The New Teacher Induction Experience

Tension between Curricular and Programmatic Demands and the Need for Immediate Help

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Throughout the history of California's Beginning Teacher Support and As-sessment (BTSA) program, new teachers have reported experiencing substantial tension between the curricular and programmatic demands arising from their induction programs' formative assessment systems and the immediate coaching help they need to deal with day-to-day classroom responsibilities. To examine some dimensions of this tension, we undertook in-depth case study analyses of 18 novice teacher participants in an innovative online induction program managed by the Riverside County Office of Education (RCOE). Because the online format provides

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reasonably complete transcriptions of the new teachers' induction experiences, we anticipated being able to examine this tension in some detail. Preliminary analysis does indicate that inductees see coaching as fundamental, with formative assessment activities as valued but secondary in importance to their overall perceived needs within the classroom. Additionally, when examining overall satisfaction of new teachers enrolled in an induction program, we find important differences associated with teacher characteristics and assignments needing interpretation. We learned, however, that the data collected from this online induction program are more fragmentary and harder to organize than expected. As a result, this report must be considered a preliminary work in progress, and our findings will need to be confirmed (or modified) by future work.

An important context for this study is a substantial change in state policy regarding the funding of BTSA programs. With implementation of California's Local Control Funding Formula (LCFF), BTSA induction programs no longer have state-level budget authorization and are challenged to prove that they deserve preservation. Having lost categorical budget support and facing energized criticism from some participants, this important component of California's teacher education continuum may collapse. It is imperative that detailed evaluation studies find what, if any, critical program variables within the formative assessment systems make induction attractive to and effective for new teachers as well as empowering for their mentoring coaches.

Insights Gleaned From Prior Research

Several hundred published editorials, technical reports, journal articles, and books address the character and impacts of new teacher induction programs. Most are opinion pieces reporting the views of an author or interest group. Although a substantial number (approximately 200) present research findings, many of these utilize weak research designs, making their findings unreliable. In the most widely cited review of this research literature (Ingersoll & Strong, 2011), the reviewers could find only 15 empirical studies meeting basic reliability standards and purporting to describe the impact and nature of new teacher induction programs throughout the nation. The substance of this review is elaborated by Ingersoll and Strong (2012), who reiterate essentially the same conclusions. The best overall summary of the state of our knowledge about new teacher induction programs can be found in *Organization and Effectiveness of Induction Programs for New Teachers* (Smith, Desimone, Porter, & National Society for the Study of Education, 2012).

In this section of our report, we look briefly at a critical conundrum in this impact literature, and then we turn to the literature on the use of online technologies to facilitate the induction process. In a third section, we examine the extent to which published qualitative analyses of induction programs and processes provide a framework for our study of the induction experiences of our sample of 18 teacher

induction program participants from among the 81 teachers supported in a pilot online program developed by the RCOE and implemented in the 2013–2014 academic year.

Studies of the Impact of New Teacher Induction Programs

When Richard Ingersoll and colleagues initially examined the impact of induction programs on new teachers in 2003 and 2004 (Ingersoll, 2003; Ingersoll & Kralik, 2004), there seemed to be near-unanimous agreement among research scholars that new teacher induction programs had two potent impacts on the public school teacher workforce. Scholars were confident that (a) induction programs substantially reduced the likelihood that new teachers would leave teaching within their first 5 years and (b) induction programs focused on instructional development contributed significantly to student achievement. In a subsequent review, Ingersoll and Strong (2011) reiterated their confidence in the reliability of these two conclusions. Following the pioneering work by Ingersoll, educators, policy makers, and research scholars have spent the last decade confident that the important questions surrounding new teacher induction would be on financing, implementing, and monitoring the impacts of programs that are surely helping to stem the exodus of novice teachers and improving their contributions to learning.

A substantial, randomized field experimental study by Glazerman and colleagues (Glazerman et al., 2008; Glazerman et al., 2010) reached contradictory conclusions, finding no impact on the performance of students or retention of new teachers in the teaching workforce. The result is an important conundrum for researchers interested in the impact of induction programs on new teachers. With publication of the Glazerman et al. (2010) study—a study that was well financed and utilized the randomized field study methods typically referred to as the "gold standard" for educational research—it has become clear that more needs to be done to distinguish the effective elements of the induction process from the impact of other forces affecting teacher career commitments and instructional effectiveness. To develop this more fine-grained analysis of induction, it is important to learn more about how the new teachers are experiencing induction program activities and to determine whether the same induction activities are experienced in systematically different ways by new teachers working in differing contexts and exposed to differing cross-pressures on the job.

The literature on new teacher induction has become less frequent since publication of the 2012 NSSE study. Prior to 2012, several hundred articles, papers, and dissertations examining new teacher mentoring and induction programs were indexed in the scientific literature databases. There were only 26 additions to this literature pool between 2013 and 2016. Most of this newer literature has continued the practice of conducting small-scale qualitative studies typically looking at teacher induction in countries other than the United States (Australia, Canada, China, Finland, Ireland,

New Zealand, Turkey, and the United Kingdom are represented). Most have also been published in professional practice rather than research journals. Several of the manuscripts reviewed looked at teachers working in specific instructional domains or settings (e.g., special education, science education, second language learning).

The two most recent publications found in the indexes are LoCascio, Smeaton, and Waters (2016) and Pennanen, Bristol, Wilkinson, and Heikkinen (2016). The first of these, LoCascio et al. (2016), was a small-scale study that looked at mentoring and induction for alternative certification teacher candidates in New Jersey. The work was unsophisticated, but its conclusions are in line with the findings of Glazerman and colleagues that induction in this setting is both poorly implemented and ineffective. The second, 2016 study was a qualitative study of the induction experiences of six teachers in Finland and Australia. Though refreshing in its richness of data and painstaking analysis, it did not change the overall picture of what it takes to have quality mentoring and coaching for novice teachers, nor did it resolve the conundrum of broad enthusiasm for induction programs challenged by the largest, best-funded Glazerman et al. (2010) study finding no substantial effects.

One other recent study should be mentioned. This was a substantial self-study of the impact of induction support on master of arts in teaching graduates in one university (Van Zandt Allen, 2013). Although the conclusions reached in this study are well documented, they do not change the overall picture materially. Qualitatively, educators and teacher trainers continue to be enthusiastic about mentoring-based induction services for new teachers, but hard evidence of systematic impact is elusive.

