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Assessing Quality in the Teaching of Content to English Language Learners

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Abstract

This paper offers a chain of evidence collected to identify and verify the domain of teacher knowledge and skills required to teach ELLs content effectively in mathematics, science, reading/English language arts, and social studies. We initially assessed this domain through a review of literature and state standards for nonspecialized teacher certification. We developed a set of 67 evidence statements in 2 categories: pedagogical knowledge and linguistic knowledge. We conducted a national survey of practitioners and teacher educators to validate these statements, receiving 269 responses. A panel of 14 teacher educators and teachers further validated the statements by reaching consensus that the statements support the claims of the assessment under development. We found that the domain of knowledge necessary to teach ELLs in the content areas is insufficiently defined in the standards and literature. However, we identified that across the content areas, teachers should have knowledge and understanding of the register of the particular discipline. Beyond merely understanding the linguistic demands of a given discipline, teachers should also be able to raise ELLs' metalinguistic awareness of effective oral and written communication in the language of the content area.

Also, teachers' use of multimodal instructional materials was deemed commonly essential in assessing teacher knowledge. Finally, we acknowledge that the chain of evidence collected in this line of research is a small step taken forward to understanding what should be assessed and how. With that, we offer future directions for research.

Key words: content teachers of ELLs, teacher knowledge base, assessment, evidence-centered design

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It is widely recognized that in many parts of the United States, English language learners (ELLs) attend schools where there is an insufficient supply of trained and qualified educators (Barron & Menken, 2002; Kindler, 2002; Reeves, 2009; Tellez & Waxman, 2006). In this report, we describe and document the sources of evidence that we have collected to initiate the identification of the knowledge base that *all* teachers of ELLs need in order to teach content to ELLs. In identifying the essential knowledge base needed to teach ELLs, we contend that the educational lens through which the success of ELLs at U.S. schools is viewed should no longer dichotomize content and language instruction. It is now generally recognized that content and language instruction should be integrated to meet the needs of linguistically and culturally diverse students. This integration is critical to meet the language and content needs of language minority students because they are faced with cognitive loads in learning both the content and the language particular to each content area, while simultaneously developing their English-language proficiency. Adding to this complexity, ELLs come to the U.S. schools with varying levels of first or native language (L1) proficiency, varying degrees of formal education experience, and varying understandings of what school is, and what its related routines and behaviors entail (Short & Fitzsimmons, 2007).

In the first year of our research, we aimed to develop a research-based framework of what entry-level teachers need to know and do in order to teach content to ELLs effectively. We acknowledge that it is an iterative process to validate a comprehensive framework of the essential teacher knowledge base through consultation with professionals in the field. Working towards the goal of conceptualizing a comprehensive framework of this specialized knowledge base, we established the chain of evidence for the effective practices of teaching ELLs in the four content areas of mathematics, science, reading/English language arts (ELA), and social studies through three steps. First, we gathered baseline data through a review of state standards for teachers in instructing ELLs. Then, through a review of the literature and consultation with practitioners and researchers, we began constructing a framework of teacher knowledge for teaching ELLs content. Finally, we synthesized domains of knowledge and skills of effective teachers from the literature reviewed and sought input through a national survey of teachers and from a panel of teachers, teacher educators, and researchers to inform and validate these domains. The panel of experts helped to shape and revise some of the proposed statements around the essential teacher knowledge and skills needed to teach ELLs.

In this paper, we first present our review of state standards, and then explain the procedures we used to collect evidence and why we chose those procedures. Following this, we present the domains of knowledge and skills we uncovered that apply across the four content areas, as well as those domains that were specific to particular content areas. Finally, we present a discussion and our conclusions, including suggestions for further research.

Review of State Standards

A review of state standards published by the National Comprehensive Center for Teacher Quality reveals that of the 50 states, only Arizona specifies that mainstream teachers should complete 1–3 credit hours of English as a second language (ESL) coursework (National Comprehensive Center for Teacher Quality, 2009). No other state requires a specific number of credit hours in ESL coursework. The picture is only slightly more optimistic when it comes to requiring all general-education mainstream teachers to complete coursework in methods of teaching ELLs; five states (Alaska, Arizona, California, Florida, New York) have this requirement. In contrast, nearly all states offer an ESL teaching license and many offer a license in teaching bilingual education. It is important to note, however, that mainstream content teachers are not obliged to undertake ESL or bilingual licensure.

To build on the set of data that the National Comprehensive Center for Teacher Quality presents, we reviewed the existing current state standards required for all content teachers of ELLs, with a focus on expectations for teacher content knowledge and pedagogical skills. Concerning general pedagogy standards, most states have adopted the following National Council for Accreditation of Teacher Education (NCATE, 2008) standard: “Candidates understand diversity, including English language learners (ELLs) & students with exceptionalities” (p. 3). Similarly, the introduction to the Interstate Teacher Assessment and Support Consortium (inTASC) Model Core Teaching Standards states that “[t]eachers need to recognize that all learners bring to their learning varying experiences, abilities, talents, and prior learning, as well as language, culture, and family and community values that are assets that can be used to promote their learning” (Council of Chief State School Officers, 2011, p. 3). We found that nine states generally abided by the NCATE standards for teaching ELLs or diverse learners.

However, these standards may not provide enough guidance to support teacher quality in delivering content instruction to ELLs. The following statement presents an example of how a

particular state adopted the standard from NCATE: “The teacher candidate is knowledgeable about the connections between a student's use of language and his/her success in learning; is competent in developing all students' language skills and communication techniques across the curriculum; and models effective language skills and communication techniques” (Ballantyne, Gomez, Gorena, Levy, & Sanderman, 2008, pp. 126–127). Statements like these are not specific enough to guide either the states or the teacher education programs in educating all teachers of ELLs to help them meet content-specific learning needs and language demands. This observation is confirmed by the following objectives identified in the NCATE standards for diversity (NCATE, 2008, p. 3):

- Candidate proficiencies related to diversity are articulated by the unit.
- Candidates understand diversity, including English language learners (ELLs) & students with exceptionalities.
- Candidates develop & teach lessons that incorporate diversity.
- Candidates connect instruction & services to students’ experiences & cultures.
- Candidates demonstrate sensitivity to cultural & gender differences.
- Candidates incorporate multiple perspectives in their instruction.
- Candidates develop classroom/school climates that value diversity.
- Candidates understand teaching & learning styles & can adapt instruction.
- Candidates demonstrate dispositions valuing fairness & learning by all.
- Assessments provide data on candidate ability to help students from diverse populations learn.

In comparison, the Teachers of English to Speakers of Other Languages (TESOL, 2009) standards comprise the other major set of national standards adopted by some states. However, it is not clear as to how states differentiate the standards required of ESL teachers from those required of all content teachers at all grade levels. The ESL endorsement requires teachers whose instructional load includes language arts and/or primary English-language provision to complete 15 college semester hours or 60 points of in-service training. In fact, it is a common pattern across all of the states that the TESOL endorsement or certification is required of ELA teachers

and/or content teachers whose instructional load directly relates to teaching limited English proficient (LEP) students. This indicates that a set of standards distinct from the TESOL standards are lacking—standards that apply to the content-specific language demands of content instruction and that are required of all mainstream content teachers at preservice or in-service levels.

Arizona serves as another example of a state where standards for teachers of ELLs could be more precise in providing guidance in teacher preparation and professional development. Teachers of ELLs are required to follow a framework of structured English immersion (SEI) instruction, which focuses on phonology (pronunciation, i.e., the sound system of a language), morphology (the internal structure and forms of words), syntax (English word-order rules), lexicon (vocabulary), and semantics (how to use English in different situations and contexts). Although an SEI, ESL, or bilingual endorsement has been required of all classroom teachers, supervisors, principals, and superintendents in Arizona since August 31, 2006, it is not clear from the reviewed state documents whether ESL or content teachers are actually able to enact the SEI instruction in the classroom. Similarly, it is not clear from the state standards how the focus on SEI instruction is supposed to prepare content teachers for helping ELLs to meet content-specific language demands.

In summary, the set of state policy and regulatory data we analyzed did not illuminate our search for content-specific standards for teaching ELLs. In fact, the state standards included sweeping generalizations, such as "the educator should know about the process of second language acquisition and about strategies to support the learning of students whose first language is not English" (Kansas State Department of Education, 2009, p. 59) or that "programs prepare professional educators to teach a diverse student population (ethnicity, socio-economic status, English Language Learners [ELL], giftedness and inclusion of students with special needs in regular classrooms)" (Maryland PTA, 2010). In conclusion, the standards that states set for the programs that prepare in-service teachers or teacher candidates were found to be rather general. To help define what teachers need to know in order to teach ELLs content effectively, we conducted a literature review, a survey of practitioners, and convened a panel of expert scholars and teachers. Our methods for collecting evidence are presented in the next section**.**

Methods for Collecting Evidence

Concurrent with the state standards review, we surveyed and synthesized relevant research literature since 1998 on effective practices for content teachers of ELLs. Works prior to 1998 were included if they were cited in multiple sources and viewed as seminal pieces in the field. We searched many databases including ERIC, Academic Search Premier, PsycINFO, Education Research Complete, Education Full Text, JSTOR, and Wilson Select Plus. One goal was to include the articles and reports that targeted the mainstream teachers in addition to teachers certified with bilingual endorsements and/or bilingual teachers with ESL teaching certifications. Due to the limited availability of empirical work on effective teacher knowledge, skills, and attributes (KSAs), we considered all articles published in peer-reviewed journals or in education magazines aimed at practitioners and policy makers.

Informed by the literature, we developed an online survey (see Appendix A) that helped us narrow the domain of teacher knowledge and skills to that knowledge and those skills that teachers need to teach mathematics, science, ELA, and social studies to English language learners. We do not elaborate on the results of the literature review in this paper. The teacher knowledge base informed by the literature was vetted by the survey respondents and, subsequently, by the panel of experts. The panelist and survey respondents made judgments about effective practice of entry-level rather than experienced teachers. Our rationale was that there is a need for licensure tests designed to assess the targeted knowledge and skills, and that such tests should capture essential skills for all teachers exiting teacher education programs.

National Survey

The online survey was designed for practitioners, researchers, and teacher educators to provide judgments on the importance of the knowledge and skills statements that emerged from the literature review. It consisted of four components: (a) a pedagogical section that included statements referring generally to the processes of teaching ELLs, (b) a linguistic section that contained statements referring to the linguistic processes involved in teaching content to ELLs, (c) a comments section, and (d) a demographics section. Within the pedagogical and linguistic sections, the statements were further organized into general statements and statements related to content-specific areas with a five-point rating scale ranging from 1 (*not at all important)* to 5 (*extremely important*). An example of a general statement is “The entry-level teacher of ELLs conveys clear curricular expectations to ELLs in rubrics.” An example of a content-specific

statement is “Sets positive expectations for ELLs as they talk and do mathematics or science.” After undergoing multiple revisions, the final version of the survey was sent through ETS fairness and sensitivity review. Prior to administering the survey nationally, all 67 statements were reviewed by two local practitioners with experience both in ESL teaching and in supporting content area teachers’ instructional practices at elementary through secondary levels.

The survey was administered nationwide through emailing teachers and teacher educators. A stratified random sample of 6,000 teachers and 4,000 college faculty who prepare K-12 teachers in mathematics, science, ELA, and social studies was selected from the database of educators maintained by Market Data Retrieval (MDR). A range of college faculty was sampled across the subject areas of mathematics, science, ELA, and social studies, reflecting their representation in the MDR database. A total of 1,000 faculty was targeted from each content area. However, the response rate was quite low; of the 4,000 faculty members who were invited to complete the survey, only a total of 64 responded.

Teachers across the elementary, middle-school, and high-school levels were sampled, predominantly from districts with high numbers of LEP student enrollment (i.e., 1,000+ students). The number of teachers at each grade available in the sample is given in Table 1. Also the actual number of teachers who responded is provided.

Table 1

Sampling Design for the Teachers in K-12 School Districts With High ELL Population

School level	Number of teachers available in the sample	Number of teachers sampled	Number of teachers who responded
Elementary	14,619	2,000	159
Middle school/junior high school	3,453	2,000	90
High school	3,071	2,000	20
Total	21,543	6,000	269

Note. ELL = English language learner; LEP = limited English proficiency.

In this sampling design, a total of 8,978 teachers and teacher educators whose e-mail addresses were available in the database received the e-mail. A total of 1,374 recipients actually opened the email. Out of those who opened it, 269 teachers and teacher educators completed the survey.

Panel of Experts

The survey statements were later presented to a panel of 14 teachers, teacher educators, and researchers in the fields of mathematics, science, ELA, and social studies. Three or four panelists represented each content area. The participating teachers had more than 5 years of experience teaching ELLs in their respective content areas and/or educating teachers of ELLs. The teacher educators and researchers had backgrounds in the following fields: teaching English to speakers of other languages, diversity in mathematics and science education, and systemic functional linguistics. The purpose of the advisory panel meeting was twofold. First, the panel members added to and confirmed the knowledge that is important for a candidate to possess in order to enter the practice of teaching mathematics, science, ELA, or social studies to ELLs. Second, experts and practitioners in the field were given the opportunity to shape a teacher assessment framework.

Evidence-Centered Design

Principles of evidence-centered design (ECD) guided the panelists' review of statements about linguistic and content knowledge necessary to instruct ELLs. ECD refers to an argument-based approach to designing educational assessments that was developed by ETS researchers in the 1990s (Mislevy, 1994; Mislevy, Almond, & Lukas, 2003). ECD introduced an evidentiary-focused framework for designing, producing, and delivering educational assessments that clearly identify and support claims about a test taker's knowledge or skills. Adapting the ECD design, we proposed several principles to guide panel discussion regarding the purpose, audience, and claims of an assessment of teachers' knowledge and skills in teaching content to ELLs. The panelists were informed that the purpose of the assessment is to measure requisite knowledge and skills for teachers to facilitate ELLs' access to and engagement in content knowledge, a crucial issue of equity.

