides those who answered the question in three segments: those with 68% to 100% ELL students, those with 34% to 67% ELLs, and those with no ELLs to 33 percent. (Table 7 forms similar sub-groupings based on school-wide ELL data provided by supervisors.)

Table 6
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among Graduates with Varying Concentrations of English Language Learners in Their Own Classrooms
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	68 to 100 Percent of Students Were ELL Students	*33*	**88 %**	**2.27**	
2	34 to 67 Percent of Students Were ELL Students	*55*	**75 %**	**2.07**	
3	Zero to 33 Percent of Students Were ELL Pupils	*202*	**75 %**	**2.11**	
4	All CSU Graduates in This Analysis	*290*	**76 %**	**2.12**	***.514***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
5	68 to 100 Percent of Students Were ELL Students	*128*	**77 %**	**2.01**	
6	34 to 67 Percent of Students Were ELL Students	*155*	**65 %**	**1.85**	
7	Zero to 33 Percent of Students Were ELL Pupils	*570*	**68 %**	**1.88**	
8	All CSU Graduates in This Analysis	*853*	**69 %**	**1.90**	***.241***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
9	68 to 100 Percent of Students Were ELL Students	*96*	**74 %**	**2.01**	
10	34 to 67 Percent of Students Were ELL Students	*130*	**76 %**	**2.07**	
11	Zero to 33 Percent of Students Were ELL Pupils	*455*	**67 %**	**1.85**	
12	All CSU Graduates in This Analysis	*681*	**70 %**	**1.92**	***.036***

Short Summary and Analysis of Table 6. Nearly all of the sub-groupings in Table 6 include sufficient numbers of respondents to yield reliable findings. Only the findings related to program quality (Rows 9-11) reveal group differences that are highly unlikely to reflect measurement/sampling artifacts, however. Perhaps most surprising, however, is that the highest concentrations of ELL students (Rows 1, 5 and 9) were not associated with the most challenging instruction, or the least effective preparation for reading instruction, or the preparation that was least valuable or helpful. In fact, Columns 2 and 3 suggest there is not a straight-line relationship between the proportions of students who are ELLs and either the effectiveness or quality of first-year teachers' preparation for reading instruction in single-subject teaching assignments. The subjects of credentials and of instruction are more closely related to strength and weakness in CSU preparation.

School-Wide Populations of ELL Students in Table 7. The language milieu of a first-year teacher's school could impact the teacher's chances of utilizing and implementing pedagogical lessons learned in university-based preparation. Supervisors were asked to report the percentage of students in each graduate's school who were ELL students. The responses of supervisors and graduates to program-effectiveness and program-quality questions are sub-divided accordingly in Table 7.

Table 7
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among Graduates with Varying Concentrations of English Language Learners in Their Schools, According to Their Supervisors
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	68 to 100 Percent of Students Were ELL Students	*39*	**80 %**	**2.13**	
2	33 to 67 Percent of Students Were ELL Students	*147*	**69 %**	**2.05**	
3	Zero to 32 Percent of Students Were ELL Pupils	*590*	**75 %**	**2.05**	
4	All CSU Graduates in This Analysis	*776*	**74 %**	**2.05**	***.850***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
5	68 to 100 Percent of Students Were ELL Students	*15*	**73 %**	**2.07**	
6	33 to 67 Percent of Students Were ELL Students	*56*	**70 %**	**1.89**	
7	Zero to 32 Percent of Students Were ELL Pupils	*270*	**67 %**	**1.87**	
8	All CSU Graduates in This Analysis	*341*	**68 %**	**1.88**	***.691***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
9	68 to 100 Percent of Students Were ELL Students	*12*	**55 %**	**2.00**	
10	33 to 67 Percent of Students Were ELL Students	*37*	**57 %**	**1.62**	
11	Zero to 32 Percent of Students Were ELL Pupils	*209*	**67 %**	**1.89**	
12	All CSU Graduates in This Analysis	*258*	**66 %**	**1.85**	***.240***

Short Summary and Analysis of Table 7. Unfortunately, findings in Table 7 for schools with high concentrations of ELL students (Rows 1, 5 and 9) are based on too few respondents to have much confidence in the findings. The remaining findings, based on larger Ns, show no clear pattern one way or the other. The three ANOVAs in Column 4 confirm that the Systemwide Evaluation found no discernible basis for supposing that strength or weakness in a single-subject teacher's preparation for reading instruction is associated with the preponderance of English language learners in the teacher's school.

Teachers Who Work in Different Community Contexts. Given the widespread differences in the educational effectiveness of teachers in urban, suburban and rural schools, one might expect this factor would also be related to how well first-year teachers draw on their preservice preparation as they teach. Supervisors were asked to describe each graduate's school in terms of its community context. Schools and graduates were sorted into four sub-groups: those in urban or inner-city areas; those in metropolitan areas near large cities; those in suburban areas; and those in rural or small-town areas. Table 8 shows the results.