Studies of Online Induction Approaches

Few examples of online approaches to new teacher induction are found in the scholarly research literature. When the ERIC Digest summarizing the state of the art on beginning teacher induction was prepared by Weiss and Weiss (1999), no references to online services were presented. The 2012 *NSSE Yearbook* offered one chapter devoted to arguing for the virtues of creating online communities among novice teachers (Berry & Byrd, 2012). When online induction, or other digital technologies to support teachers, are discussed, two concepts have dominated: (a) the creation of cybercommunities, typically focusing on mutual interest without much reference to any organized professional development curriculum, and/or (b) the innovative character of the digital technologies themselves and their ability to create mentoring networks through which more experienced teachers are able to get in touch with, and stay in touch with, novices. As Smith and Israel (2010) noted, "literature in this area is still forthcoming" (p. 31); that is, it is not very well developed.

Most importantly, this literature is devoid of any analysis of what substantive instructional or pedagogical expertise can be developed through online links between novice and experienced teachers. Although the Berry and Byrd (2012) chapter argued persuasively that it is at least possible to produce substantial levels

of trust in cybercommunities, it is not yet clear whether—and if so, how—online relationships build the needed coaching trust. And concern over the necessity of trusting relationships between new teachers and their induction coaches has been a major reason for caution in adopting online induction strategies.

Our multiple case study of novice teacher support through an innovative online induction program is able to make a significant contribution to this issue because it emphasizes the use of systematic cycles of inquiry and practice development based on California's six professional standards for the teaching profession. Consequently, we expect that qualitative data will document the robustness of trust development and the ability of coaching mentors to provide advice and counsel regarding emergent problems of practice. We also will be able to examine the robustness of the new teachers' responses to a substantial curriculum of professional development aimed at strengthening their capacities for (a) developing student engagement, (b) adapting instruction to diverse student needs, (c) monitoring their own teaching practices, (d) improving classroom assessments, (e) implementing California's Common Core standards, and (f) adapting to local school cultures.

Studies Utilizing Qualitative and Case Study Approaches

We find in the published literature a modest number of qualitative studies of novice teachers' experiences with their induction programs (Bianchini & Brenner, 2010; Cherubini, 2009; Davis & Higdon, 2008; Dever, Johnson, & Hobbs, 2000; Dymoke & Harrison, 2006; Fry, 2010; Fry & Bryant, 2007; Gardiner, 2012; Green, 2015; Israel, Kamman, McCray, & Sindelar, 2014; Napper-Owen & Phillips, 1995; Papatraianou & Le Cornu, 2014; Piggot-Irvine, Aitken, Ritchie, Ferguson, & Mc-Grath, 2009; Youngs, 2007; Yusko & Feiman-Nemser, 2008). While this literature is not typically viewed as providing convincing evidence of program effectiveness by researchers seeking to determine whether induction programs help with teacher retention or facilitate improved student learning, it is important to compare the methods of data collection, methods of analysis, and findings in this literature with those made available to our present study in the form of extensive transcripts of cyberconversations and a substantial body of new teacher work products.

Design of the Study

The project being reported here evolved over a 3-year period. First, working with just three novice teachers in 2011–2012, the feasibility of creating an online virtual induction program was explored. Subsequently, in academic year 2012–2013, this virtual induction program was tested by the Riverside, Inyo, Mono, and San Bernardino (RIMS) BTSA with 12 beginning teachers. Participants in this small prepilot program were volunteers identified from a pool of first-year teachers who were teaching online K–12 students in the consortium service area. This virtual

induction program utilized the assessment system common to all the RIMS-BTSA participating teachers: the Formative Assessment for California Teachers (FACT). What distinguished this group from the other RIMS-BTSA consortium inductees was that their program delivery was completely online. Assigned mentors/support providers for these new teachers were employed and directed by the RCOE.

The third year saw implementation of a full-fledged pilot program for online induction of new teachers within the RIMS-BTSA consortium. Based on experience gained from the prepilot induction program, a substantial online induction pilot program was implemented for 81 preliminary credentialed, novice teachers in 2013–2014. A majority of the 81 participants in this program had volunteered for the online experience. However, all new teachers in one small school district within the RIMS-BTSA consortium were assigned by their district administration to participate in the online pilot implementation.

The newly designed online induction program used a very different formative assessment system—one still based on the California Standards for the Teaching Profession (CSTP) but greatly simplified in its implementation. This formative assessment and induction program utilized a commercial online instructional management system, Haiku Learning, for communicating with the inductee teachers. This online platform designed to support classroom instruction placed the new teachers into "classes" with their support providers/coaches classified as "teachers." Thus the Haiku platform was able to deliver support for both the instruction and the formative assessment components of this innovative induction program. Assessment activities were linked to a series of seven cyclical inquiry sessions. Participants created Web-based projects (wikis), participated in discussion boards, and engaged in reflective exercises with their assigned support providers/coaches. As with the prepilot program, the support providers for the new teachers in the pilot phase were primarily RCOE BTSA program managers but did include support providers/mentors from other agencies within the consortium.

Our analysis of the experiences of new teacher participants in this pilot online induction program concentrates on one important feature of the online induction program: its use of a professional development discussion board to provide opportunities for novice teachers to interact with one another and create a professional learning community of similarly situated teachers. Our analysis emphasizes qualitative interpretation of participating teacher discussion board records found in the Haiku data system. These data were linked with enrollment data provided by the participating teachers—enrollment data that identified their work settings, gender, ethnicity, and other demographic characteristics. Our adoption of qualitative case study methods follows the advice of Thomas (2011), who argued that case study design is appropriate in social research because it "provides a flexible, but rigorous, method of in-depth study, focuses on a limited number of subjects, is often used to explore the why and how of questions, and uses multiple sources of data that must be integrated and synthesized" (p. 518).