If such an assessment were to be developed, we theorized that the claim based on those assessment results would be that content-area teachers of ELLs recognize the linguistic and pedagogical challenges that ELLs are facing in the classroom and differentiate their instructional

practices accordingly in order to engage ELLs in the discourse of mathematics, science, ELA, and social studies. More specifically, the highest level claim for the intended assessment concerns whether or not the teacher or teacher candidate who passes the test demonstrates sufficient knowledge and skills to teach content to ELLs safely and effectively. The lower level claims for such an assessment relate to the teacher or teacher candidate's knowledge and understanding of (a) linguistics, (b) pedagogy in teaching culturally and linguistically diverse students, and (c) content-specific academic language.

Informed by the ECD framework, the evidence necessary to support the claims is a work product or performance by the candidate that demonstrates the knowledge or skill required to meet the test claims. During the panel review, we posed the following question to researchers and practitioners to identify the evidence that demonstrates whether a candidate satisfies such test claims: "What behaviors or performances should demonstrate that a teacher of ELLs has the essential knowledge base to teach content?" In responding to this question, panelists were prompted to conceptualize what the teacher would *be doing* or would *produce* when demonstrating mastery of the particular knowledge or skills. They were also prompted to describe in general terms *what* the teacher must *do* or *produce* in order to demonstrate mastery of the components of the particular knowledge or skills. We systematically raised questions throughout the development of evidence statements in order to strengthen the argument conceptualized for an assessment of pedagogical and linguistic knowledge necessary to teach ELLs (see Appendix B). These questions were raised to keep the panel discussions focused in a linear fashion so panelists could arrive at evidence that demonstrates candidate's mastery of knowledge and skills. However, it should be noted as a limitation that despite facilitators' prompts, panelists adopted a habit of working on the evidence statement without explicitly unpacking and voicing their responses to the three questions. Thus, we do not have a record of panelists' linear reasoning in response to these questions.

For discussion of the general statements, the panelists were assigned to three subgroups such that each subgroup included teachers and teacher educators from the four content areas. For the content-specific discussions, each subgroup included teachers and teacher educators with specialization or experience in the particular content area being discussed. Discussions of the statements by the smaller subgroups were followed up with whole-group consensus-building discussions. Briefly, while conceptualizing the evidence that demonstrates whether the teachers

of ELLs have the knowledge and skills included in the essential knowledge base, the panelists were guided to follow these steps:

1. First, determine what it is in each statement that you would like to measure: List the topics/components that are central to defining the boundaries of the particular knowledge statement.
2. Second, ask yourself what would be sufficient evidence to demonstrate that a teacher possesses this knowledge, skill, or attribute.
3. Third, respond to the following filter questions about sufficient evidence:
    - Is the behavior/performance practical to elicit and clearly observable?
    - Is the product practical to elicit and easy to collect?

Domains and Subdomains of Teacher Knowledge

The online survey stayed active for approximately 4 weeks. At the end of the second week, the survey was deployed again. Descriptive analyses of survey results were conducted, particularly mean of ratings for each statement at the aggregate level. Also, aggregate data were analyzed for mean ratings by occupational subgroups such as *teacher* and *faculty*. The majority of the participants were teachers and White. Appendix A contains the mean ratings for the entire respondent sample and also for the two largest occupational subgroups, teachers and faculty. Survey results showed that all 67 teacher KSA statements satisfied the 3.5 criterion, set by the job analysis surveys conducted for standard setting studies at ETS. The statements received mean ratings higher than 3.5 at the aggregate level. Aggregate data from occupational subgroups revealed several mean ratings lower than 3.5. All of the statements below and above the mean criterion were presented to the panelists. Next, we provide some of the highlights from our review of literature that helped to construct arguments for what teachers should know and be able to do to teach content to ELLs. In the section that follows, we present the input from the panelists on the KSA statements.

Review of Literature

Our review of literature revealed two areas of instructional practice defining effective teaching of ELLs. One area, defined as *linguistically responsive practice requiring knowledge of linguistics*, is at the intersection of identifying the language demands that content poses for

ELLs' understanding. This area is applicable to understanding effective instructional practices that are prescribed across the literatures of all four content areas. The second area, requiring teachers' knowledge of pedagogy, covers all the effective instructional practices that do not just call for teachers' understanding and/or knowledge of linguistics.

Within the first area, we identified three properties of teacher knowledge about linguistic features, such as vocabulary, structure, and text, that apply to the teaching of all four content areas. These linguistic features appear to be tools that teachers need to master in order to facilitate ELLs' content understanding and develop ELLs' academic language skills. In relation to teachers' linguistic knowledge in these domains as it applies to teaching content, there were several arguments made across content areas. In terms of vocabulary as a linguistic feature, we drew the general argument that teachers should facilitate ELLs' distinction of academic vocabulary from everyday vocabulary (Calderón, 2007). In an insightful discussion on reading and its role in improving achievement in the content areas, Calderón (2007) highlighted the importance of teachers' identification of lexical challenges and emphasizes vocabulary development as a foundation for reading in the content areas. Based on the work of Beck, McKeown, and Kucan (2002), Calderón suggested that teachers distinguish words as belonging to one of three tiers. Tier I words are common, everyday words. If students do not know a Tier I word, the word will most likely represent a concept that students already know in their native language, but for which they have no label in English. Calderón exemplified *butterfly* as a Tier I word that ELLs may not know but for which they probably have the concept. Tier II words are more academic terms that are used across disciplines. As one teacher in Calderón's article put it, these words provide "ways of talking about school stuff" (p. 31). Tier III words are low-frequency words that may be content specific. These are more likely to have cognates in ELLs' home language because they are frequently content-specific words such as *osmosis*, *photosynthesis*, or *peninsula.* Making the distinction among these tiers is significant as Calderón made the case that English teachers should focus their vocabulary instruction on Tier I and II words so as to build a base for ELLs' acquisition of more content-specific Tier III academic vocabulary. In teaching academic vocabulary, Townsend and Collins (2009) drew on the findings of an intervention study to suggest that teachers should provide multiple direct exposures to target words in multiple texts and contexts so students could have various opportunities to use the words with personalized meanings.

In terms of teachers' knowledge of text and structure, we constructed arguments mainly around the need for teachers of ELLs to engage ELLs in these kinds of academic tasks, teachers model reasoning and the valued use of the discourse of the content area to support its use by ELLs (Schleppegrell, 2009). In modeling and engaging the use of the disciplinary discourse, the argument is that teachers should move ELLs back and forth in the hybrid space where everyday language and academic register intersect (Schleppegrell, 2009). For instance, particularly in teaching mathematics to ELLs, several authors discuss engaging ELLs in the discourse of mathematics in terms of a teacher's skill at enhancing ELLs' ability to "talk" mathematics (Bresser, Melanese, & Sphar, 2009; Fleming-Amos, 2007; Slavit & Ernst-Slavit, 2007). In order for teachers to support the mathematics talk that occurs in the classroom, they need to start by identifying the language demands involved in the goals of the lesson (Bresser et al., 2009). For instance, if the topic is to determine equivalent fractions, teachers should put down as a language goal to describe fractions in a way that is accessible to ELLs. Likewise, if the goal of the lesson is to classify and categorize geometric shapes, one language goal that teachers might identify would be to describe the categories chosen for the shapes. The authors noted that iterative modifications to teachers' instructional strategies could be applied as long as the ELLs start doing the following: "a) meet the mathematical goal, b) meet the language goal, c) participate more than they normally do in a mathematics class" (p. 175). Bresser et al. also suggested that teachers modify instruction, differentiating language goals according to the English proficiency levels of the ELLs. In this way, ELLs at various levels of English proficiency will be provided with opportunities to learn and may begin using the academic vocabulary and sentence structures associated with the content goal of the mathematics lesson.

Within the second area of effective instructional practice, one broad argument represented across the teacher KSA statements was that collaboration is an effective teaching practice that supports the teacher skill base of helping ELLs construct meaning from text. Teachers should design collaborative activities to provide ELLs with opportunities to fill in gaps in their comprehension of text and to construct meaning. Creating a collaborative classroom environment allows for linguistic interactions with peers and the teacher (Calderón, Hertz-Lazarowitz, & Slavin, 1998). Another argument that runs through the statements is that teachers should engage ELLs in meaning making (Ajayi, 2008). In that, we constructed statements arguing that teachers should find multiple ways to facilitate ELLs' textual meaning-making

through using their knowledge about the aspects of linguistics (semantics, syntax, morphology, and phonology).

In the remainder of the report, we present how panelists helped shape the teacher knowledge base further by providing indicators of performance demonstrative of teachers' KSAs. The statements were presented to the panelists in an order organized by thematic groupings (see Appendix C). As discussed above, these indicators were then consolidated into one consensus evidence statement to be affirmed through a vote by a majority of panelists (see Appendices D and E). Next, teachers' knowledge for teaching ELLs across content areas is presented under the domains of linguistic knowledge and pedagogical knowledge. Later, content-specific teacher knowledge and skills are presented under the same domain categories.

First, we present below the input gathered from the panelists concerning how some of the linguistic knowledge and skills might be reorganized:

Linguistic Knowledge

The statements that the panelists received concerned the subdomains of language knowledge necessary for teachers; namely, vocabulary, structure, and text. First, the statements are presented under the appropriate subdomain. Then, the panelists' collective input on the teacher performance indicators and explicit modifications to the statements are summarized and discussed for further consideration in defining the essential teacher knowledge base. The individual group-level input on teacher performance indicators is provided in Appendices D and E. Next, we present general trends in panelists' comments across several statements within each subdomain.

Lexical knowledge. Under the subdomain of teachers' KSAs in facilitating ELLs' understanding and use of academic vocabulary, the following statements were presented to the panel of experts. (The numbers in parentheses are the same as those assigned to the statements in the survey document; see Appendix A.)

1. Identifies general academic vocabulary often used in texts. (56)
2. Distinguishes between core content vocabulary and common everyday vocabulary. (33)
3. Helps ELLs identify areas of difficulty in academic vocabulary during in-class discussions of textbook passages. (37)

4. Builds on ELLs' knowledge of cognates between English and their home language. (32)

5. Teaches ELLs new vocabulary in context, both intentionally and incidentally. (10) (Panelist input is not available on this statement as it was presented to the panelists during the meeting as model for developing evidence statements.)

The panelists suggested that the first teacher knowledge statement be combined with the second teacher knowledge statement because both statements tap a similar level of cognitive and behavioral complexity in teachers' performance (i.e., identify and distinguish). The whole-group discussion led to an agreement that teachers should be expected to distinguish between core content vocabulary, cross-curricular academic vocabulary (e.g., polysemous verbs such as analyze, create, infer, describe, observe, predict, notice, resolve the conflict, solve the problem, calculate the parameter), and everyday vocabulary by using various instructional strategies (e.g., underlining the core content vocabulary, using word walls, using thinking maps to paraphrase the content-specific vocabulary in context, isolating terms/phrases, and then giving additional clarification, as needed) to help students understand the distinctions. The panelists also added that the *academic vocabulary* should be specified more narrowly as different types of verbs. Further, the panel collectively suggested that the statement include *false cognates* in the scope of this teacher skill. With the addition of false cognates into the statement, the panelists suggested that the teacher should be able to "use strategies (e.g., word walls, graphic organizers, semantic webs) to help ELLs build connections between cognates in their home language and English."

More substantially, with regard to the teacher performance indicators, the panelists, as a whole group, agreed that teachers should model "for students strategies (e.g., think-alouds, highlighting, Post-it notes) to identify academic vocabulary in written texts according to areas of difficulty (e.g., collocations, centrality to understanding concepts, abstraction level, connotation)." They also discussed the necessity of teachers guiding "students when they apply those strategies."

Syntactical and metalinguistic knowledge. This subdomain of syntactical and metalinguistic knowledge under the domain of teachers' knowledge of linguistics is concerned with a broad range of structural and strategic competencies that teachers of ELLs need to have. The majority of panelists suggested that teachers' understandings and knowledge around syntactical features of each content area should be incorporated under this subdomain. Again, we

present the themes emerging from panelists' input on teachers' understandings of structural features associated with the discourse of each content area in the classroom. The statements presented to the panelists were as follows:

- Includes language objectives alongside content objectives in planning lessons. (8)
- Knows that the discourse of academic texts in content areas (mathematics, science, social studies) includes the use of passive voice in describing events or explaining cause and effect. (42)
- Identifies parts of speech in sentence structures such as prepositional phrases, subordinate clauses, and irregular verbs in order to make academic texts accessible. (41)
- Teaches metacognitive language-learning strategies (e.g., having a purpose for reading in mind, steps in problem solving, acquiring study skills) to ELLs. (3)
- Develops ELLs' metalinguistic awareness of the English language (i.e., ability to distinguish between literal and implied meanings). (35)

While discussing these statements, the panelists suggested that teachers should demonstrate the knowledge and skills of including language objectives alongside context objectives in planning lessons whereby ELLs and non-ELLs are asked to show their understanding of academic content knowledge graphically, orally, and in writing at different levels of sentence complexity. The panel additionally composed the following concise performance indicator: "The teacher designs lessons that address language objectives appropriately matched to content objectives."

To further unpack what knowledge or understanding of linguistics go into designing lessons that address language objectives, panelists suggested that teachers' knowledge of the discourse characteristics of academic texts across content areas could be demonstrated if they are able to identify textual conventions common to specific academic disciplines. The panelists also thought that teachers' ability to identify textual conventions should not be narrowed to parts of speech. The panelists collectively suggested teachers' understanding of structure and meaning be demonstrated through their making "text more comprehensible by dissecting and chunking sentences to connect structure, function, and meaning."