Table 8
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among Graduates Teaching in Different Communities
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	In Urban or Inner-City Schools	*189*	**68 %**	**1.99**	
2	In Metropolitan Schools In or Near Large Cities	*201*	**80 %**	**2.14**	
3	In Suburban Schools	*197*	**78 %**	**2.12**	
4	In Rural or Small-Town Schools	*184*	**69 %**	**1.91**	
5	All CSU Graduates in This Analysis	*771*	**74 %**	**2.05**	***.023***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
6	In Urban or Inner-City Schools	*67*	**73 %**	**1.96**	
7	In Metropolitan Schools In or Near Large Cities	*85*	**69 %**	**1.95**	
8	In Suburban Schools	*97*	**63 %**	**1.80**	
9	In Rural or Small-Town Schools	*90*	**69 %**	**1.86**	
10	All CSU Graduates in This Analysis	*339*	**68 %**	**1.88**	***.591***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
11	In Urban or Inner-City Schools	*51*	**71 %**	**1.94**	
12	In Metropolitan Schools In or Near Large Cities	*66*	**71 %**	**1.86**	
13	In Suburban Schools	*73*	**59 %**	**1.74**	
14	In Rural or Small-Town Schools	*66*	**70 %**	**2.00**	
15	All CSU Graduates in This Analysis	*256*	**67 %**	**1.88**	***.395***

Short Summary and Analysis of Table 8. Neither the CSU program-effectiveness findings nor the program-quality findings indicate that urban and metropolitan communities traditionally underserved by K-12 schools pose extraordinary challenges for CSU's single-subject graduates when they work on reading skills with their students. Across the three sets of findings (Rows 1-4, 6-9 and 11-14), ineffectiveness in preparation is associated more closely with teaching in suburban and rural schools rather than urban and metropolitan schools. In the search for sources of strength and weakness in the preparation of single-subject teachers for reading-skills instruction, the community contexts of the schools do not serve to illuminate the issue.

Teachers in Schools at Different Levels of Family Income. It could be supposed that CSU preparation for content-based reading instruction might be least effective among low-income students, given the traditional relationships between family income and school effectiveness. Supervisors reported the percentage of pupils in each graduate's school who were eligible for reduced-price school meals, which are the basis for sub-grouping the data according to family income levels in Table 9.

Table 9
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among Graduates Teaching Different Income Levels
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	Lowest-Income Schools (Highest Use of Meals)	*183*	**72 %**	**2.07**	
2	Intermediate-Income Schools	*283*	**69 %**	**1.99**	
3	Highest-Income Schools (Lowest Use of Meals)	*290*	**80 %**	**2.10**	
4	All CSU Graduates in This Analysis	*756*	**74 %**	**2.05**	***.263***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
5	Lowest-Income Schools (Highest Use of Meals)	*59*	**80 %**	**2.07**	
6	Intermediate-Income Schools	*136*	**67 %**	**1.88**	
7	Highest-Income Schools (Lowest Use of Meals)	*140*	**67 %**	**1.85**	
8	All CSU Graduates in This Analysis	*335*	**69 %**	**1.90**	***.248***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
9	Lowest-Income Schools (Highest Use of Meals)	*41*	**71 %**	**1.98**	
10	Intermediate-Income Schools	*101*	**69 %**	**1.93**	
11	Highest-Income Schools (Lowest Use of Meals)	*112*	**61 %**	**1.77**	
12	All CSU Graduates in This Analysis	*254*	**66 %**	**1.87**	***.318***

Short Summary and Analysis of Table 9. The comparatively reliable findings throughout Table 9 suggest that the most-effective preparation and the most-valuable courses are associated with teaching in the lowest-income schools (Rows 1, 5 and 9). The observed differences are small, however, and the ANOVA results do not confirm that these observed differences necessarily represent differences in the three populations of first-year teachers. If some CSU single-subject graduates are better prepared than others to foster reading skills in content-focused classes, then, explanations for these differences are *very likely not related* to the school-wide income levels of students.

Teachers in Schools at Different Levels of Prior Student Achievement. CSU graduates are assigned to teach in schools at varying levels of prior student achievement, as measured by statewide standardized tests. It might be expected that CSU preparation for reading instruction in single-subject classes would prove to be least effective in schools that earn low scores in California's Academic Performance Index (API) for schools. In the 2002 evaluation, supervisors reported the API scores that were earned by the schools in 2000-01, one year before the CSU graduates earned their credentials and taught classes in 2001-02.