Eighteen of the 81 participating teachers in the pilot induction program were selected for study. The selected cases were intentionally (rather than randomly) selected to ensure that a breadth of experiences available to participants would be examined. Case selection was guided by the following nine characteristics:

1. online program enrollment (voluntary = 8; assigned = 10)

2. gender (male = 5; female = 13)

3. ethnicity (Caucasian = 10; Latino = 5; Asian/Indian = 2; African American = 1)

4. elementary/secondary (elementary = 9; secondary = 9)

5. traditional/virtual teaching (brick and mortar = 12; virtual/independent = 6)

6. six coaches supporting groups of 6, 5, 3, 2, 1, and 1, respectively, participating novice teachers

7. structure of school governance (public = 11; private = 4; charter = 3)

8. comfort level with online learning (confident = 5; comfortable = 4; need guidance = 2; no data = 3)

9. age in years (<31 = 6; 31–40 = 7; >40 = 5)

Data for interpreting the induction experiences of these 18 teachers were drawn from three sources:

1. *Induction program enrollment records*. Each participating teacher completed an enrollment process from which we were able to assess his or her work assignments and personal demography. During enrollment, they also provided informed consent for participation in an analysis of their induction experiences.

2. *A candidate/coach match satisfaction survey*. A survey of how satisfying the novice teachers found the match with their induction coaches to be was administered approximately one-third of the way through the induction period. This survey addressed the nature of the participating teachers' experiences of, and satisfaction with, their support-providing coaches.

3. *Discussion board transcripts from the Haiku Learning instructional management system*. The Haiku system collected a variety of interaction data for each candidate.

Candidates responded to the seven cycles of inquiry that constituted the "curriculum" of the induction program. For what became the focus of our analysis, they also participated in discussion board interactions with their fellow participating teachers (and, to a lesser extent, with their assigned coaches). In addition to providing open-ended opportunities for professional dialogue and interest sharing, the postings on the discussion board were purposely linked to assignments in each of the formal inquiry cycles of the induction program. In total, the 18 teachers in this study generated 221 single-spaced pages of discussion board transcripts (including, where appropriate, the give-and-take discussions with others among the 81 teachers

participating in the online induction program). The Haiku system required each participating teacher to create a personal wiki to record projects and experiences. The case study teachers generated wiki postings ranging from a bit over 10 megabytes to nearly a gigabyte of text and video data. While we undertook preliminary analyses of these wiki data sets, this present report provides interpretation of the discussion board experience and data. The wikis, by design, provided for sharing artifacts and work product more than for interactive discussion; they are therefore left for another research study.

The first step in data analysis was to abstract from the enrollment data and the satisfaction surveys information that would serve to characterize the 18 teachers in the sample and provide a demographic description of their status in the induction program.

With descriptions of participating teachers in hand, the five researchers conducting this investigation studied the 18 case files. For initial reading, all five members of the research team read the same three cases, and each member of the team read an additional three cases. Following the initial reading, discussion among the research team members identified key analytic issues, and then all members of the team undertook a review of the records from all 18 teachers to identify commonalities and uniquely important insights.

Triangulating among the three types of data—induction program enrollment records, a candidate/coach match satisfaction survey, and discussion board transcripts from the Haiku Learning instructional management system—researchers looked for trends that highlighted relationships between new teachers and support providers. Questions addressed to the data included the following: Was the relationship between the new teacher and the support provider positive on both personal and professional levels? Did it appear that the new teacher's needs were being met both in the day-to-day realities of the P–12 classroom and in the requirements of the new online formative assessment system (the curriculum of new teacher induction)?

Teachers in Our Sample

As noted, 18 teachers pursuing California "clear credentials" for professional certification composed the multicase sample for this study. These teachers were drawn from among the 81 teachers in the RIMS-BTSA pilot online induction program operating in 2013–2014. The 81 inductees in the online induction program compose just over 5% of the 1,614 participating teachers in the entire RIMS-BTSA program that year. As is normal in qualitative case study research, this sample was not randomly drawn but rather was drawn to represent the diverse demography of the online and larger RIMS-BTSA programs. The objective in drawing the sample was to include participating teachers representing the full range of BTSA participants in order to secure data covering the nature and range of experiences provided to the online induction program participants. Tables 1–6 report the demographic profiles

of the 18 sample teachers as they are found nested within the 81 online pilot study teachers, nested, in turn, within the entire RIMS-BTSA induction program.

Table 1 presents the ethnic breakdown of the three teacher groups: the 18 teachers in our study sample nested within the RIMS online participants, nested within all RIMS induction program teachers. The table reports the counts and the percentage distribution for each of the nested groups. Generally speaking, the study sample is a good representation of both the total population of RIMS-BTSA teachers and of the 81 participants in the pilot study program. The largest percentage-based distortions in ethnic representation are those of the single African American in the entire online cohort, who also was selected among the 18 case study teachers, and the two Asian/Indian teachers in the final subsample of 18. The single African American participant underrepresents the total program cohort but overrepresents the 1% in the online cohort program.

The 11% Asian/Indian membership in the study sample overrepresents their membership in the two larger groups. With this small sample, these representations are as close to appropriate representation as is possible. Review of the data in Tables 2–6 makes it clear that these ethnic distortions were necessary to secure a sample adequately balanced in other ways.

Table 2 presents the gender breakdown of the teacher groups. The study sample very closely reflects the total population breakdown (74% female in total group; 78% in pilot program; and 78% in the study sample of 18).

Table 1

Sample Teacher Ethnicity

Ethnicity	All RIMS		Online		Sample 18	
	No.	%	No.	%	No.	%
African American or Black	57	4	1	1	1	6
Asian/Indian	47	3	4	5	2	11
Caucasian (non-Hispanic)	1016	63	50	62	10	56
Latino	380	24	19	23	5	28
Other/unknown	114	7	7	9		0
Totals	1,614		81		18	

Table 2

Sample Teacher Gender

Gender	All RIMS		Online		Sample 18	
	No.	%	No.	%	No.	%
Female	1,197	74	63	78	14	78
Male	417	26	18	22	4	22
Totals	1,614		81		18	

Table 3 reports the age-group distribution of the participating teachers in three age categories. The total program and the all-online participants are a bit younger than the 18-member sample. While about 45% of the two program groups are aged 30 years or younger, only 33% of the sample is that young.

Table 4 reports the teaching level assignments of the participating teachers. In the 2013–2014 program cohort, secondary school appointments are a bit over-represented in the total RIMS-BTSA program, and the mixed-assignment group is overrepresented in the online pilot program. The 18-teacher study sample represents elementary and secondary teachers equally and does not have representation from the small group of more specialized/mixed-assignment teachers.