In relation to teachers' ability to develop ELLs' metalinguistic awareness of the English language, it was suggested that teachers' efforts to develop ELLs' metalinguistic awareness would be valid if phrased as "in context of the content area." Collectively, the panelists consolidated the different ways in which teachers could develop ELLs' metalinguistic awareness with the following three performance indicators: "1) Teacher draws students' attention (e.g., feedback, modeling) to how the English language works in order to develop students' ability to self-monitor their understanding of language and content; 2) Teacher develops students' ability to analyze language and understand content by drawing students' attention to how the English language works; 3) Teacher prompts students to make connections between L1 and L2."

Textual knowledge. Within the domain of teacher knowledge of linguistics, the following two statements fell under the subdomain of textual competency:

- Explicitly explains to ELLs genres (e.g., journal, fact, expository, narrative) that are applicable to a specific content area. (16)
- Implements various strategies to differentiate instruction for ELLs' success in language and literacy development. (7)

The panelists consolidated the indicators for good teacher performance that would demonstrate skill in explaining to ELLs genres common to a specific content area as follows: "Teacher directs ELLs' attention to different linguistic and stylistic aspects of multiple genres and provides them opportunities to use the style required by the genre in their content area." While discussing this point, one subgroup of panelists came up with the following common genre types: "short explications in mathematics; procedures, procedural recount, science reports and explanations in science; and recount, account, explanations, and arguments in social studies." The panelists suggested that teachers should be teaching ELLs to use the style required by the genre common to or typical of a given content area.

Another consideration under this subdomain relates to the teachers' skill at implementing differentiated instructional strategies. While all three subgroups came up with alternative differentiated instructional strategies, the following performance indicator was consolidated from all of the individual group suggestions: "Teacher implements/adapts literacy development strategies (e.g., text adaptation, visual aids, leveled readers, pair reading, jigsaw reading) and oral

language development strategies (e.g., repetition, rephrasing, summarization) for different ELL proficiency levels."

Pedagogical Knowledge

Under the domain of teachers' pedagogical knowledge, the panelists received 16 statements (see Appendix A). Here, we present panelists' input around a selected set of statements.

In relation to teachers' ability to adapt texts (e.g., by paraphrasing unfamiliar expressions or unpacking complex statements into several simple sentences) to make content-specific concepts accessible to ELLs, the panelists expressed the reservation that teachers' practice of text adaptation might suggest simplification of the conceptual or cognitive demands of the content areas. This concern was addressed in the consolidated performance indicator stated as follows: "Given the proficiency level of an ELL, the teacher identifies potential roadblocks in the text, adapts it, and/or breaks it up into chunks to advance students' comprehension without diminishing the rigor of the content." The discussion led to emphasizing teachers' ability to facilitate ELLs' textual meaning-making through the use of teachers' knowledge of aspects of linguistics (semantics, syntax, morphology, and phonology). In formulating the indicators of teachers' ability to use their knowledge of linguistics to facilitate ELLs' textual meaning making, the panelists suggested that teachers should be able to analyze "critical linguistic features that will facilitate ELLs' understanding of the content of the text (e.g., prefix/suffix, antonyms/synonyms, notations, phrasal verbs, nominalization)." Another related proposition regarding teachers' transformation of textbook content into meaningful chunks was that for given a text passage, the teacher should be able to preview the key concepts and, during processing, help students divide text into comprehensible segments.

While textual analysis was considered to be an important trait, panelists also emphasized teachers' ability to "help ELLs decode meaning from highly abstract and culturally embedded phrases and sentences by encouraging them to infer meaning from context." However, in looking for indicators of good performance, the panelists collectively suggested adding the point that the teacher should not only model but also guide students to find and use "appropriate strategies (e.g., unpacking idioms, revisiting text to provide context for abstract terms, creating pictorial representations) to help ELLs infer meaning from context of highly abstract and culturally embedded phrases." With regard to facilitating ELLs' understanding of culturally-infused

content and language, we stated to the panelists that teachers should draw upon "ELLs' cultural and educational background to facilitate learners' comprehension and discussion of academic texts." In response, the panelists advised that the following performance would be indicative of teachers' knowledge and skills: "The teacher elicits cultural and educational experiences from students to help them make connections with the content (e.g., asks students to do research on a content topic and discuss with their families/community members and then provide culturally relevant experiences or artifacts to share with and present to peers; draws upon prior knowledge)."

Another common theme was concerned with teachers' knowledge base and ability to design production-oriented activities "to provide ELLs with the opportunities to express their ideas and perspectives in visual, spoken, or written format (e.g., choral speaking, teacher restating students' spoken ideas to clarify their reasoning, getting students talking in small groups)." Similarly, panelists concurred with the importance and effectiveness of helping ELLs to produce language and express their ideas and perspectives. In that, panelists emphasized teachers' ability to "scaffold ELLs' ability to rephrase or paraphrase academic language in their own words." The panelists suggested that teachers would demonstrate this scaffolding behavior by building "ELLs' abilities to understand concepts and reconstruct text through rephrasing and paraphrasing academic language, (e.g., alternating between academic and everyday language, finding synonyms, asking basic WH- questions)." Further, panelists added that teachers should provide ELLs with these sorts of opportunities to process content through the use of group or pair work. According to the panelists, to indicate engagement in this practice, "[the] teacher uses multiple grouping strategies (e.g., elbow partners, corners, clock partners, people by the same height, shoe size) to reorganize student team, pairs, small and whole groups."

Content-Specific Teacher Knowledge, Skills, and Attributes (KSAs)

This section presents the content-specific teacher KSA statements that were reviewed by the panel of content experts. The content-specific subgroups included three or four panelists in each content area: mathematics, science, ELA, and social studies. One team member facilitated each group's discussions of the performance indicators for each statement. We present the highlights of the input received from content focus groups in the following order: mathematics, science, ELA, and social studies (see Appendix E).

Mathematics. Thirteen statements were reviewed by panelists in this focus group. The group disagreed with the teacher knowledge and skill statement that proposed that science and mathematics teachers of ELLs should incorporate the contributions of non-Western scientists or mathematicians into the curriculum. Based on the mathematics panelists as well as the perspectives of the whole group, this statement was removed from the original list of 67 statements. The panelists identified the need for an additional statement focusing on engaging ELLs in using the discourse of mathematics. Other than this addition, all the other KSA statements were expanded with performance indicators of good practice.

The first statement was concerned with teachers' ability to "allow ELLs to demonstrate their understandings of mathematics or science concepts visually and orally or in ways familiar to ELLs." The four panelists agreed that in order for teachers to demonstrate this ability, they should be able to "use various strategies (math content posters, graphical representations, manipulatives, realia, and allowing for student initiative) to help ELLs demonstrate their understanding of math." In the same vein, there was agreement among the mathematics content experts that teachers should design lessons that incorporate the use of real-life objects and manipulatives and technology-based representations. In terms of incorporating the real-life problems, or tools for mathematical understanding, the panelists commented that to engage ELLs in understanding such mathematical concepts as linear equation, quadratic equation, and real statistical data, teachers should be able to refer to real-world situations that would call for the application of these mathematical concepts.

In relation to helping ELLs acquire the essential language proficiency needed to comprehend and express mathematical concepts, the panelists agreed with Statements 43 through 48. Because the unique characteristics of the register of mathematics is reflected in mathematical vocabulary, the panelists agreed that teaching the vocabulary specific to the academic language of mathematics is inherent to teaching content and making mathematical concepts comprehensible to ELLs. Moreover, the panelists argued that teachers should demonstrate their skill in developing ELLs' awareness of the linguistic features of mathematical notations by designing lessons that incorporate various representations of mathematical notation (e.g., written, oral, symbolic, and pictorial) to engage ELLs in using mathematical concepts.

Another point raised was that teachers should be able to help ELLs move back and forth between everyday language and the technical language of mathematics. To demonstrate this

skill, panelists envisioned that teachers should be able to design lessons that provide opportunities for ELLs to use academic mathematical language with or without teacher guidance in the form of repeating words, rephrasing sentences, modeling sentences, or providing the everyday language expressions corresponding to mathematics concepts. In relation to teaching mathematics-specific vocabulary (e.g., *divisor*, *denominator*, *integer*) in comprehensible ways, the consensus among the panelists was that teachers should be able to use multiple representations (pictorial, graphical, manipulative [e.g., algebra tiles, patterned blocks, flash cards, calculators]) to make mathematics-specific vocabulary comprehensible.

Closely related to raising ELLs' awareness of the linguistic features of the language of mathematics is the issue of engaging them in the discourse of mathematics. In order to engage ELLs in the comprehension and use of the register of mathematics, the panelists agreed that ELLs' awareness and mastery of the linguistic features of the register of mathematics need to be developed and/or reinforced. For instance, teachers might help ELLs develop metalinguistic strategies to decode meaning from complex phrases and sentences in mathematics word problems into more manageable units (e.g., think-alouds, highlighting/underlining relevant information in relation to the problem posed, raising prompting questions about the problem).

In a more general pedagogical sense, the panelists agreed that teachers should be able to model and use instructional strategies to engage ELLs in using and reflecting on the discourse of mathematics (e.g., elicitation of deductive or inductive reasoning, using definitions, probing questions, providing justifications). One specific observable behavior that demonstrates this teacher skill is when teachers use tasks that require ELLs to come up with statements or conjectures in defending, discussing, and presenting mathematical problems. Another way is for teachers to use or enact tasks that require ELLs to use mathematical reasoning and to produce a piece of writing (e.g., a flow chart, short description in a paragraph, or mathematical proof) about their reasoning of mathematical concepts or problems.

In establishing all of these benchmarks not only for teachers, but also for ELLs, another point of agreement among the panelists was that teachers should be able to set high expectations for ELLs as they engage in the register of mathematics or science. The panelists agreed that teachers should demonstrate this knowledge base by using and modeling "positive reinforcement (verbal and kinesthetic praise) to help ELLs move towards engagement in the register of mathematics or science."

Science. Overall, some points raised in the discussions within the science focus group were similar to ones raised by the mathematics experts. For instance, the science experts also disagreed with the teacher knowledge and skill statement that proposed that science and mathematics teachers of ELLs should incorporate the contributions of non-Western scientists or mathematicians into the curriculum. Science experts revised most of the KSA statements by rephrasing the statements and at other times adding subclaims for a general statement or subsuming a claim from one statement into another statement.

Two related claims for teacher KSAs were points of discussion among the panelists. Both had to do with teachers' skills or abilities to develop or raise awareness of ELLs' linguistic and academic abilities for the purpose of accessing science content or engaging in the practice of science. Specifically, to allow ELLs to engage in the practice of science, the panelists came up with subgoals specifying that teachers should develop ELLs' linguistic and academic abilities so ELLs can understand key concepts and big ideas, engage in inquiry-based science, give evidence and reasoning to justify arguments, and to foster scientific habits of mind. Various performance indicators were developed for these claims. For instance, the science experts agreed that to develop ELLs' linguistic and academic abilities, the teacher should be able to capitalize on ELLs' linguistic and cultural resources to help the students address challenges in understanding key concepts and big ideas (e.g., breaking down key concepts, facilitates ELLs' ability to express orally and/or through writing their application of science concepts to explain natural phenomena and to explain relationships among concepts).

For the other subclaims, the panelists consistently agreed that teachers should be able to model and guide ELLs in giving evidence and reasoning to justify arguments in oral, graphic, and/or written forms, and that they should model and engage ELLs in inquiry-based science activities orally and/or in writing in a collaborative setting. To foster ELLs' scientific habits of mind, the panelists agreed that teachers should foster a supportive environment for ELLs where questioning and argumentation are modeled, promoted, and valued.

In developing ELLs' awareness of the language of science to allow them to access content, the teacher should be able to demonstrate the behavior of modeling and guiding ELLs through the interaction of language structures, function, and meaning (e.g., breaking down sentences, chunking). Similarly, panelists agreed that teachers should be able to break down text

to model and guide students to an understanding of how language functions to express scientific ideas (e.g., descriptive language, logical sequences, logical relationships, explanations).

In addition to the theme of developing ELLs' linguistic and academic abilities, teachers' ability to make connections to ELLs' everyday lives was also of interest to the panelists. Therefore, the panelists agreed that sufficient evidence for teachers' ability to build connections between the register of science and ELLs' experiences in their everyday lives would be teachers' performance in eliciting students' everyday experiences as prior knowledge to build connections to the science content.

Lastly, the issue of teaching about scientific genres and actually scaffolding ELLs' writing in scientific genres was a major point of discussion. The panelists agreed that, in explaining typical scientific genres (e.g., procedure, procedural recount, science report, and science explanations) to ELLs, teachers should engage students in critical discussions about (and scaffold their writing in) scientific genres.

English language arts (ELA).The experts in the ELA focus group discussed at length the types of text and the linguistic demands of literary and nonliterary texts used in ELA classrooms. In order for teachers to demonstrate their ability to facilitate ELLs' participation in the active and critical discussions of texts used in the ELA classroom, the panelists suggested that they should be able to manage large and small class discussions about various forms of text that achieve student participation at a critical and analytical level. Also, the panelists suggested that teachers should choose texts that are appropriate for facilitating ELLs' success in reading (e.g., texts with phonetically regular and high-frequency words, as well as words of high relevance to students' personal lives). Panelists further suggested that teachers should continuously check for understanding, for example, by having students paraphrase, summarize, restate, and explain why they agree or disagree; and in small groups, by having students formulate their own questions, identify main ideas, and ask a range of higher order questions.

In facilitating ELLs' active engagement in ELA content, the teachers' knowledge of linguistics should reveal itself as well. That is, the panelists agreed that teachers should demonstrate their knowledge of semantics, syntax, morphology, and phonology as they identify linguistically demanding sentences, explain sources of complexity (semantic, syntactic, lexical), and provide examples. Teachers' ability to adapt or find texts appropriate for ELLs' proficiency levels was also emphasized with the argument that comprehension of core content concepts

should be mediated through various versions of text of a linguistic complexity appropriate to ELLs' proficiency levels. When the discussion moved to the genres applicable to ELA classrooms, the panelists agreed that teachers of ELLs should provide explicit instruction or explanation of the genres. In order for teachers to demonstrate their skills and ability to explain genres, the panelists suggested that teachers should be able to direct ELLs' attention to different linguistic and stylistic aspects of multiple genres in ELA (e.g., journal, narrative, exposition) and provide students with opportunities to use the style required by the genres in question.