Table 10
Effectiveness and Quality of CSU Preparation for Reading Instruction: Graduates Teaching Students at Different Levels of Prior Achievement
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	Lowest Prior-Achievement Schools (API = 1-3)	*241*	**66 %**	**1.93**	
2	Intermediate Prior-Achievement Schools (4-6)	*241*	**76 %**	**2.10**	
3	Highest Prior-Achievement Schools (API = 7-10)	*251*	**79 %**	**2.09**	
4	All CSU Graduates in This Analysis	*733*	**74 %**	**2.04**	***.046***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
5	Lowest Prior-Achievement Schools (API = 1-3)	*91*	**71 %**	**1.89**	
6	Intermediate Prior-Achievement Schools (4-6)	*106*	**67 %**	**1.88**	
7	Highest Prior-Achievement Schools (API = 7-10)	*122*	**66 %**	**1.87**	
8	All CSU Graduates in This Analysis	*319*	**68 %**	**1.86**	***.984***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
9	Lowest Prior-Achievement Schools (API = 1-3)	*71*	**72 %**	**2.00**	
10	Intermediate Prior-Achievement Schools (4-6)	*78*	**65 %**	**1.78**	
11	Highest Prior-Achievement Schools (API = 7-10)	*94*	**62 %**	**1.80**	
12	All CSU Graduates in This Analysis	*243*	**66 %**	**1.85**	***.278***

Short Summary and Analysis of Table 10. CSU teaching graduates are distributed fairly evenly among schools with high achievement scores (API Decile Scores = 7-10), intermediate scores (4-6) and low scores (1-3), as can be seen in Column 1. One consequence is that the statistical findings throughout Table 10 are based on substantial numbers of respondents, yielding reliable data. According to the supervisors, the least-effectively prepared graduates taught in schools with the lowest prior levels of student achievement (Row 1), and this finding was least likely to be based on sampling or measurement error. The graduates' assessments of program-effectiveness suggest that preparation proves to be equally effective in the three groups of schools. Their responses to the program-quality question (Rows 9-11) suggest that their CSU reading courses may be most valuable and helpful when they accept teaching positions in the lowest-performing schools. These uneven results do not confirm an expected relationship between the quality and effectiveness of preparation and alternative milieux of prior student achievement in which first-year teachers work.

The Effects of California's Alternative Certification Options. In the evaluation, all of the participating graduates answered the CSU questions after they (1) finished CSU preparation, (2) earned state credentials and (3) taught for one year with those credentials. They differed substantially, however, in the conditions that characterized their CSU-sponsored preparation. Approximately half were student teachers in CSU's programs, but many others were intern teachers or emergency teachers while completing CSU coursework. Respondents identified their prior status in the survey; their answers are the basis for subgroups in Table 11.

Table 11
Effectiveness and Quality of CSU Preparation for Reading Instruction: Graduates Had Different Status When They Were Enrolled in CSU Programs
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1	Column 2	Column 3	Column 4
		Ns	**Percents**	**Means**	**ANOVA**
Supervisors: How Well Was the CSU Graduate Prepared to Teach Content-Based Reading?					
1	Former Student Teachers in the CSU Program	*189*	**76 %**	**2.07**	
2	Former Intern Teachers in the CSU Program	*56*	**75 %**	**2.16**	
3	Former Emergency Teachers in the CSU Program	*98*	**72 %**	**2.06**	
4	All CSU Graduates in This Analysis	*343*	**75 %**	**2.08**	***.759***
CSU Graduates: How Well Were You Prepared to Provide Content-Based Reading Instruction?					
5	Former Student Teachers in the CSU Program	*507*	**71 %**	**1.95**	
6	Former Intern Teachers in the CSU Program	*185*	**69 %**	**1.92**	
7	Former Emergency Teachers in the CSU Program	*340*	**65 %**	**1.78**	
8	All CSU Graduates in This Analysis	*1,032*	**69 %**	**1.89**	***.015***
CSU Graduates: How Valuable and Helpful Was Your CSU Coursework in Reading Instruction?					
9	Former Student Teachers in the CSU Program	*402*	**73 %**	**2.01**	
10	Former Intern Teachers in the CSU Program	*130*	**57 %**	**1.68**	
11	Former Emergency Teachers in the CSU Program	*303*	**69 %**	**1.88**	
12	All CSU Graduates in This Analysis	*835*	**69 %**	**1.91**	***.001***

Short Summary and Analysis of Table 11. By themselves, the supervisors' assessments of program-effectiveness (Rows 1-3) indicate that former interns may have received the most-effective preparation, but the within-groups variance was high and the ANOVA result suggests the observed difference is not reliable. The opposite was true of the graduates' responses, however. Both their program-effectiveness and their program-quality responses indicated that former student teachers received the best preparation for addressing reading issues in content-based, single-subject classes. These findings were based on large numbers of observations with little within-groups variance, so the two ANOVA results reveal that the observed differences are very probably consistent with population-wide differences between former student teachers, former intern teachers, and former emergency teachers. These conclusions, in turn, lead to the inference that weakness in CSU's preparation of single-subject teachers to provide reading instruction in content-based classes may be due, at least in part, to the large numbers of candidates who do not realize the benefits of supervised student teaching because their time is allocated, instead, to intern/emergency teaching.