Table 5 lists the school district structures within which the participating teach-

Table 3
Sample Teacher Age Groups

	All RIMS		Online		Sample 18	
Age group	No.	%	No.	%	No.	%
<31 years	739	46	38	47	6	33
31–40 years	535	33	28	35	7	39
>41 years	340	21	15	19	5	28
Totals	1,614		81		18	

Table 4
Sample Teacher School Levels

	All RIMS	Online		Sample 18	
School level	No.	%	No.	%	No.	%
Elementary	718	44	34	42	9	50
Secondary	875	54	38	47	9	50
Pre-K to 12 (mixed)	21	1	9	11	0	0
Totals	1,614		81		18	

Table 5
Sample Teacher Employer School Structure

	All RIMS		Online		Sample 18	
District structure	No.	%	No.	%	No.	%
Public	1,233	76	32	40	11	61
Private	24	1	16	20	4	22
Charter	357	22	14	17	3	17
Other/unknown	0	0	19	23	0	0
Totals	1,614		81		18	

ers are working. Most participating teachers worked in public, noncharter schools (76% of the overall-program group). The other types of assignments are substantially overrepresented in the online program group (only 51.8% of the 62 teachers with known assignments worked in regular public schools in this program). The 18-teacher study sample overrepresents private school settings (4 of 18, or 22%, compared with approximately 1.5% in the total program group). The online program group was unusual in having 19 teachers with unique or unknown district structure characteristics. This arose because the advertising for the program specifically invited teachers who were comfortable with online educational programs and thus recruited several teachers, with unreported district structures who were managing online experiences for public or private school students.

Table 6 confirms the uniqueness of the online program group implied in Table 5. When comparing the classroom contexts of the teacher groups, we see that the full RIMS-BTSA program was overwhelmingly serving teachers working in traditional brick-and-mortar classrooms (88% of the new teachers were in this type of setting). Fewer than half of the online program participants worked in traditional classrooms, however. Nearly one-third of them (31%) were working in online instructional programs. Another 22% were working with independent study students, leaving only 42% working in brick-and-mortar classrooms. The 18 teachers selected as the case study sample adjusted the balance back toward the overall RIMS-BTSA enrollment group by the inclusion of a dozen (67%) members of this sample from among the online group's 34 regular classroom teachers.

Overall, the 18-teacher study sample is adequately, if not perfectly, representative of the larger RIMS-BTSA population and generally represents the overall online group while intentionally sampling to correct some of the imbalances found in this pilot program group. Representativeness is not assessed in any quantitative tests of group differences because the purpose of this study is to document and interpret the range of new teacher experiences in an online induction program. We selected representatively so as not to miss important differences in new teacher experiences. Only after these experiences have been properly mapped and interpreted would it

Table 6
Sample Teacher School Type

Context	All RIMS		Online		Sample 18	
	No.	%	No.	%	No.	%
Online	34	2	25	31	3	17
Brick and mortar	1420	88	34	42	12	67
Independent	107	7	18	22	2	11
Blended	52	3	3	4	1	6
Unknown	1	0	1	1	0	0
Totals	1,614		81		18	

be appropriate to build statistical models showing reliable group similarities and differences.

Satisfaction Survey

All participants in the RIMS-BTSA program, including the online pilot program participants, were asked to respond to a short survey regarding their contacts with support providers/coaches and their satisfaction with the coaching relationships they experienced. Responses to five questions on this survey are comparatively summarized in Table 7. As indicated in the table, Question 2 on the survey inquired

Table 7
Mean Responses of the Three Program Groups to Annual Satisfaction Survey

Survey question text	Teachers with satisfaction data, mean (n)			Response scale
	All RIMS[a]	All online[b]	Sample of 18[c]	
2. How satisfied are you with your support provider/ reflective coach match?	3.63 (1,042)	3.50 (66)	3.33 (18)	1 = not satisfied 2 = a little satisfied 3 = satisfied 4 = very satisfied
4. On average, how FREQUENTLY do you meet, ONE-ON-ONE, with your support provider/ reflective coach about issues related to your teaching practice? This would include curriculum, instruction, formative assessment, preparing or sharing materials, etc.?[d]	3.53 (1,026)	2.97 (60)	3.13 (16)	1 = less than once per month 2 = once per month 3 = twice per month 4 = weekly 5 = 2–3 times per week 6 = daily
5. On average, HOW LONG are the ONE-ON-ONE meetings with your support provider/reflective coach?[e]	2.18 (1,022)	1.22 (60)	1.13 (15)	1 = 30 min or less 2 = 31–60 min 3 = 61–90 min 4 = more than 90 min
6. IN ADDITION to scheduled one-on-one meetings with your support provider/reflective coach, HOW FREQUENTLY do you communicate about issues related to your teaching practice?[d]	3.88 (1,019)	3.25 (61)	3.35 (17)	1 = less than once per month 2 = once per month 3 = twice per month 4 = weekly 5 = 2–3 times per week 6 = daily
8. In terms of meeting your overall needs and completing program requirements, how adequate is the time you spent with your support provider/reflective coach?	3.42 (1,034)	3.17 (64)	3.06 (17)	1 = not adequate 2 = a little adequate 3 = adequate 4 = more than adequate

[a]*N* = 1,052. [b]*N* = 66. [c]*N* = 18. [d]Reverse coded. [e]New scale.

of the participating teachers how satisfied they were with their relationship to a support provider/coach. Overall, the new teachers report being "satisfied"—these mean scores are well above 3.0 on a 4-point scale. We do note, however, that the online group, and especially the 18-teacher study sample, were somewhat less well satisfied with these relationships. The survey does not indicate why this lower satisfaction level existed, but we were sensitive to taking this into account when interpreting their experiences.

Question 4 on the survey inquired about the frequency of one-on-one meetings between the new teacher and the support provider/coach. Although the programmatic expectation was for weekly meetings, the reported frequency was a bit less, especially for the online program and the study sample. The online pilot program group reported the lowest frequency at just below twice per month. In exploring the online experience, therefore, it will be important in future research to explore whether the lower frequency of meetings is affecting the quality of the novice–mentor interactions.