Another area of emphasis was enhancing ELLs' vocabulary. First, the panelists agreed on various areas of difficulty that texts in ELA classes might pose for ELLs, such as derivations, homophones, collocations, and figurative language (e.g., idioms, metaphors). For instance, in relation to teachers' ability to deliver direct vocabulary instruction on derivations, homophones, and collocations, the panelists suggested that teachers should be able to preview and review vocabulary found in texts using techniques such as explicit analysis, semantic webs, lexical organizers, repetition, collocation, morphological analysis, and oral and written practice at levels ranging from easy to difficult in both receptive and productive modes. Also, teachers should be able to identify and provide explicit instruction about target vocabulary integral to the meaning of the core content. As for the linguistic demands of figurative language, the panelists suggested that in texts appropriate for the students within the instructional context, the teachers should be able to identify instances of figurative language (e.g., idioms, metaphors) and provide denotative synonyms and connotative or associative nuances of meaning.

Social studies. The experts in the social studies focus group discussed the general linguistic and cultural difficulties that social studies texts pose for ELLs. The panelists agreed that the concepts covered in social studies classrooms, such as U.S. civics and government topics, should be made relevant to ELLs' experiences or background concepts, including their experiences of their home cultures. Therefore, the panelists suggested that, as evidence of teachers' ability to draw upon their knowledge of the language of social studies and encourage ELLs to incorporate this language into classroom discussions of civics and government in the United States and similar topics in social studies, teachers should look for opportunities to connect students' prior experiences to the terminology and often culturally bound concepts addressed in civics and government. In the same vein, the panelists suggested that teachers should have knowledge of and respect for the various cultures represented in their classrooms

and be able to use various activities in the classroom to incorporate students' backgrounds and to elicit and utilize students' cultural knowledge as springboards for discussion.

Another relevant point of agreement among the panelists was that the types of texts that appear in social studies help to carry the meanings conveyed in relation to the content, such as social civic issues in the United States. Therefore, teachers should have the ability to explain explicitly to ELLs genres that are applicable to the social sciences (e.g., journal, fact, expository, narrative). Panelists envisioned that teachers should be able to demonstrate this ability by helping students identify perspective in what they read (i.e., sourcing) and by explicitly teaching genres as they apply to social studies (e.g., recounting, accounting, explaining, arguing).

As for developing ELLs' awareness of the language of social studies to make content accessible to them, the panelists agreed that teachers should be able to identify explicitly features of the text that make content comprehensible (e.g., transition words, passive voice, capitalization). Along with this, vocabulary instruction was agreed to be critical. Therefore, with regard to teachers' ability to represent academic vocabulary in social studies (e.g., *continent*, *landforms*, *goods*) in ways accessible to ELLs, the panelists suggested that teachers should be able to target instruction of vocabulary through the use of supplemental materials and activities such as realia, picture cards, video clips, and simulations. In the case of facilitating ELLs' access to highly abstract words in social studies, the panelists agreed that teachers should be able to guide students through strategies such as word analysis, dissecting, and chunking. Teachers should also be able to use examples, visual representations, and analogies to their students' own life experiences to make concepts more concrete.

The other specific linguistic challenge presented to the panelists was the tense structure and teachers' ability to recognize that ELLs' understanding of the use of specific tenses (e.g., the past tense) in social studies may vary. In demonstrating this recognition, the panelists agreed that teachers should be able to preview texts to determine potentially challenging or unfamiliar verb structures, recognize the grammatical complexity beyond the vocabulary used in social studies, and talk explicitly about tenses, voice, and time markers with students. In the area of developing ELLs' language proficiency in social studies, another teacher skill that the panelists all agreed upon was the integration of reading and writing activities for the development of an understanding of social studies-related concepts. As adequate demonstration of this skill, the panelists suggested that teachers be able to give students level-appropriate tasks; provide

students with a variety of materials at different reading levels on the topic being studied; and use strategies such as response journals, document-based questions, and graphic organizers to aid students in their social studies reading and writing tasks.

Discussion

No one would claim that teachers interact daily with a group of monolingual and monocultural students who are clones of each other in terms of culture, habit, and learning interests. Instead, teachers face a diverse group of learners each day. Beyond agreement here, the conversation needs to run deeper into implications for the pedagogical content knowledge and the knowledge of students, content, and teaching necessary to teach this set of diverse learners (Ball, Thames, & Phelps, 2008). Even if teachers are not certified in ESL, the burgeoning number of ELL students in the classroom requires that teachers reconsider how they teach content in the classroom. However, the research presented here shows that teachers have received little guidance. While state standards and regulations for teacher preparation exist, they offer such broad guidelines that it remains unclear how they can be translated into practice.

Our literature review provided a clearer path in which to ground our understanding of a teacher knowledge base. A wide range of theoretical and practical approaches provided a useful survey of important policy issues, information on the intersection of language and content, and suggested best practices for the classroom. However, the extent of research findings was uneven across content areas. Consistent substantive findings have been reported in the fields of mathematics and science. In the field of ELA, we found much discussion but little consensus about the role of the ELA teacher in instructing ELLs not only in the teacher's own discipline, but also in giving ELLs linguistic tools to use in the other content areas. Little discussion has occurred in the field of social studies beyond the prominent role of culture in defining and understanding national history.

The online survey results and input from the panel of experts helped to confirm the findings of our literature review concerning best practices. Survey respondents strongly agreed with the importance of all statements in defining what content teachers of ELLs need to know. Panelists helped develop evidence statements at the right granular size in order to inform assessment development in this area. Drawing upon their experiences and knowledge of teaching and characteristics of ELLs, panelists helped articulate the linguistic and pedagogical competencies teachers need.

The survey and panel results revealed commonalities across content areas in optimal teacher KSAs. Academic vocabulary, perhaps the most frequently discussed aspect of ELL instruction, ranked highly on the list of prerequisite teacher knowledge in its specific application to each content area's academic language. In addition, survey and panel findings supported the idea that teacher knowledge of academic texts and syntactical knowledge more broadly help teachers find ways to engage ELLs in academic discourse. Familiarity with genres within the disciplines was viewed by survey participants as essential. Moreover, both the survey and panel reinforced the claim that all these skills help teachers support ELLs in developing metalinguistic awareness throughout ELLs' schooling experiences.

Based on the results of the panel discussion and the survey, teachers of ELLs need to demonstrate skills in employing instructional strategies that involve arranging group or pair work and using multimodal representations of content, including manipulatives, graphic organizers, and realia. Related to the hands-on experiences these tools offer, teachers need to link ELLs' cultural knowledge to content by pulling in real-world contexts where relevant and eliciting students' prior linguistic or cultural experiences. One important byproduct of this pedagogical practice is that teachers move ELLs back and forth between informal everyday language and the academic register while making connections between learner's prior knowledge and the learning objectives.

All these considerations inherently offer implications for training teachers. One broad implication that cuts across all the other more specific implications is that content-area teacher training needs to incorporate course- and field-work that invokes learning about the linguistic aspects of each content area and how best to facilitate ELLs' linguistic challenges. Unless the linguistic demands in each content area are identified commonly across scholars in the field, it is certain that teacher education programs will have a hard time operationalizing and embedding in the field work teachers' linguistic and pedagogical knowledge needed to teach content to ELLs.

Conclusion

Currently, the field provides a somewhat murky picture of teaching quality for ELLs in the content areas of mathematics, science, ELA, and social studies. Our recent investigation into policy, research, and practitioner knowledge revealed that there is a rich source of teacher knowledge to define effective teaching for ELLs, however difficult it may be to locate a single coherent articulation of that knowledge. This is not on account of any group's failure to establish

or enact best practices. Rather, this research question and problem of practice illuminate the complexity of interactions between language and content in any student's first foray into an academic discipline, but it is especially true for an ELL.

Future research efforts should continue to support high-quality preparation and professional development for content-area teachers with linguistically diverse students. One main question that needs to be addressed concerns what teacher knowledge and skills are particular to teaching content to ELLs and not just all learners. To address this question and further unpack evidence statements in the areas of mathematics and science, a follow-up panel of experts was convened at ETS in Spring 2011. Other content areas need to be investigated further as well. That is, the ways content is mediated through language in mathematics, science, social studies, and the ELA must be more clearly delineated. Also, empirical research is needed to determine reliable measures of effective teaching practices and student modes of engagement. It is our hope that this review of the current state of the field along with guidance from expert practitioners and researchers have contributed to framing these issues in clearer, more constructive ways. The research presented in this report is one small step taken toward ensuring equitable, rigorous education for ELLs.

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Appendix A

Knowledge, Skill, and Attribute (KSA) Statements Presented to Panelists With Survey Data With a Survey Scale of 1–5 (Not at All Important to Extremely Important)

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	PEDAGOGY				
General pedagogy	1. Makes abstract content concepts accessible to ELLs.	354	4.21 (.851)	4.21	4.13
General pedagogy	2. Draws upon ELLs' cultural and educational background to facilitate learners' comprehension and discussion of academic texts.	353	4.51 (.670)	4.49	4.56
General pedagogy	3. Teaches metacognitive language-learning strategies (e.g., having a purpose for reading in mind, steps in problem solving, acquiring study skills) to ELLs.	352	4.43 (.692)	4.43	4.38
General pedagogy	4. Provides multiple opportunities for ELLs to process content in group contexts, including with their English-speaking monolingual or proficient bilingual peers (e.g., pair work assignments, mixed-ability groupings, whole-class discussions).	355	4.51 (.706)	4.48	4.58
General pedagogy	5. Provides ELLs with oral and visual support (e.g., think-alouds, word picture cards) to produce language orally and in writing.	353	4.72 (.573)	4.71	4.7
General pedagogy	6. Provides alternative forms of assessments for ELLs to gauge their comprehension and production of text.	351	4.43 (.745)	4.42	4.44

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	PEDAGOGY				
General pedagogy	7. Implements various strategies to differentiate instruction for ELLs' success in language and literacy development.	352	4.58 (.658)	4.55	4.63
General pedagogy	8. Includes language objectives alongside content objectives in planning lessons.	355	4.19 (.877)	4.18	4.14
General pedagogy	9. Supplements curriculum and textbook materials with other sources to aid ELL learning in content areas.	352	4.35 (.766)	4.34	4.34
General pedagogy	10. Teaches ELLs new vocabulary in context, both intentionally and incidentally.	354	4.63 (.543)	4.64	4.59
General pedagogy	11. Applies various methods to incorporate different interactional and task engagement styles that ELLs might bring from their cultural backgrounds into classroom work.	352	4.20 (.789)	4.20	4.15
General pedagogy	12. Develops ELLs' higher-order thinking skills through questioning and elicitation techniques.	352	4.37 (.717)	4.37	4.30
General pedagogy	13. Encourages critical thinking by acknowledging ELLs' diverse cultural experiences (e.g., arguments from authority may be highly valued and not confronted in some cultures).	350	4.30 (.763)	4.29	4.28
General pedagogy	14. Helps ELLs to understand discipline-specific concepts within a content area through the use of graphic organizers (e.g., word clusters, semantic maps, T-charts).	353	4.48 (.675)	4.46	4.50

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	PEDAGOGY				
General pedagogy	15. Adapts texts (e.g., paraphrasing unfamiliar expressions, or unpacking complex statements into several simple sentences) to make content-specific concepts accessible to ELLs.	353	4.50 (0.658)	4.53	4.30
General pedagogy	16. Explicitly explains to ELLs genres (e.g., journal, fact, expository, narrative) that are applicable to a specific content area.	353	4.22 (0.831)	4.25	4.00
Mathematics	17. Sets positive expectations for ELLs as they engage in the register of mathematics or science.	348	4.47 (0.623)	4.44	4.51
Mathematics	18. Allows ELLs to demonstrate their understandings of mathematics or science concepts visually and orally or in ways familiar to ELLs.	348	4.48 (0.642)	4.43	4.56
Mathematics	19. Incorporates the contributions of non-Western scientists or mathematicians into the curriculum.	347	3.71 (0.985)	3.64	3.98
Mathematics	20. Provides multiple opportunities for ELLs to participate in the solution of mathematical problems in class (e.g., think-pair-share and think-aloud activities).	348	4.47 (0.729)	4.41	4.64
Mathematics	21. Uses objects from real life (e.g., coupons, fruit, patterned blocks) to support ELLs' comprehension and learning of mathematics concepts.	347	4.60 (0.611)	4.60	4.59
Mathematics	22. Helps ELLs to solve mathematical problems and tasks by relating to real-world contexts.	344	4.53 (0.624)	4.51	4.59

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	PEDAGOGY				
Science	23. Helps ELLs gather materials, follow procedures, observe and record results, and draw a conclusion, sharing their results orally and in writing with peers in a science classroom.	338	4.35 (0.716)	4.31	4.43
Science	24. Develops ELLs' linguistic and academic abilities to engage in inquiry-based science lessons.	336	4.39 (0.737)	4.35	4.50
Science	25. Helps ELLs make a plan of action to address a scientific problem by having them formulate questions (e.g., What is my hypothesis? What materials will I need? What procedures or steps will I take to collect information? How will I observe and record results?).	336	4.33 (0.749)	4.30	4.32
ELA	26. Engages ELLs in critical discussions of multiple forms of texts (e.g., literary and nonliterary texts, print and electronic).	345	4.24 (0.813)	4.23	4.20
ELA	27. Applies various scaffolding strategies (e.g., peer-to-peer prewriting discussions, native language dictation and translation, dialog journals) for teaching writing to ELLs.	344	4.54 (0.711)	4.52	4.56
ELA	28. Uses context-based visuals to help ELLs make sense of the textbook's and teacher's language (e.g., magazine and Internet articles on fast food).	344	4.56 (0.636)	4.56	4.53
ELA	29. Integrates the content area topics within mathematics, science, and social studies into the reading and writing activities in ELA classroom.	346	4.39 (0.731)	4.36	4.48