Quality and Effectiveness of Preparation at Different CSU Campuses. In a sense, the CSU Systemwide Evaluation has consisted of 21 campus-specific evaluations, the results of which have been reported in detail to the Deans of Education. Neither the Deans nor the Chancellor have authorized the release of campus-specific findings to other audiences either inside or outside the CSU. With the names of CSU campuses withheld, however, Table 12 provides a ranking of campus results on the three evaluation questions that related to single-subject preparation for reading instruction in the 2002 study.

Table 12 differs from the prior displays in several important ways. Tables 1-11 reported the results *separately* for the supervisors' program-effectiveness responses, the graduates' program-effectiveness responses, and the graduates' program-quality responses. In Table 12, these responses are combined to form a composite index of quality and effectiveness for the 20 campuses. (One of the 21 campuses is not included because it offers programs only for Multiple-Subject Credentials.) The index results in Table 12 are considerably more reliable than the separated results in Tables 1-11 because each index is a composite of three judgments, not just one response to a single question.

The composite scale in Table 12 had twelve distinct values instead of the four values underlying the data in Tables 1-11. Percentage distributions on the 12 values are available but were not included in Table 12 due to space limitations. Instead, Column 3 of Table 12 reports confidence intervals (CIs) for the means found in Column 2. These intervals are based on a theoretical prospect that the CSU would complete 100 studies of the same size and with the same questions. If the CSU did so, one would expect the findings to vary among the 100 studies. Confidence intervals indicate how much variance would occur in such a scenario. By adding the CI in Column 3 to the mean in Column 2, one determines how high the mean would reach in 95 of the 100 studies. By subtracting the CI from the mean, one sees how low the mean would fall in 95 of the 100 studies. (CIs are based on the numbers of respondents in Column 1, the magnitude of the means in Column 2, and the within-campus variance of responses to the three evaluation questions.)

As before, the ANOVA result in Column 4 is the best available estimate of the likelihood that the observed differences among the 20 CSU campuses are artifacts of unintended errors in sampling or measurement. The reported coefficient signifies that it is extremely unlikely that the graduates of all CSU campuses are, in actual fact, equally well prepared. To the contrary, the ANOVA in Table 12 indicates clearly that campus-based differences are a promising source for identifying within-CSU strength and weakness in the preparation of CSU single-subject candidates for reading instructional responsibilities in content-based classes.

Table 12
Effectiveness and Quality of CSU Preparation for Reading Instruction: Comparisons Among the Graduates of 20 Distinct CSU Campuses
(Graduates Earned Credentials During 2000-01 and Taught School During 2001-02)

		Column 1 **Ns**	Column 2 **Means**	Column 3 **CIs**	Column 4 **ANOVA**
1	Campus 1—Highest Result on Composite Index	*113*	**2.18**	**0.13**	
2	Campus 2—Second Highest Composite Result	*94*	**2.17**	**0.14**	
3	Campus 3—Third Highest Composite Result	*45*	**2.15**	**0.18**	
4	Campus 4—Next Highest Composite Result	*52*	**2.11**	**0.24**	
5	Campus 5— Next Highest Composite Result	*119*	**2.07**	**0.14**	
6	Campus 6— Next Highest Composite Result	*123*	**1.98**	**0.11**	
7	Campus 7— Next Highest Composite Result	*60*	**1.97**	**0.18**	
8	Campus 8— Next Highest Composite Result	*68*	**1.97**	**0.15**	
9	Campus 9— Next Highest Composite Result	*89*	**1.96**	**0.16**	
10	Campus 10— Next Highest Composite Result	*110*	**1.96**	**0.13**	
11	Campus 11— Next Highest Composite Result	*76*	**1.94**	**0.16**	
12	Campus 12— Next Highest Composite Result	*35*	**1.94**	**0.26**	
13	Campus 13— Next Highest Composite Result	*22*	**1.93**	**0.27**	
14	Campus 14— Next Highest Composite Result	*77*	**1.92**	**0.20**	
15	Campus 15— Next Highest Composite Result	*52*	**1.92**	**0.21**	
16	Campus 16— Next Highest Composite Result	*92*	**1.83**	**0.19**	
17	Campus 17— Next Highest Composite Result	*83*	**1.82**	**0.18**	
18	Campus 18— Next Highest Composite Result	*95*	**1.82**	**0.18**	
19	Campus 19— Next Highest Composite Result	*94*	**1.81**	**0.16**	
20	Campus 20—Next Highest Composite Result	*111*	**1.70**	**0.16**	
21	All CSU Graduates in This Analysis	*1,635*	**1.96**	**0.04**	***.000***