Question 5 on the survey inquired into how long the one-on-one meetings with support providers/coaches lasted when they were held. The total group generally reported that meetings lasted an hour or more, whereas the online group were likely to report that the meetings lasted closer to 30 minutes. Program guidelines do not specify how long the meetings should last but emphasize that the meetings are to assist the novice teachers with their professional development and to develop a problem-solving relationship. It will be important to note in examining data from the 18-teacher sample whether their reportedly shorter meetings represent increased efficiency in support provision, a substitution of online for one-on-one contact, or possibly a loss in program effectiveness.

In response to Question 6 on the survey, all the groups reported meeting on substantive questions more than twice per month in addition to regularly scheduled meetings. Hence the novices and their mentors were in substantive contact a bit more than once per week. As with the regularly scheduled meetings, the online and study sample participants met somewhat less frequently with support providers/coaches than the total RIMS-BTSA cohort.

In response to Question 8 on the survey, all groups reported that work with their support providers/coaches was adequate to their needs. Here again, the full RIMS-BTSA group was more likely than the online group to report that the help they were receiving was "more than adequate." This is an area that deserves close attention in our qualitative data analysis.

Before leaving our description of the selected sample of online teachers who were the focus of our case studies, we should note that although most of the teachers who participated in the online pilot program did so voluntarily and may have had other induction program options to choose from, eight of the teachers in the study sample were located in a district that administratively assigned them to participation in this pilot program. We selected these teachers for inclusion in the study sample because we believe that their experiences will more closely approximate the typical

induction experience, as most new teachers do not have alternative programs from which to choose.

In the body of this report, we have concentrated on distilling the general tenor and structure of candidate teachers' experiences rather than detailing the experiences of each of the 18 case study teachers. To help contextualize their program experiences, however, we have provided brief sketches of two of the case study teachers (presented in the appendix). The two teachers featured in these brief sketches were chosen as representative and because their discussion board data were augmented with some transcribed e-mail exchanges with their coaches.

The BTSA Program Design for These Teachers

The RIMS-BTSA online induction pilot program provides beginning teachers with support and professional learning aimed at ensuring successful transition into the classroom.[1] The fully online 2013–2014 pilot program provided a balanced program linking support from a coach/mentor for each new teacher and a learning structure comprising a substantially revised professional development and formative assessment system. The program was designed to accommodate the needs of individual teachers working in unique instructional settings while also developing systematic exposure to key elements in the CSTP. The coaching model provided "just-in-time" support and coaching for the novice teachers, along with carefully designed conversation starters triggered by a formative assessment system. New teachers are supported with approximately 1 hour per week of individualized coaching via telephone or Internet communication (e.g., e-mail, discussion posts, FaceTime, or Google Hangouts). In addition to this individualized coaching, new teachers were provided with the seven professional development and formative assessment activities noted earlier. These were presented in 4-week cycles of inquiry. In the online system, as with the rest of the RIMS-BTSA induction program, the coaching relationship is expected to be a central feature of the new teacher's experience.

Seven Cycles of Inquiry

The seven cycles in the online induction program's formative assessment system constitute a professional learning "curriculum" serving to enrich new teachers' analytical, community-building, and instructional skills. In addition to the CSTP, key elements of the California Common Core state standards, such as choice, flexibility, discovery, creativity, and technology enhancements, are highlighted in the program. Along with providing systematic exposure to standards, the online induction curriculum provides numerous links to support resources. The seven inquiry cycles composing the online program include (a) building community to support learning, (b) effective management: student perception and engagement, (c) planning and analyzing student learning, (d) approaches to instructional design,

(e) self-selected inquiry, (f) differentiating for success, and (g) strategies for a successful end-of-the-year.

A Professional Learning Plan within the Inquiry Cycles

Beginning teachers and their coaches participate together in an online synchronous session lasting approximately 1 hour during the first week and the last week of each 4-week cycle. During each cycle, teachers pursue a set of orienting questions and a cyclic sequence of knowledge extension, application, reflection, and collaboration related to the current topic. The cycles begin with three self-assessment questions the teachers ask themselves (with regard to the professional development issue that is the focus of the current inquiry cycle):

1. Where am I now?
2. Where am I going?
3. How can I close the gap between reality and ideal?

As each inquiry cycle proceeds, these self-assessment questions are addressed, along with specific references to (a) the California Common Core state standards for instruction, (b) strategies for working with English learners, (c) ways of assisting students with special needs, and (d) a plan for meeting the CSTP.

The first session in each cycle is designed to "extend knowledge" for the new teachers by providing them with in-depth examination of the cycle's focal topic and related resources. Assigned cycle learning tasks are explained. In the following 2 weeks, teachers purposefully apply new learning and are encouraged to collaborate with peers via a discussion board designed to provide opportunities for structured dialogue with fellow teachers and the coaches. In the final synchronous session, teachers come together to share evidence-based self-reflection captured through a variety of Web tools. Documents and comments are preserved on an individual wiki for each new teacher. Coaches post written feedback that includes an area of strength, a question that prompts further thinking, and a reference to further resources. The core elements of each cycle are presented in Figure 1.

We investigate in the following data discussion whether new teachers found participation in the RIMS-BTSA online induction program to provide meaningful application within their classrooms. Although it is not possible to test the online experience against the former documentation-heavy program, we expected the data to show meaningful and authentic experience in the restructured teacher induction program.

The Coaching Model

As designed for this pilot induction program, the coaching model uses online coaches, each assigned to several induction candidates. The six coaches in our study sample each worked with 4 to 23 teachers, of which 1 to 6 were selected in

the 18-teacher subsample. Coaches receive training in three areas: (a) coaching skills, (b) use of the Haiku learning management system (LMS; described later), and (c) the induction program design and requirements. The coaches support the induction candidates in a variety of ways. All candidates work with a coach and respond to assigned tasks and formative program queries regarding their learning and satisfaction expressed in electronic discussions, construction of personal wiki pages, and summative electronic surveys. The allocation and number of candidates assigned to coaches varied, depending on instructional and grade-level needs. The primary criterion for candidate and coach matching was alignment of candidate curricular assignments with coaches' teaching experiences. In the instances where the candidate teaches across a range of academic subjects or grades, the coach's teaching experience was not always matched. The coaches themselves represent varied employment settings, full-time teachers, part-time release from the classroom, and fully credentialed county office staff.

All of the coach–candidate interactions in this pilot program were conducted electronically. Some interactions took place via e-mail and telephone, but these interactions were generally not preserved and do not constitute a substantial part of the data being interpreted in this report. In addition to their initial training,

Figure 1
Induction Program Inquiry Cycles

coaches participated in synchronous and asynchronous online sessions with access to archived training and video tutorials.