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	PEDAGOGY				
Social studies	30. Incorporates academic language into classroom discussions of civics and government in the United States and similar topics in social studies.	339	4.37 (0.700)	4.42	4.09
Social studies	31. Incorporates ELLs' diverse cultural understandings of texts and interactions into discussions of social studies topics (e.g., cultural differences between the civic life in the United States and the ELLs' home culture).	341	4.47 (0.679)	4.45	4.51
	LINGUISTIC				
General linguistic	32. Builds on ELLs' knowledge of cognates between English and their home language.	351	4.25 (0.781)	4.27	4.11
General linguistic	33. Distinguishes between core content vocabulary and common everyday vocabulary.	351	4.10 (0.793)	4.08	4.08
General linguistic	34. Paces oral communications and instructions appropriately for ELLs' comprehension (e.g., repeats and reformulates ideas, avoids or teaches idioms and slang).	350	4.51 (0.641)	4.52	4.43
General linguistic	35. Develops ELLs' *metalinguistic awareness* of the English language (i.e., ability to distinguish between literal and implied meanings).	352	4.22 (0.760)	4.20	4.24
General linguistic	36. Designs production activities to provide ELLs with the opportunities to express their ideas and perspectives (e.g., choral speaking, teacher restating students' spoken ideas to clarify their reasoning, getting students talking in small groups).	351	4.41 (0.682)	4.39	4.37
General linguistic	37. Helps ELLs identify areas of difficulty in academic vocabulary (e.g., different types of verbs) during in-class discussions of textbook passages.	350	4.31 (0.788)	4.33	4.14

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	LINGUISTIC				
General linguistic	38. Helps ELLs decode meaning from highly abstract and culturally embedded phrases and sentences by encouraging them to infer meaning from context.	348	4.33 (0.757)	4.33	4.21
General linguistic	39. Transforms textbook content into meaningful chunks for ELLs (highlights key concepts and/or important ideas).	350	4.47 (0.688)	4.50	4.24
General linguistic	40. Scaffolds ELLs' ability to rephrase or paraphrase academic language in their own words.	352	4.53 (0.622)	4.53	4.43
General linguistic	41. Identifies parts of speech in sentence structures such as prepositional phrases, subordinate clauses, and irregular verbs in order to make academic texts accessible.	346	3.81 (0.026)	3.86	3.44
General linguistic	42. Knows that the discourse of academic texts in content areas (mathematics, science, social studies) includes the use of passive voice in describing events or explaining cause and effect.	347	3.81 (0.945)	3.84	3.56
Mathematics	43. Develops ELLs' awareness of the linguistic features of algebraic notations to facilitate ELLs' access to mathematics.	333	4.02 (0.827)	4.00	3.97

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	LINGUISTIC				
Mathematics	44. Transitions from everyday oral language to more technical language or register of mathematics.	331	4.17 (0.806)	4.17	4.12
Mathematics	45. Represents mathematics specific vocabulary (e.g., divisor, denominator, integer) in multiple comprehensible ways.	334	4.46 (0.677)	4.43	4.52
Mathematics	46. Facilitates ELLs' defending, discussing, and presenting their thinking and solutions around mathematics problems.	331	4.22 (0.757)	4.14	4.48
Mathematics	47. Facilitates ELLs' writing about their reasoning of problems or concepts in mathematics.	332	4.17 (0.820)	4.15	4.18
Mathematics	48. Helps ELLs develop metalinguistic strategies to decipher meaning from complex phrases and sentences in mathematics word problems.	332	4.27 (0.781)	4.26	4.28
Science	49. Develops ELLs' awareness of the language of science to make the content accessible to ELLs.	327	4.43 (0.636)	4.42	4.38
Science	50. Uses various methods or techniques (e.g., word and sentence walls, word picture cards) to make subject-specific vocabulary in science (e.g., omnivore, vertebrae, mineral) accessible to ELLs.	329	4.54 (0.662)	4.53	4.51
Science	51. Involves ELLs in active oral discussions of concepts in science through the use of authentic visuals and tools.	326	4.41 (0.668)	4.39	4.45
Science	52. Builds connections between the language of the science classroom and ELLs' experiences or their everyday lives.	327	4.46 (0.672)	4.43	4.54
Science	53. Integrates reading and writing activities to assist ELLs in learning science content.	326	4.40 (0.662)	4.40	4.35

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	LINGUISTIC				
Science	54. Designs activities in which ELLs paraphrase their understandings of the scientific text or task from their own perspectives.	326	4.33 (0.701)	4.28	4.44
Science	55. Facilitates ELLs' reasoning of language functions like contradictions, cause and effects, and chronological or logical sequence in science by explicitly teaching signposts like prepositions and conjunctions (e.g., *and*, *but*, *because*).	329	4.12 (0.837)	4.13	3.93
ELA	56. Identifies general academic vocabulary often used in language arts texts (e.g., *notice*, *think*, *analyze*).	334	4.39 (0.738)	4.41	4.21
ELA	57. Helps ELLs monitor their comprehension of academic texts in ELA.	336	4.33 (0.754)	4.34	4.21
ELA	58. Chooses texts that are appropriate to facilitate ELLs' success in reading (e.g., texts with phonetically regular and high-frequency words and words of high interest to students' personal lives).	336	4.52 (0.669)	4.52	4.45
ELA	59. Facilitates ELLs' access to linguistically demanding sentences found in language arts texts (e.g., the frequent use of relative clauses, adverbial clauses or phrases, or appositive phrases).	336	4.07 (0.862)	4.09	4.00
ELA	60. Uses knowledge of English linguistics (semantics, syntax, morphology, and phonology) to facilitate ELLs' textual meaning making	337	4.18 (0.819)	4.18	4.03
ELA	61. Provides ELLs with direct vocabulary instruction (e.g., derivations, homophones, collocations).	334	4.37 (0.778)	4.42	4.12
ELA	62. Explains connotative and denotative meanings of words, including idioms and figurative language, to ELLs.	337	4.31 (0.764)	4.35	4.10

Category	Domain statements/aggregate data	Overall group		Subgroup mean by occupation	
	The entry-level teacher of English language learners (ELLs) . . .	*N*	Mean (SD)	Teacher (*n* = 269)	Faculty (*n* = 64)
	LINGUISTIC				
Social Studies	63. Develops ELLs' awareness of the language of social studies to make the content accessible to ELLs.	330	4.4 (0.668)	4.42	4.23
Social Studies	64. Represents academic vocabulary in the social studies (e.g., continent, landforms, goods) in ways accessible to ELLs.	332	4.49 (0.657)	4.49	4.41
Social Studies	65. Helps ELLs gain access to highly abstract words in social studies by identifying complex word phrases (e.g., use of embedded clauses and prepositional phrases to condense the presentation of an idea) and extensive nominalization (e.g., expansion, contribution).	331	4.08 (0.886)	4.09	3.88
Social Studies	66. Recognizes that ELLs' understanding of the use of specific tenses (e.g., past tense) in social studies may vary.	331	4.17 (0.792)	4.20	3.95
Social Studies	67. Integrates reading and writing activities for ELLs to learn to develop social studies–related concepts.	327	4.43 (0.665)	4.43	4.40

Note. ELLs = English language learners; ELA = English language arts.

Appendix B

Guidelines for Generating Evidence Statements

As you start thinking about the evidence statements for the KSAs listed on your worksheets, please consider the following steps:

1) What is it about this teacher knowledge statement that you would like to measure?
   List the topics/components that are central to defining the boundaries of the knowledge statement.
   a. Is the component important to teaching content to ELLs?
2) What would be sufficient evidence from the teacher for the KSA (components from Step 1)?
   a. For Step 2, conceptualize what the teacher would *be doing* or would *produce* when demonstrating mastery of this topic/component.
   b. A statement of performance begins with an action verb, but must also include *observable behavior* or *a product* that can be evaluated (see Table B1 below).
3) Is the behavior or product practical and clear to measure?
   For Step 3, consider these questions:
   a. Is the behavior practical to elicit and clearly observable?
4) Is the product practical to elicit and easy to collect?
   a. The condition component of your evidence statement should describe the important conditions, if any, under which the performance is to occur. Conditions statements may include necessary tools, equipment, or special circumstances (e.g., identifies academic vocabulary <u>in various text types</u> (expository, literary), uses supplemental material to contextualize <u>academic vocabulary</u>).
   b. Try to keep the conditions *as general as possible* and to focus on conditions that are especially important for the particular KSA components and evidence listed in Steps 1 and 2.

Table B1

Verbs Suggested for Creating Evidence Statements.

Understands	Knows	Identifies
• Evaluate • Compare and contrast • Predict • Develop • Create • Analyze • Relate to other topics • Integrate multiple topics • Apply complex rules • Deduce • Interpret • Infer • Solve	• Explain • Summarize • Identify major characteristics of . . . • Identify strengths and weaknesses of . . . • Identify advantages and disadvantages of . . . • Describe the importance of … • Apply simple rules • Calculate	• List • Define • Classify • Recall • Recognize

Appendix C

The Order of General Knowledge, Skill, and Attribute (KSA) Statements Presented to the Panel

1. Language Knowledge
    a. Vocabulary
        i. (56.) Identifies general academic vocabulary often used in texts.
        ii. (33.) Distinguishes between core content vocabulary and common everyday vocabulary.
        iii. (37.) Helps ELLs identify areas of difficulty in academic vocabulary (e.g., different types of verbs) during in-class discussions of textbook passages.
        iv. (32.) Builds on ELLs' knowledge of cognates between English and their home language.
        v. (10.) Teaches ELLs new vocabulary in context, both intentionally and incidentally.
    b. Structural (linguistic)
        i. (8.) Includes language objectives alongside content objectives in planning lessons.
        ii. (42.) Knows that the discourse of academic texts in content areas (mathematics, science, social studies) includes the use of passive voice in describing events or explaining cause and effect.
        iii. (41.) Identifies parts of speech in sentence structures such as prepositional phrases, subordinate clauses, and irregular verbs in order to make academic texts accessible.
        iv. (3.) Teaches metacognitive language-learning strategies (e.g., having a purpose for reading in mind, steps in problem solving, acquiring study skills) to ELLs.

v. (35.) Develops ELLs' metalinguistic awareness of the English language (i.e., ability to distinguish between literal and implied meanings).

c. Textual

i. (16.) Explicitly explains to ELLs genres (e.g., journal, fact, expository, narrative) that are applicable to a specific content area.

ii. (7.) Implements various strategies to differentiate instruction for ELLs' success in language and literacy development.

2. Interdisciplinary Knowledge—Critical Thinking

a. (1.) Makes abstract content concepts accessible to ELLs.

b. (13.) Encourages critical thinking by acknowledging ELLs' diverse cultural experiences (e.g., arguments from authority may be highly valued and not confronted in some cultures).

c. (12.) Develops ELLs' higher-order thinking skills through questioning and elicitation techniques.

3. Pedagogical and Pedagogical-Content Knowledge

a. Supplements

i. (9.) Supplements curriculum and textbook materials with other sources to aid ELL learning in content areas.

ii. (14.) Helps ELLs to understand discipline-specific concepts within a content area through the use of graphic organizers (e.g., word clusters, semantic maps, T-charts).

b. Student Comprehension

i. (15.) Adapts texts (e.g., paraphrasing unfamiliar expressions, or unpacking complex statements into several simple sentences) to make content-specific concepts accessible to ELLs.

ii. (38.) Helps ELLs decode meaning from highly abstract and culturally embedded phrases and sentences by encouraging them to infer meaning from context.

iii. (2.) Draws upon ELLs' cultural and educational background to facilitate learners' comprehension and discussion of academic texts.

iv. (11.) Applies various methods to incorporate different interactional and task engagement styles that ELLs might bring from their cultural backgrounds into classroom work.

v. (34.) Paces oral communications and instructions appropriately for ELLs' comprehension (e.g., repeats and reformulates ideas, avoids or teaches idioms and slang).

vi. (39.) Transforms textbook content into meaningful chunks for ELLs (highlights key concepts and/or important ideas).

vii. (4.) Provides multiple opportunities for ELLs to process content in group contexts, including with their English-speaking monolingual or proficient bilingual peers (e.g., pair work assignments, mixed-ability groupings, whole-class discussions).

c. Student Production

i. (60.) Uses knowledge of English linguistics (semantics, syntax, morphology, and phonology) to facilitate ELLs' textual meaning making.

ii. (36.) Designs production activities to provide ELLs with the opportunities to express their ideas and perspectives (e.g., choral speaking, teacher restating students' spoken ideas to clarify their reasoning, getting students talking in small groups).

iii. (5.) Provides ELLs with oral and visual support (e.g., think-alouds, word picture cards) to produce language orally and in writing.

iv. (40.) Scaffolds ELLs' ability to rephrase or paraphrase academic language in their own words.

d. Assessment

(6.) Provides alternative forms of assessments for ELLs to gauge their comprehension and production of text.

Appendix D

Panel Review of General Knowledge, Skill, and Attribute (KSA) Statements

This chart presents the original general knowledge, skill, and attribute (KSA) statements in the order they were submitted to the panelists for review, the interpretations of the original KSA statements generated by three subgroups of panelists, the consensus statements arrived at after whole-group discussion by the panelists, and the final KSA statements with any revisions that resulted from the panelists' feedback. (The panel was divided into three heterogeneous subgroups. Each subgroup included teachers or teacher educators from the four content areas: mathematics, science, English language arts [ELA], and social studies). Note that not all statements had suggested revisions.

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
56	Identifies general academic vocabulary often used in language arts texts (e.g., notice, think, analyze). Identifies general academic vocabulary often used in academic texts.	
	Group 1	Identify the general academic across content areas (polysemous verbs; analyze, create, infer, describe, observe, predict, notice, resolve the conflict-solve the problem; calculate the parameter).
	Group 2	Given an educational text, the teacher lists words that are used specifically in academic contexts but may not necessarily be provided in glossaries as lesson-specific terms. Explicitly and consistently uses the academic vocabulary in instruction. Points out the difference between general and specific vocabulary (other uses).
	Group 3	The teacher identifies general academic vocabulary.
	Consensus	Given an educational text, teacher lists general academic vocabulary used across content areas.
56 (rev.)	Identifies general academic vocabulary often used in academic texts.	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
33	Distinguishes between core content vocabulary and common everyday vocabulary.	
	Group 1	The teacher understands and applies her knowledge of everyday, core content, and academic vocabulary to help student understand and apply (e.g., strategies [underlining the core content vocabulary, word walls, thinking maps])
	Group 2	Teacher paraphrases the content-specific vocabulary in context. Isolating terms/phrases, then giving additional clarification, as needed.
	Group 3	The teacher applies strategies to assist student understanding of words different meanings in everyday language than in core content.
	Consensus	The teacher uses strategies (e.g., underlining the core content vocabulary, word walls, thinking maps) to distinguish between core content vocabulary, cross-curricular academic vocabulary, and everyday vocabulary.
33 (rev.)	Distinguishes between core content vocabulary and common everyday vocabulary.	
37	Helps ELLs identify areas of difficulty in academic vocabulary (e.g., different types of verbs) during in-class discussions of textbook passages. Helps ELLs identify areas of difficulty in academic vocabulary (e.g., different types of verbs) during in-class discussions of textbook passages.	
	Group 1	The teacher models for students how to identify vocabulary on text passage in terms of difficulty through underlining, sticky notes, think aloud/read aloud, and self help/cooperative strategies.
	Group 2	Teacher guides ELLs' focus on texts. Teacher provides opportunities for students to actively engage in the texts (e.g., highlighting, Post-it Notes). Teacher has students categorize the more doing types of verbs vs. the more cognitive types of verbs. Teacher points out collocations in academic texts, which words are more central vs. more peripheral.
	Consensus	Teacher models for students strategies (e.g., think-alouds, highlighting, Post-it Notes) to identify academic vocabulary in written texts according to areas of difficulty (e.g., collocations, centrality to understanding concepts, abstraction level, connotation). Teacher guides students when they apply those strategies.
37 (rev.)	Helps ELLs identify areas of difficulty in academic vocabulary in written texts.	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
32	Builds on ELLs' knowledge of cognates between English and their home language.	
	Group 1	Teacher establishes routines of seeking cognates and false cognates in multiple languages through word walls, graphic organizers.
	Group 2	Teacher uses visual representations to make cognate connections such as word families, semantic webs, and other graphic organizers, and uses builds associated meanings with visual support when necessary to show patterns.
	Group 3	The teacher can ID an effective strategy for building on ELLs' knowledge of cognates.
32	Consensus	The teacher uses strategies (e.g., word walls, graphic organizers, semantic webs) to help ELLs build connections between cognates in their home language and English.
32 (rev.)	Builds on ELLs' knowledge of cognates and false cognates between English and their home language.	
8	Includes language objectives alongside content objectives in planning lessons.	
	Group 1	Identifies language objectives in a content objective. Teacher designs a lesson in which ELLs and non-ELLs are asked to show their understanding of academic content knowledge graphically, orally, and in writing at different levels of sentence complexity.
	Group 2	Creates language objectives for content area instruction. Integrates the language objectives into the content area objectives specific to particular lessons. Writes integrated standards-based content and language objectives appropriate for ELLs in their classrooms.
	Group 3	The teacher can correctly match a language objective or objectives with a content objective.
	Consensus	The teacher designs lessons that address language objectives appropriately matched to content objectives.
8 (rev.)	Includes language objectives alongside content objectives in planning lessons.	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
42	Knows that the discourse of academic texts in content areas (mathematics, science, social studies) includes the use of passive voice in describing events or explaining cause and effect.	
	Group 1	Teacher signals and models the different texts and makes students aware of the different characteristics of academic text across content areas Teacher provides opportunities for ELLs to produce oral/written parallels to the texts that were modeled.
	Group 2	Teacher highlights instances of passive voice used in a text to talk about its function.
	Group 3	Teacher can identify passive voice constructions as appropriate for their discipline (where active voice would not be).
	Consensus	Teacher identifies textual conventions (e.g., passive vs. active voice) common to specific academic discipline.
42 (rev.)	Knows that the discourse of academic texts in content areas (mathematics, science, ELA, social studies) utilizes linguistic structures and textual conventions specific to the content area.	
41	Identifies parts of speech in sentence structures, such as prepositional phrases, subordinate clauses, and irregular verbs in order to make academic texts accessible.	
	Group 1	Teacher makes text accessible by rephrasing grammatically complex sentences without losing the academic rigor of the content.
	Group 2	Remove statement. Clarifies lexical linguistic features such as sentence structures, phrases, groups, and clauses in order to make academic texts accessible. Uses isolated and paraphrased structures to make academic texts accessible. Dissects and chunks sentences into more comprehensible subparts.
	Group 3	Given a text, teachers will be able to ID the function (e.g., noun phrases as “actors,” verb phrases as “actions,” adjective phrases as “modifiers”) of parts of speech in the text (e.g., noun phrases as “actors,” verb phrases as “actions,” adjective phrases as “modifiers”).
	Consensus	Teacher makes text more comprehensible by dissecting and chunking sentences to connect structure, function, and meaning.

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
41 (rev.)	Understands sentence structures such as prepositional phrases, subordinate clauses, and irregular verbs in order to make academic texts accessible.	
3	Teaches metacognitive language language-learning strategies (e.g., having a purpose for reading in mind, steps in problem solving, acquiring study skills) to ELLs.	
	Group 1	The teacher asks students to use metacognitive language learning strategies, for example: 1. directing ELLs to look over the questions before reading the text 2. activating their background knowledge 3. reminding them to use existing strategies (e.g., identifying polysemous/ homophone words) and look for clues in the text.
	Group 2	Models and guides students through a think-aloud. Posts visual guides for students on how to learn the language. Uses think-pair-share to provide opportunities to practice the strategies (teacher observes and monitors students' usage).
	Group 3	Given a text with vocabulary or structures that may be difficult for a particular ELL or ELLs, the teacher can identify or describe appropriate language-learning strategies for the students to apply.
	Consensus	Teacher models language-learning strategies (e.g., think-aloud, identifying polysemous words) for students and guides them in applying those strategies.
3 (rev.)	Teaches metacognitive language learning strategies (e.g., having a purpose for reading in mind, steps in problem solving, acquiring study skills) to ELLs.	
35	Develops ELLs’ metalinguistic awareness of the English language (i.e., ability to distinguish between literal and implied meanings).	
	Group 1	Teacher asks students to identify the different elements of sentences in English. Teacher gives feedback on written student work or to oral communication by identifying parts of speech, word order, use of gender, conjugation.
	Group 2	Points out similarities and differences between students' L1 and L2. Uses students' ability to analyze language to further their comprehension of the content.

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
		Makes connections between sentence structures that may be familiar to them. Teaches students how to analyze words.
	Group 3	Teacher can describe why certain questions or supplementary activities are appropriate to develop ELLs higher order metalinguistic thinking skills.
	Consensus	Teacher draws students' attention (e.g., feedback, modeling) to how the English language works in order to develop students' ability to self-monitor their understanding of language and content. Teacher develops students' ability to analyze language and understand content by drawing students' attention to how the English language works. Teacher prompts students to make connections between L1 and L2.
35 (rev.)	Develops ELLs' metalinguistic awareness of the English language.	
16	Explicitly explains to ELLs genres (e.g., journal, fact, expository, narrative) that are common to a specific content area.	
	Group 1	Teacher directs ELLs' attention to different linguistic and stylistic aspects of multiple genres and exposes them to use the style required by the genre in their content area.
	Group 2	Instead of "applicable," use "common" or "typical." Teaches genres as they apply to a content area, for instance, short explications for mathematics, procedures, procedural recount, science reports, and explanations for science, and recount, account, explanations, and arguments in social studies.
	Group 3	Multiple choice: Given a particular example of a genre, a teacher is able to choose the best description of the genre or vice versa. Constructed response: Teacher describes x, y, z characteristics of content-specific texts. Constructed response: Teacher produces a rubric of what a particular genre in the content area must include.
	Consensus	Teacher directs ELLs' attention to different linguistic and stylistic aspects of multiple genres and provides them opportunities to use the style required by the genre in their content area.
16 (rev.)	Explicitly explains to ELLs genres (e.g., journal, expository, narrative) that are common to a specific content area.	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
7	Implements various strategies to differentiate instruction for ELLs' success in language and literacy development.	
	Group 1	Teacher implements/adapts literacy strategies (e.g., text adaptation, visual aids, leveled readers, pair reading, jigsaw reading, summarization) for different ELL proficiency levels.
	Group 2	Employs the use of hands-on materials, such as manipulatives and flashcards, and visual and auditory tools to help students understand content. Provides a variety of resources to help students access material. Uses multimodal strategies, including technology to help students develop their literacy skills. Provides opportunities for advanced-level students to explore topics further. Implementing flexible grouping in the classroom. In response to assessed proficiency, students are grouped in levels according to interventions recommended.
	Group 3	For a given content text and ELLs with particular characteristics, the teacher describes a strategy or strategies appropriate to develop students' language and literacy.
	Consensus	Teacher implements/adapts literacy development strategies (e.g., text adaptation, visual aids, leveled readers, pair reading, jigsaw reading) and oral language development strategies (repetition, rephrasing, summarization) for different ELL proficiency levels.
7 (rev.)	Implements various strategies to differentiate instruction for ELLs' success in language and literacy development.	
13	Encourages critical thinking by acknowledging ELLs' diverse cultural experiences (e.g., arguments from authority may be highly valued and not confronted in some cultures).	
	Group 1	Teacher asks probing questions to ELL to look for evidence to support their arguments or perspectives in text. Teacher designs group critical thinking/competitive activities that involve exploration of other's views and defending one's own view, responding to open-ended questions that do not have one single answer. Teacher designs activities that allow ELLs to assume another's position which they have to defend.
	Group 2	Gives an example of how an example or anecdote can affect students' ability to think critically. Uses physical responses to gauge students' understanding of content. Incorporates more open-ended responses into instruction and assessment.

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
		Uses materials that have relevance to students' cultural experiences to facilitate students' critical thinking. Provides students with experience of having cooperative debates (facilitates debates).
	Group 3	Given a scenario in which students report on cultural experiences related to the content, the teacher explains how to use that information to develop critical thinking (or identifies explanations).
	Consensus	The teacher designs activities (e.g., exploring other's views, presenting one's own view, responding to open-ended questions) that have relevance to students' cultural experiences to facilitate students' critical thinking.
13 (rev.)	Encourages critical thinking by acknowledging ELLs' diverse cultural experiences.	
12	Develops ELLs' higher-order thinking skills through questioning and elicitation techniques.	
	Group 1	Teacher (a) phrases elicitation questions that require ELLs to use higher thinking skills, (b) designs assignments that require ELLs to use higher thinking skills.
	Group 2	Uses picture books in the classroom to help students with limited English proficiency in their development of inferencing skills. Gives students rubrics to use to evaluate their own level of thinking.
	Group 3	Given specific content, the teacher will list a number of questions and a number of elicitation techniques appropriate for developing ELLs higher-order thinking skills.
	Consensus	Teacher asks questions and uses elicitation techniques (e.g., Socratic method; problem-solving projects) that are appropriate to develop ELLs' higher-order thinking skills.
12 (rev.)	Develops ELLs' higher-order thinking skills through questioning and elicitation techniques.	
9	Supplements curriculum and textbook materials with other sources to aid ELL learning in content areas.	
	Group 1	Teacher designs lesson plan that includes the use of a variety of strategies, materials (visuals, music, videos, decorations, graphics, pictures, use of materials in the home language [the majority], real objects,

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
		hands-on activities) to supplement the textbook.
	Group 2	Given a particular content area lesson, teachers select and justify their choice of appropriate supplemental materials.
	Group 3	Given specific content, the teacher can identify or list appropriate supplemental materials (e.g., pictures, realia, native-language texts).
	Consensus	Teacher designs lesson plan that includes the use of a variety of materials (visuals, music, videos, decorations, graphics, pictures, use of materials in the home language when appropriate, real objects, hands-on activities) to supplement the curriculum.
9 (rev.)	Supplements curriculum and textbook materials with other sources to aid ELL learning in content areas.	
14	Helps ELLs to understand discipline-specific concepts within a content area through the use of multimodal strategies like graphic organizers (e.g., word clusters, semantic maps, T-charts).	
	Group 1	Given a content concept, teacher provides examples of graphic organizers (e.g., tables, outlines, time-lines, T-charts, Venn diagrams, sequencing, plot development foldables specific to that content topic.)
	Group 2	Uses multimodal strategies. Matches graphic organizers to their specific purposes. Provides a variety of organizational tools to facilitate student learning. Uses graphic organizers as study guides for students. Has students create hands-on organizers, such as 3-D foldables, to explore and represent discipline-specific concepts.
	Group 3	Given a particular context or content, the teacher chooses, uses, or creates an appropriate graphic organizer or has students choose or create the same.
	Consensus	Teacher uses concept-appropriate multimodal strategies (e.g., graphic organizers: tables, outlines, timelines, T-charts, Venn diagrams, sequencing, plot development foldables specific to that content topic) to help ELLs understand discipline-specific content.
14 (rev.)	Helps ELLs to understand discipline-specific concepts within a content area through the use of multimodal strategies like graphic organizers (e.g., word clusters, semantic maps, T-charts).	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
15	Adapts texts (e.g., paraphrasing unfamiliar expressions, or unpacking complex statements into several simple sentences) to make content-specific concepts accessible to ELLs.	
	Group 1	Teacher identifies roadblocks in the text and adapts a piece of text (e.g., deals with inference statements, unpacks the cultural knowledge or provides background knowledge, breaks the sentences into manageable and meaningful chunks, use of annotations [synonyms, antonyms]).
	Group 2	Rewrites textual passages to make text more accessible for beginning students. Breaking up text into different chunks to help facilitate more advanced students' comprehension. Provides alternative representation for textual material (e.g., charts, diagrams).
	Group 3	Given a text (and particular ELLs), the teacher justifies adaptations of text (simplifying, chunking, highlighting, marginalia, tier-text) that do not diminish the content.
	Consensus	Given the proficiency level of an ELL, the teacher identifies potential roadblocks in the text, adapts it, and/or breaks it up into chunks to advance students' comprehension without diminishing the rigor of the content.
15 (rev.)	Adapts texts (e.g., paraphrasing unfamiliar expressions, or unpacking complex statements into several simple sentences) to make content-specific concepts accessible to ELLs.	
38	Helps ELLs decode meaning from highly abstract and culturally embedded phrases and sentences by encouraging them to infer meaning from context.	
	Group 1	Teacher models the strategy of inferring meaning from abstract text by using the context (Who said the phrase? What happened before, during, after?).
	Group 2	Groups students and has them represent concepts pictorially. Have students revisit the text to provide context or grounding for abstract terms.
	Group 3	Teacher identifies or lists appropriate strategies (modeling decoding, examining alternate meanings, unpacking idioms) to infer meaning from context of highly abstract and culturally embedded phrases.
	Consensus	Teacher models and guides student use of appropriate strategies (e.g., unpacking idioms, revisiting text to provide context for abstract terms, creating pictorial representations) to help ELLs infer meaning from a context of highly abstract and culturally embedded phrases.