The Haiku and Google Documents Data Systems

Haiku was the LMS software selected as the platform for implementation of this pilot induction program. Haiku supports both synchronous and asynchronous electronic communication, together with provision for storage and distribution of documents, photos, videos, and other resources. The Haiku system is organized in the format of a series of online classrooms with three levels of participants. The candidate inductees are registered as students, coaches are registered as instructors, and RCOE senior staff are registered as system administrators. The "lessons" conducted in the Haiku "classrooms" include the presentation of graphics, introduction to a variety of Web-based instructional resources, opportunities to make inquiry assignments, synchronous instruction sessions where candidates are invited to extend their understanding of key elements in each inquiry theme, the development of discussion board posts, and the production of small personal Web pages (wikis) for each candidate. The wikis allow for uploading of external documents, including video, written documents, and photographs. Within Haiku, each of the seven cycles is represented on its own page so that candidates move through the system in sequence. Content is presented, including directions and curricular goals, along with support resources. From these cycle pages and the aforementioned communication processes, the candidates and coaches interact with the curriculum and each other throughout the cycle. As candidates demonstrate or collect evidence, they make posts and responses using the discussion board feature and their personal wiki spaces.

In addition to Haiku as the repository of curriculum and the conduit of evidence collection, a number of candidates became proficient in the use of Google sites and Google docs as presentation tools and video production. Because of their real-time archival structure, Google drives allowed candidates continuing access to their compendia of work and artifacts.

As a LMS, Haiku includes the equivalent of a "gradebook"—a record-keeping tool that allows for tracking inquiry cycle completion and creating progress reports. Coaches and program administrators access this dimension of the LMS for monitoring and credentialing requirements.

New Teacher Induction Experiences
Found in Discussion Board Data

We begin this section by reiterating that this is very much an interim, in-progress report of how the study sample teachers engaged in and learned from their induction program participation. Data from the novice teachers' personal wikis in the Haiku Learning system were difficult to retrieve, preserve, and align in ways that

allowed for a systematic look at each new teacher candidate. Additionally, we found that a substantial amount of the interaction between the participating teachers and their support providers/coaches was inaccessible because it was conducted via unrecorded telephone or e-mail connections that were not preserved. We did have e-mail records for 4 of the 18 members of the study sample and learned from those four cases that e-mail use was both sharply varied in quantity and equally varied in the extent to which it attended to matters of coaching substance, as distinguished from simple management of the process of keeping the participating teachers engaged and on task.

The first important observation about the online data from the 18 teachers in our study sample is that these teacher credential candidates were generally not novice teachers just entering the public school classroom for the first time. Six of the teachers reported at some point during the course of their participation in the program that they had 5 or more years of classroom experience prior to joining this online induction program (one teacher reported having had 14 years of prior experience). Only two of the study sample teachers confirmed being new to the classroom (two others provided no information about prior teaching experience, while one had served as an adjunct college professor), and the remaining five study teachers had from 1 to 4 years of experience before joining the induction program. The teaching experiences of these teachers were either not in California or not in regular K–12 classrooms, or they involved service as long-term substitute teachers rather than regular classroom teachers. This degree of prior teaching experience is a bit unusual (though not entirely unprecedented). Two contributing factors led to delayed enrollment in an induction program: (a) During the year of the study, school districts were still suffering from serious budget reductions brought on by the 2008 recession, making employment of new teachers difficult, and (b) induction program participating teachers are required to hold a regular teaching assignment during their induction period. It is important to note, however, that teaching experience alone does not always determine the level of confidence and satisfaction of the new teacher. Kim,[2] who has 5 years' teaching experience, is teaching fifth grade in a private, parochial setting and comments on long-term planning:

> Long term planning in a small private school is a lonely job. I am the only fifth grade teacher at my site and consequently do not have a team with which I can plan and set goals. My school offers little to no support in this area and we are left to our own devices to make sure our students achieve what is necessary to move on to the next grade.

In contrast, Tamika, a first-year fourth-grade teacher, says,

> So when I came to the fourth grade, the team already planned out the year and made a pacing guide that went along with state standards and the district pacing. We just recently took a day to rework the pacing guide so it went along with the Common Core.

So teaching context and teaching experience varied in this sample.

The sample teachers were unusual in another important respect: One-third of them were working in online, independent study or hybrid (partially online) classroom settings. Although the observation does not apply equally to all six of these teachers, a general theme in their self-assessments is that they are more comfortable with their knowledge of subject matter and lesson planning than they are with adapting lessons for diverse students or with managing student engagement. One of the independent study math teachers is an exception to this generalization, as she reports, "I find it easy to get them [students] to participate in lessons, answer questions and take risks in making mistakes."

Among the participating study sample teachers with less (or unknown) prior teaching experience, growth opportunities in the induction program were seen as quite varied. One new teacher reported, "I need to work on control. For example, 43% of my students agreed that students behave so badly that it slows down learning." By contrast, an equally inexperienced young teacher reports her area of expertise to be "professional growth" while reporting as a focus for growth "creating a rigorous learning environment with high expectations." These also differed sharply with regard to assessing the program or their working relationships with their support providers/coaches. The young teacher feeling challenged tended not to complete survey requests for additional evaluation data, whereas the more confident young teacher responded routinely and expressed satisfaction throughout the program.

The amount of data provided through Haiku by each of the study sample teachers varied enormously. At the high end were candidate teachers like Pete, who wrote approximately 2,500 words of text on the Haiku discussion board, in addition to more than 1,500 words used in responding to various Haiku inquiry cycle prompts provided to him. Near the opposite end of the distribution was Dawn, who provided only approximately 1,300 words on the discussion board and fewer than 1,000 in response to the Haiku Learning prompts during the inquiry cycles. The difference is not just a matter of quantity; close examination of their writing shows substantial differences in their levels of analysis. Dawn's writing evinces excitement about the posting provided by others but tends not to provide analytic or expansive remarks, whereas Pete's is often substantive and nuanced.

Another way of getting a feel for how the discussion board process is working is to see the number of times each participating candidate has posted a comment. Half the participating teachers appeared on the discussion board 25 or more times (58 times was the record). The other half appeared 24 or fewer times (two of them had only 12 postings).