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
38 (rev.)	Helps ELLs decode meaning from highly abstract and culturally embedded phrases and sentences by encouraging them to infer meaning from context.	
2	Draws upon ELLs' cultural and educational background to facilitate learners' comprehension and discussion of academic texts.	
	Group 1	Given a specific scenario, teacher asks students to do research on a content topic and discussion with their families/community members provide culturally relevant experiences, examples, artifacts to share with and present to peers (written report, oral presentation).
	Group 2	Designs lessons that incorporate differentiation to address students' differences. Provides multiple opportunities to learn the material.
	Group 3	Teacher aids students to make connections between their experiences and the content.
	Consensus	Teacher elicits cultural and educational experiences from students to help them make connections with the content (e.g., asks students to do research on a content topic and discuss with their families/community members and then provide culturally relevant experiences or artifacts to share with and present to peers; draws upon prior knowledge).
2 (rev.)	Draws upon ELLs' cultural and educational background to facilitate learners' comprehension and discussion of academic texts.	
11	Applies various methods to incorporate different interactional and task engagement styles that ELLs might bring from their cultural backgrounds into classroom work.	
	Group 1	Teacher recognizes different interactional styles and communicates that ELLs' style is acceptable/unacceptable and then helps the ELLs to understand the mainstream pattern of interaction through methods like think-pair-share.
	Group 2	Uses cooperative learning strategies and task engagement styles with students (e.g., group, paired, one-on-one, whole class) in instruction for ELLs.
	Consensus	Teacher recognizes interactional and task engagement styles in the classroom settings and helps ELLs develop various patterns of interaction through methods like *think-pair-share*, presentations.

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
11 (rev.)	Applies various methods to incorporate different interactional and task engagement styles that ELLs might bring from their cultural backgrounds into classroom work.	
34	Paces oral communications and instructions appropriately for ELLs' comprehension (e.g., repeats and reformulates ideas, avoids overuse of/or teaches idioms and slang).	
	Group 1	Teacher responds to a scenario, and explains how she would approach the oral interaction at the students' performance level (e.g., do one step at a time, write the instructions on the board, reformulate an idea, explain an idiom).
	Group 2	Gives students wait time and processing time, enunciates, varies speed or rate of speech, articulates, uses authentic language.
	Consensus	Gives students wait time and processing time, enunciates, varies speed or rate of speech, articulates, uses authentic language.
34 (rev.)	Paces oral communications and instructions appropriately for ELLs' comprehension (e.g., repeats and reformulates ideas, teaches idioms and slang but avoids their overuse).	
39	Transforms textbook content into meaningful chunks for ELLs (highlights key concepts and/or important ideas).	
	Group 1	Teacher uses strategies (jigsaw, content map, outline, highlighting key vocabulary terms) to break down content in the text into meaningful chunks; highlights key vocabulary terms in context and uses the terms in multiple contexts over time.
	Group 2	Change transforms to "divides." Given a textbook passage, teacher previews the key concepts and during processing, helps students divide text into comprehensible segments.
	Consensus	Given a text passage, teacher previews the key concepts and during processing, helps students divide text into comprehensible segments.
39 (rev.)	Divides text content into meaningful chunks for ELLs (highlights key concepts and/or important ideas).	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
4	Provides multiple opportunities for ELLs to process content in group contexts, including with their English-speaking monolingual or proficient bilingual peers (e.g., pair work assignments, mixed-ability groupings, whole-class discussions).	
	Group 1	Given a scenario for ELLs to process content, teacher uses multiple grouping strategies (e.g., elbow partners, corners, clock partners, people by the same height, shoe size) to reorganize student team, pairs, small and whole groups.
	Group 2	Given a specific lesson objective, teacher could provide alternatives for group work to meet the objective (students' language ability and content-area familiarity should be taken into consideration).
	Consensus	Teacher uses multiple grouping strategies (e.g., elbow partners, corners, clock partners, people by the same height, shoe size) to reorganize student team, pairs, small and whole groups.
4 (rev.)	Provides multiple opportunities for ELLs to process content in group contexts, including with their English-speaking monolingual or proficient bilingual peers (e.g., pair-work assignments, mixed-ability groupings, whole-class discussions).	
60	Uses knowledge of English linguistics (semantics, syntax, morphology, and phonology) to facilitate ELLs' textual meaning making.	
	Group 1	Given a text, teacher isolates a critical linguistic feature that will facilitate ELLs' understanding of the content of the text (e.g., prefix, suffix [multicell, unicell, microscope], expands-contract, increase-decrease).
	Group 2	Uses students' ability to analyze language to further their comprehension of the content. Makes connections between sentence structures that may be familiar to students. Teaches students how to analyze words.
	Consensus	Teacher focuses on critical linguistic features that will facilitate ELLs' understanding of the content of the text (e.g., prefix/suffix, antonyms/synonyms, notations, phrasal verbs, nominalization).
60 (rev.)	Uses knowledge of English linguistics (semantics, syntax, morphology, and phonology) to facilitate ELLs' textual meaning making.	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
36	Designs production activities to provide ELLs with the opportunities to express their ideas and perspectives (e.g., choral speaking, teacher restating students' spoken ideas to clarify their reasoning, getting students talking in small groups).	
	Group 1	Teacher designs a lesson plan that includes multiple opportunities for students to produce products that express their ideas whether in visual, spoken, or written format.
	Group 2	Include "oral" in statement. Uses cooperative debates. Uses a wide repertoire of cooperative learning opportunities. Uses chapter previews, graphic organizers used to generate ideas, instructional conversations, and brainstorming sessions.
	Consensus	Teacher includes multiple opportunities for students to create products that express their ideas in visual, spoken, or written format.
36 (rev.)	Designs production activities to provide ELLs with the opportunities to express their ideas and perspectives both orally and in writing.	
5	Provides ELLs with oral and visual support (e.g., think-alouds, word picture cards) to produce language orally and in writing.	
	Group 1	Teacher designs a lesson plan that incorporates oral and visual strategies that ELLs allow to produce language orally and in writing.
	Group 2	Provides visual cues for students so that they may describe concepts orally and in writing. Provides oral and visual prompts to stimulate students' language production.
	Consensus	Provides oral and visual prompts to stimulate students' language production in both oral and written form.
5 (rev.)	Provides ELLs with oral and visual support (e.g., think-alouds, word picture cards) to produce language orally and in writing.	
40	Scaffolds ELLs' ability to rephrase or paraphrase academic language in their own words.	

Number	Original KSA statement, subgroup evidence statements, consensus, and revised KSA statement	
	Group 1	Teacher models the strategies (e.g., pointing out key concepts, finding synonyms, asking basic WH questions that would help them understand and reconstruct the text [paired reading that allows students to paraphrase each other's reading and together summarize a full paragraph or section of text]).
	Group 2	Creates multiple opportunities for oral practice. Uses visual cues to aid student responses oral/written. Incorporates processing activities such as with the Interactive Notebook. Builds ELLs' abilities to rephrase and paraphrase by alternating between academic /everyday language.
	Consensus	Teacher builds ELLs' abilities to understand concepts and reconstruct text through rephrasing and paraphrasing academic language (e.g., alternating between academic and everyday language, finding synonyms, asking basic WH questions).
40 (rev.)	Scaffolds ELLs' ability to rephrase or paraphrase academic language in their own words.	
6	Provides alternative forms of assessments for ELLs to gauge their comprehension and production of text.	
	Group 1	Teacher (a) designs rubrics/checklists/oral presentations that are meant to allow teacher to know at what level of comprehension students are functioning and (b) assesses students' comprehension and production of text using multiple forms of assessment based on the appropriate proficiency level of the ELLs (nonverbal or gestural, graphic, drawing, written, oral presentation).
	Group 2	Uses rubrics and portfolios to capture a variety of student language production. Uses formative assessments to monitor and redirect comprehension. Tailors assessments specifically to content areas. Encourages self- and peer assessments. When students are working in groups, uses informative assessments.
	Consensus	Teacher assesses ELLs' comprehension and production of text using alternative forms of assessment based on the appropriate proficiency level of the ELLs (nonverbal or gestural, graphic, drawing, written, oral presentation).
6 (rev.)	Provides alternative forms of assessments of ELLs to gauge their comprehension and production of text.	

Note. ELLs = English language learners; KSA = knowledge, skills, and attributes; rev. = revised KSA statement.

Appendix E

Panel Review of Content-Specific Knowledge, Skill, and Attribute (KSA) Statements

This chart presents the original content-specific knowledge, skill, and attribute (KSA) statements submitted to the content-area subgroups for their input and the consensus statements arrived at by the subgroups. These charts include suggested revisions to the KSA statements from the panelists. The panel was divided into four homogeneous subgroups. Each subgroup included teachers and teacher educators from the specific content area (i.e., mathematics, science, English language arts [ELA], and social studies). Suggested revisions to the statements that resulted from the panelists' discussions are presented in brackets.

No.	Mathematics	
18	Allows ELLs to demonstrate their understandings of mathematics or science concepts visually and orally or in ways familiar to ELLs.	
	Consensus	Teacher uses various strategies (mathematics content posters, graphical representations, manipulatives, realia, and allowing for student initiative) to help ELLs demonstrate their understanding of mathematics.
17	Sets positive (high) expectations for ELLs as they engage in the register of mathematics or science.	
	Consensus	Teacher uses and models positive reinforcement (e.g., rephrase mathematical terms, verbal and kinesthetic praise) to help ELLs move towards engaging them in the register of mathematics or science.
18	Allows ELLs to demonstrate their understandings of mathematics or science concepts visually and orally or in ways familiar to ELLs.	
	Consensus	Teacher uses various strategies (mathematics content posters, graphical representations, manipulatives, realia, and allowing for student initiative) to help ELLs demonstrate their understanding of mathematics.
19	Incorporates the contributions of non-Western scientists or mathematicians into the curriculum.	

No.	Mathematics	
	Consensus	[Reached consensus to eliminate this KSA.]
20	Provides multiple opportunities for ELLs to participate in the solution of mathematical problems in class (e.g., think-pair-share and think-aloud activities).	
	Consensus	Teacher engages ELLs in using various strategies to explore and participate in solving the mathematical problems through instructional strategies like think-pair-share and think-aloud.
21	Uses objects from real life/manipulatives and technology-based representations (e.g., coupons, fruit, patterned blocks) to support ELLs' comprehension and learning of mathematics concepts.	
	Consensus	Teacher designs lessons that incorporate the real life objects and manipulatives, technology-based representations to support ELLs' mathematical understanding.
22	Helps ELLs to solve mathematical problems and tasks by relating to real-world contexts.	
	Consensus	Teacher uses real-world contexts during instruction to engage ELLs in mathematical understanding (e.g., linear equation, quadratic equation, real statistical data).
43	Develops ELLs' awareness of the linguistic features of mathematical notations to facilitate ELLs' access to mathematics.	
	Consensus	Teacher designs lessons that incorporate various representations of mathematical notations (e.g., written and oral and symbolic, pictorial) to engage ELLs in using mathematical concepts.
44	Transitions from everyday oral language to more technical language or register of mathematics.	
	Consensus	Teacher designs lessons that provide opportunities for ELLs to use academic mathematical language with or without teacher's guidance (repeating the word, rephrasing sentences, modeling the sentence, paraphrasing the everyday language expression of the mathematics concept).

No.	Mathematics	
45	Represents mathematics-specific vocabulary (e.g., divisor, denominator, integer) in multiple comprehensible ways.	
	Consensus	Teacher uses multiple representations (pictorial, graphical, manipulatives [e.g., algebra tile, patterned blocks], flash cards, calculator) to make mathematics-specific vocabulary comprehensible.
46	Facilitates ELLs' defending, discussing, and presenting their thinking and solutions around mathematics problems.	
	Consensus	Teacher uses tasks that require ELLs to come up with statements or conjectures in defending, discussing, and presenting the mathematical problem.
47	Facilitates ELLs' writing about their reasoning of problems or concepts in mathematics.	
	Consensus	Teacher uses tasks that require ELLs to use mathematical reasoning and to produce a piece of writing (e.g., flow chart, short description in a paragraph, mathematical proof) about their reasoning of mathematical concepts or problems.
48	Helps ELLs develop metalinguistic strategies to decipher meaning from complex phrases and sentences in mathematics word problems.	
	Consensus	Teacher models and uses various strategies (e.g., think-aloud, highlight/underline relevant information in relation to the problem posed, raising prompting questions about the problem) to help students chunk the complex phrases/sentences in mathematics word problems.
68	Engages ELLs in using and reflecting on the discourse of mathematics.	
	Consensus	Teacher models and uses instructional strategies (e.g., elicitation of deductive or inductive reasoning, using definitions, probing questions, providing justifications) to engage ELLs in using and reflecting on the discourse of mathematics.