In further examining the discussion board, we also wanted to be able to tease out this issue of formative assessment demands interfering with just-in-time teaching needs, which often permeates the narrative in the literature on induction program effectiveness. What we found, however, was that the candidates often talked about formative assessment (curriculum) as it intersected with a problem they were having in the classroom.

For example, Chris describes to a peer how she is attempting to use cooperative learning with her second graders (an induction program assignment). She says,

> I am attempting the cooperative learning model with my first graders. It will be interesting with our little ones. I have also found that maintaining control of an effective environment during independent group/center work has been a challenge. The dynamics of my classroom are constantly changing due to students coming and going. I have four new students in the last month and now I'm up to thirty students. This assignment has helped me look at my grouping and focus on the needs of the individuals and groups in my class. Hope this will help with your kinders as well. We will have to bounce these ideas off each other after this assignment to compare notes. Good luck.

Another example is Maria, who is focusing on effective management. She completed an assignment on in-class surveys on her students. Maria comments, "After I read my answers to the survey my students took, I knew I had to make changes IMMEDIATELY." Maria continued to explain the differences she made in her classroom based on the survey results. She finally concludes by saying to another candidate, "I feel your pain—it was difficult for me too. But now I see it as room for improvement. I reflect every day and make a note on what worked best and how I can improve the rest." So perhaps it is possible to design activities in induction, where the often-discussed tension between the immediate classroom needs of the new teacher and the induction program activities is minimized and/or at least balanced in a positive, purposeful manner.

Summary and Conclusions

The vision of the RIMS-BTSA online pilot induction program was to provide an efficient and effective induction experience as an alternative to the FACT. RIMS-BTSA online induction used a four-step model as the theoretical underpinning of the program: *extend knowledge* (strategic examination of pedagogy and resources), *apply* (purposeful application of new learning; job embedded), *reflect* (evidence-based self-reflection captured through a variety of Web tools), and *collaborate* (coaching conversations; peer feedback and resource sharing). This four-pronged model was not unlike the plan, teach, reflect, and apply model that was integral to the previously state-mandated California's Formative Support and Assessment Program for Beginning Teachers (CFASST) and the more recently mandated system known as FACT. One significant difference from these earlier California induction programs was the use of online delivery methods with a variety of Web tools to support the new teachers. Another noted difference was that coaches supported the new teachers primarily through electronic communication strategies. There was little or no face-to-face coaching.

As was stated earlier in this report, it seemed appropriate, given the restrictions of LCFF, to develop and test a comprehensive, well-designed induction program,

one that used online methodologies as its primary delivery system. In the pilot program, candidates (new teachers) worked with their coaches and responded to assigned tasks just like in traditional induction programs in California. However, in the pilot program, candidates expressed their learning in (a) electronic discussions, (b) construction of personal wikis, and (c) summative electronic surveys.

Once the pilot program was implemented, it was possible to examine the cogency of the program design. In other words, was the vision of the Online Pilot Induction Program realized through effective program implementation, or were there real-time modifications and adjustments changing the substance of the program? When looking at overall satisfaction with the program, online participants viewed the time spent with their coaches as less adequate than participants in the face-to-face induction program. Analysis of the personal wikis posted by the candidates was unproductive owing to the complexity of the supporting software and high variability in candidate interpretations of both the instructions and the overall purpose of the wikis. The electronic summative surveys provided useful information but did not reveal "in the heat of the moment" conceptual understanding and thought processes of the candidates as they did their work. So, in essence, we were trying to determine the overall effectiveness of the pilot program.

The discussion board was originally conceptualized as a means for candidates to interact with their peers and coaches about their formative assessment activities (curriculum) and for providing a vehicle for the candidates to talk about their immediate issues and feelings about their teaching, their classrooms, and the students in their classrooms. It seemed that this component of the model would reveal information about the viability of the use of discussion boards within an induction program. As implemented, candidates were asked to make one comment about each of their formative assessment tasks (n = 6) and one comment to another peer for each of those six tasks, for a total of 12 postings. Additionally, coaches were explicitly discouraged from responding to candidate postings. It was theorized by the staff responsible for program implementation that coach postings within the discussion board would inhibit candidates' postings and affect candidates' overall comfort level in freely discussing their concerns within a digital environment.

In examining the actual results, we find that candidates were able to use pedagogical language to discuss the formative assessment tasks within the discussion board. This was true even for teachers expressing concerns regarding the clarity of the task descriptions. Joan, who posted 58 comments, discusses her personal beliefs about the classroom. She says,

> My belief about the classroom is that I am there to teach and to help students learn. I know that that is what we are all after, but sometimes it is hard to keep this in mind with all the tests we have to accomplish. I try to make learning fun and active. I saw last year that we did games, activities, and movement—the students grasp the concepts faster and were excited to do it again. I am excited to read about everyone else here.

Joan is able to describe her beliefs about teaching and comment on her aspirations for the discussion board requirement.

Alejandra, a first-year teacher with only 19 posts, describes a communication strategy that she implements in her classroom:

> I found Remind 101 helpful because the messages go straight to the parents' phones. Phone messages are much more convenient for my parents. Implementing this strategy now has been helpful but I have only eight parents signed up for it. I feel, if I had introduced this at the beginning of the school year, I would have had a better percentage of students signed up.

In terms of the restriction of coaches commenting on the discussion board, some coaches did post comments to their candidates, while others followed the directive not to post comments to their candidate(s) within the discussion board. Cathy, a second-year elementary teacher, comments to her coach who asked her a question. She responds, "Coach 3, you are so right when you say that there are gaps that I need to fill in. In learning my new curriculum, I have realized that I do not have much time to fill in the gaps." Coach 3 on numerous occasions does comment to her candidates. It may be that Coach 3 has had more mentoring experience compared to other coaches in the program, but it is encouraging that even in an online induction environment, coaches can communicate with their mentees in a positive, collaborative manner.

Perhaps online induction programs would benefit from a structured protocol for coaches on how, when, and why to communicate with their mentees. In each of the components of this online induction program, that is, the curriculum, the discussion board, and the communication system between coach and mentee (e-mail, telephone calls, texts, etc.), we found that the coach was intertwined with and linked to the success of the mentee. Therefore, the coach needs to understand the best methods and strategies of interacting, collaborating, probing, and giving targeted feedback to mentees. All of these components need to be structured in such a way that there is a clear record of events between the coach and the mentee so that self-assessment can occur on the part of the coach and potential interventions can be developed and implemented for the mentee in the online induction program. This would also be helpful for program evaluation.

Although this study was limited by the complexity of the supporting software and the variance in teacher understanding of the pilot program's instructions and requirements, overall, there are positive indications that optimism regarding the effectiveness of online new teacher induction programs is justified. Further research is needed with careful attention to the way in which the program supports coach and candidate interactions in an online environment. This should include effective elements of online pedagogy and the construction of program design elements that focus on collaborative dialogue and impact.

Notes

[1] Starting with the 2014–2015 implementation year, the unit has been renamed the "Center for Teacher Innovation (CTI)." The online delivery model has moved beyond the status of pilot program toward full integration into the CTI new teacher induction program.

[2] Pseudonyms are used throughout.

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Appendix
Brief Sketches of "Kate" and "Pete," Two of the Candidate Teachers

Kate

Kate represents the expected target of new teacher induction programs in that she is reasonably young and facing personal as well as professional anxieties and uncertainties. She had quite a bit of teaching experience as a substitute, but she is untypical in not having had a regular teaching assignment when she begins the induction process.

Kate begins this online induction program while serving in the first of two long-term substitute teaching positions in a rural upper desert community in Southern California's San Bernardino County. Although she had not yet acquired a regular full-time teaching position, she sought access to this induction program because she had obtained a preliminary teaching credential that required her to undergo a 2-year induction program within 5 years or lose authorization to use the preliminary credential. She had a substantial amount of irregular teaching experience, having worked in substitute teaching positions in San Bernardino County since 1999. At program entry, she is teaching fifth grade in an elementary self-contained classroom in a brick-and-mortar school.

Although her working experience is not typical, Kate appears to have the concerns and attitudes of typical new teachers. She strives to learn more about curriculum and school policies, for example, Common Core and procedures for identification of Gifted and Talented Education (a state-funded program) students. She feels stronger than most new teachers in her classroom management skills, probably due to her experience with substitute teaching. Later in the academic year, working in her second placement as a long-term substitute, Kate expresses concern about her professional development through the induction program. Her concern springs, in part at least, from the lack of a permanent teaching position. As she indicates in one post on the discussion board, her teaching assignment is not compatible with learning at least one aspect of the teaching craft. As she puts it, "because I am a long-term sub, I can't really do long-term lesson plans." She tried to cope with this dilemma by using the district's pacing guide but could only plan 1 week at a time.

She also reports some discomfort with learning from her fifth-grade teacher partner. When he asks if she needs help, she reports having problems expressing herself to him because of his status as a veteran teacher. As a result, she just keeps focusing on the day and week, without really seeing the big picture.

Based on e-mails between Kate and her coach (not her fifth-grade colleague), it is revealed that Kate's grandmother had died in the Midwest in December of the year of the program. Kate got behind in her assignments in the induction program and had some further problems with depression that resulted in her getting behind in the course curriculum. However, Kate's coach seemed very empathetic and continued to offer targeted support and extra coaching, resulting in Kate finishing the induction program assignments on time. Kate expresses numerous thanks in her e-mail exchanges with her coach.

Kate also shares in her final discussion board post that she feels good about her teaching year and that her students finished in a positive frame of mind.

In sum, despite a rocky start and some challenging personal circumstances during the year, Kate reports having benefitted from her online induction program experience. Although she struggled with personal issues, and some on-site school problems related to her lack of a permanent teaching assignment, she did receive extra support and feedback from her assigned coach in the induction program, allowing her to clear her teaching credential and put her in a better position to pursue a permanent teaching position in the district.

Pete

Pete contrasts sharply with Kate in a number of ways. He is male, of course, giving him minority status in that regard. He is also quite experienced in regular teaching assignments and has been serving in a part-time administrative post as a vice principal. Pete is also a bit unusual as he is currently teaching in a private school where he has apparently spent all of his professional career.

Pete is a U.S. history and journalism instructor serving in a private high school in a mid-sized city approximately 200 miles from the RCOE, where the induction program is located. Hence his entire relationship with the program is conducted via the Internet using the program's LMS and e-mail contact with his assigned reflective coach. Describing himself, Pete says,

> This is my 9th year at [his private high school] and I love my job. I'm a firm believer that ALL students can learn, and that teachers should ensure their students are proficient in whichever subject matter they teach. It's not easy by any means, but I feel that should be the goal of every teacher.

Pete has 13 postings on the induction program discussion board (somewhat fewer than average). Six of his postings are responses to assignments from the induction program. This is the minimum required of all candidate teachers. The other seven of his postings are in response to assigned posts made by other candidates. In no case is there a discussion chain longer than a three-part sequence of an original post, a response to that post, and a brief comment on the response; that is, there is no evidence of a sustained interchange with either his coach or his peer teachers.

In his posts, Pete uses the technical language of his profession comfortably. He refers to technology resources for maintaining contact with students, family, and other profession-als. He discusses the Common Core curriculum knowledgeably and describes the pace of its implementation in his school. He discusses instructional pacing and student assessment comfortably.

In discussing his successful end-of-year relationship with students, he says,

> At our school the newspaper comes out the week before school gets out. Therefore my journalism students are essentially done. Rather than give them a final exam, I have them create a professional portfolio. The basic idea is for students to create a portfolio as if they were applying for a job in journalism. They can apply as a writer, designer, photographer, or a combination.

He goes on to discuss the portfolio development process and the end-of-year presentation of the portfolios. He concludes with, "It's . . . cool for them to get feedback from their peers. The environment that day is really relaxed, and the kids really reflect on their work and time in the class. It's a neat experience."

Unlike Kate, Pete has taken charge of his induction experience and uses it to (a) demon-strate how his teaching already aligns with standards and program expectations and to (b) offer some advice to his peers. It appears, then, that the induction program serves rather different functions for novice and more experienced teachers—even though this is not built into the program design, which is nominally intended just for novices. Given the frequency with which teachers entering California induction programs have already been exposed to substantial classroom teaching experience as substitute teachers, teachers in private schools, or teachers with experience in other states, policy makers should consider what kinds of induction experi-ences are most helpful for more experienced, permanent credential candidates.