Note. No. = Number of original KSA statement; ELLs = English language learners; KSA = knowledge, skills, and attributes; rev. = revised KSA statement.

No.		Science
23	Helps ELLs gather materials, follow procedures, observe and record results, draw a conclusion sharing their results orally and/or in writing with peers in a science classroom.	
	Consensus	The teacher models and engages ELLs in inquiry-based science activities orally and/or in writing in a collaborative setting.
24	Develops ELLs' linguistic and academic abilities to engage in the practice of science.	
24a	Develops ELLs' linguistic and academic abilities to understand key concepts and big ideas.	
	Consensus	Teacher capitalizes on ELLs resources to help the students address challenges in understanding key concepts and big ideas. (e.g., breaking down key concepts, facilitates ELLs' ability to express orally and/or through writing their application of science concepts to explain natural phenomena and to explain relationships between and among concepts).
24b	Develops ELLs' linguistic and academic abilities to engage in inquiry-based science.	
	Consensus	The teacher models and engages ELLs in inquiry-based science activities orally and/or in writing in a collaborative setting to develop ELLs' linguistic and academic knowledge and abilities.
24c	Develops ELLs' linguistic and academic abilities to give evidence and reasoning to justify arguments.	
	Consensus	Teacher models and guides ELLs in giving evidence and reasoning to justify arguments in oral, graphic, and/or written forms.
24d	Develops ELLs' linguistic and academic abilities to foster scientific habits of mind.	
	Consensus	The teacher provides ELLs with a safe environment where questioning and argumentation are modeled, promoted, and valued.

No.	Science
25	Helps ELLs make a plan of action to address a scientific problem by having them formulate questions (e.g., What is my hypothesis? What materials will I need? What procedures or steps will I take to collect information? How will I observe and record results?)
	Consensus [The panelists did not have sufficient time to work on this statement.]
49	Develops ELLs' awareness of the language of science to make the content accessible to ELLs.
	Consensus The teacher helps ELLs access science content by modeling and guiding ELLs through the interaction of language structures, function, and meaning (e.g., breaking down sentence, chunking, see general statements).
50	Uses various methods or techniques (e.g., word and sentence walls, word picture cards) to make subject-specific vocabulary in science (e.g., omnivore, vertebrae, mineral) accessible to ELLs. Teaches subject-specific vocabulary in the context of science texts (e.g., omnivore, vertebrae, mineral) to ELLs using various methods or techniques.
	Consensus See methods and techniques under General Vocabulary statements.
51	Involves ELLs in active oral discussions of concepts in science through the use of authentic visuals and tools.
	Consensus Teacher uses multiple forms of representation and communication to engage ELLs in oral discussions of science concepts.
52	Builds connections between the language of the science classroom and ELLs' experiences in their everyday lives.
	Consensus Elicits students' everyday experiences as prior knowledge to build connections to the science content.
53	Integrates reading and writing activities to assist ELLs in learning science content.
	Consensus Teacher understands the academic demands of reading and writing science and draws on this understanding to help ELLs access science content through appropriate reading and writing activities (e.g., level texts, explicate how to read a science book/poster--reading the diagram, marginalia; multiple forms of representation).
54	Designs activities in which ELLs paraphrase their understandings of the scientific text or task from their own perspectives.

No.	Science
	[Subsumed in 52.]
	Consensus [Panelists did not have sufficient time to work on this statement.]
55	Facilitates ELLs' reasoning of language functions like contradictions, cause and effects, and chronological or logical sequence in science by explicitly teaching signposts like prepositions and conjunctions (e.g., and, but, because). Facilitates ELLs' understanding (and application) of how language functions to express scientific ideas (e.g., using structures to express particular logical relationships).
	Consensus The teacher breaks down text to model and guide students through how language functions to express scientific ideas (e.g., descriptive language, logical sequences, logical relationships, explanations).
68	Explains to ELLs typical scientific genres (e.g., procedure, procedural recount, science report, and science explanations) to develop ELLs reading and writing skills in science.
	Consensus Teacher engages students in critical discussions about and scaffolds their writing of scientific genres.

Note. No. = Number of original KSA statement; ELLs = English language learners; KSA = knowledge, skills, and attributes; rev. = revised KSA statement.

No.	English Language Arts	
26	Engages ELLs in critical discussions of multiple forms of texts (e.g., literary and nonliterary texts, print and electronic).	
	Consensus	Teacher manages large and small class discussions involving various forms of text that achieve student participation at a critical and analytical level.
27	Applies various scaffolding strategies (e.g., peer-to-peer prewriting discussions, dictation and translation, dialog journals) for teaching writing to ELLs.	
	Consensus	Teacher generates a set of strategies for writing, defines them, identifies function, and describes appropriate to the level of ELL language proficiency.
28	Uses context-based visuals to help ELLs make sense of the textbook's and teacher's language (e.g., magazine and Internet articles on fast food).	
	Consensus	Teacher lists types of visual input (photographs, maps, charts, pictures) and describes possible uses to illustrate teacher and textual language.
29	Integrates the content area topics within mathematics, science, and social studies into the reading and writing activities in ELA classroom.	
	Consensus	When dealing with text processing and academic writing, teacher uses examples drawn from content areas (mathematics science social studies text). Teacher incorporates content topics with ELA thematic units.
56	Identifies general academic vocabulary often used in language arts texts (e.g., notice, think, analyze).	
	Consensus	The teacher distinguishes general academic vocabulary from ELA-specific academic vocabulary (e.g., "plot," "characterization," "personification") vs. "notice," "think," "analyze."
57	Helps ELLs monitor their comprehension of academic texts in ELA.	
	Consensus	Check for understanding to paraphrase, summarize, sequential restatement—students explain why they agree or disagree; small groups; students formulate own questions; identify main ideas; ask range of higher order questions.

No.	English Language Arts	
58	Chooses texts that are appropriate to facilitate ELLs' success in reading (e.g., texts with phonetically regular and high-frequency words and words of high interest to students' personal lives).	
	Consensus	Teacher provides ELLs versions of text with which they can achieve comprehension of core concepts.
59	Facilitates ELLs' access to linguistically demanding sentences found in language arts texts (e.g., the frequent use of relative clauses, adverbial clauses or phrases, or appositive phrases).	
	Consensus	Teacher identifies linguistically demanding sentences, explains sources of complexity (semantics, vocabulary, syntactic, lexical), and provides examples.
60	Uses knowledge of English linguistics (semantics, syntax, morphology, and phonology) to facilitate ELLs' textual meaning making.	
	Consensus	Uses knowledge of English linguistics at the sentence level to facilitate ELLs' textual meaning-making.
61	Provides ELLs with direct vocabulary instruction (e.g., derivations, homophones, collocations).	
	Consensus	Teacher previews and reviews vocabulary found in texts using techniques such as explicit analysis, semantic webs and lexical organizers, repetition, collocation, and morphological analysis, oral and written practice at levels ranging from easy to difficult in both receptive and productive modes. Teacher identifies target vocabulary integral to the meaning of the core content by providing explicit instruction.
62	Explains connotative and denotative meanings of words, including idioms and figurative language, to ELLs.	
	Consensus	Given a text, teacher can identify instances of figurative language (e.g., idioms, metaphors) and provide denotative synonyms and connotative or associative nuances of meaning.

No.	English Language Arts	
68	Explicitly explains to ELLs genres (e.g., journal, fact, expository, narrative) that are applicable to ELA.	
	Consensus	Teacher directs ELLs' attention to different linguistic and stylistic aspects of multiple genres in ELA (e.g., journal, narrative, exposition) and provides them opportunities to use the style required by the genre in ELA.

Note. No. = Number of original KSA statement; ELA = English language arts; ELLs = English language learners; KSA = knowledge, skills, and attributes; rev. = revised KSA statement.

No.	Social Studies	
30	Incorporates academic language into classroom discussions of civics and government in the United States and similar topics in social studies.	
	Consensus	Looks for opportunities to connect U.S. civics and government topics to unit study. Connects students' experiences to the concepts and terminology addressed in civics and government.
31	Incorporates ELLs' diverse cultural understandings of texts and interactions into discussions of social studies topics (e.g., cultural differences between the civic life in the United States and the ELLs' home culture).	
	Consensus	Teacher should have knowledge of and respect for various cultures represented in the classroom. Uses multiple/various activities in the classroom to incorporate students' backgrounds into the classroom. Elicits and utilizes students' cultural knowledge as springboards for discussion.
63	Develops ELLs' awareness of the language of social studies to make the content accessible to ELLs.	
	Consensus	Explicitly identifies lexical features of the text that make content comprehensible (e.g., transition words, passive voice, capitalization).
64	Represents academic vocabulary in the social studies (e.g., continent, landforms, goods) in ways accessible to ELLs.	
	Consensus	Targets vocabulary through the use of supplemental materials and activities such as realia, picture cards, video clips, and simulations.
65	Helps ELLs gain access to highly abstract words in social studies by identifying complex word phrases (e.g., use of embedded clauses and prepositional phrases to condense the presentation of an idea) and extensive nominalization (e.g., expansion, contribution).	

No.		Social Studies
	Consensus	Guides students through strategies such as word analysis, dissecting, and chunking.
		Uses examples, visual representations, and analogies to students' own life experiences to make concepts more concrete.
66	Recognizes that ELLs' understanding of the use of specific tenses (e.g., past tense) in social studies may vary.	
	Consensus	Previews texts to determine potentially challenging or unfamiliar verb structures.
		Recognizes the grammatical complexity beyond the vocabulary used in social studies.
		Explicitly talks about tenses, voice, and time markers with students.
67	Integrates reading and writing activities for ELLs to develop an understanding of social studies–related concepts.	
	Consensus	Gives students level-appropriate tasks.
		Provides students with a variety of materials at different reading levels on the topic being studied.
		Uses strategies such as response journals, document-based questions, and graphic organizers to aid students in their social studies writing and reading tasks.
		Remove "to learn"; add "to develop an understanding of."
68	Explicitly explains to ELLs genres (e.g., journal, fact, expository, narrative) that are applicable to the social sciences.	
	Consensus	Remove "fact"; it's not a genre.
		Teaches genres as they apply to social studies such as recount, account, explanations, and arguments.
		Helps students identify perspective in what they read (i.e., sourcing).

Note. No. = Number of original KSA statement; ELLs = English language learners; KSA = knowledge, skills, and attributes; rev. = revised KSA statement.

No.	Mathematics	
18	Allows ELLs to demonstrate their understandings of mathematics or science concepts visually and orally or in ways familiar to ELLs.	
	Consensus	Teacher uses various strategies (mathematics content posters, graphical representations, manipulatives, realia and allowing for student initiative) to help ELLs demonstrate their understanding of mathematics.
17	Sets positive (high) expectations for ELLs as they engage in the register of mathematics or science.	
	Consensus	Teacher uses and models positive reinforcement (e.g., rephrase mathematical terms, verbal and kinesthetic praise) to help ELLs move towards engaging them in the register of mathematics or science.
19	Incorporates the contributions of non-Western scientists or mathematicians into the curriculum.	
	Consensus	[Reached consensus to eliminate this KSA.]
20	Provides multiple opportunities for ELLs to participate in the solution of mathematical problems in class (e.g., think-pair-share and think-aloud activities).	
	Consensus	Teacher engages ELLs in using various strategies to explore and participate in solving the mathematical problems through instructional strategies like think-pair-share and think-aloud.
21	Uses objects from real life/manipulatives and technology-based representations (e.g., coupons, fruit, patterned blocks) to support ELLs' comprehension and learning of mathematics concepts.	
	Consensus	Teacher designs lessons that incorporate the real-life objects and manipulatives, technology-based representations to support ELLs' mathematical understanding.

No.		Mathematics
22	Helps ELLs to solve mathematical problems and tasks by relating to real-world contexts.	
	Consensus	Teacher uses real-world contexts during instruction to engage ELLs in mathematical understanding (e.g., linear equation, quadratic equation, real statistical data).
43	Develops ELLs' awareness of the linguistic features of mathematical notations to facilitate ELLs' access to mathematics	
	Consensus	Teacher designs lessons that incorporate various representations of mathematical notations (e.g., written and oral and symbolic, pictorial) to engage ELLs in using mathematical concepts.
44	Transitions from everyday oral language to more technical language or register of mathematics.	
	Consensus	Teacher designs lessons that provide opportunities for ELLs to use academic mathematical language with or without teacher's guidance (repeating the word, rephrasing sentences, modeling the sentence, paraphrasing the everyday language expression of the mathematics concept).
45	Represents mathematics specific vocabulary (e.g., divisor, denominator, integer) in multiple comprehensible ways.	
	Consensus	Teacher uses multiple representations (pictorial, graphical, manipulatives (e.g., algebra tile, patterned blocks, flash cards, calculator) to make mathematics-specific vocabulary comprehensible.
46	Facilitates ELLs' defending, discussing, and presenting their thinking and solutions around mathematics problems.	
	Consensus	Teacher uses tasks that require ELLs to come up with statements or conjectures in defending, discussing, and presenting the mathematical problem.
47	Facilitates ELLs' writing about their reasoning of problems or concepts in mathematics.	
	Consensus	Teacher uses tasks that require ELLs to use mathematical reasoning and to produce a piece of writing (e.g., flow chart, short description in a paragraph, mathematical proof) about their reasoning of mathematical concepts or problems.

No.		Mathematics
48	Helps ELLs develop metalinguistic strategies to decipher meaning from complex phrases and sentences in mathematics word problems.	
	Consensus	Teacher models and uses various strategies (e.g., think-aloud, highlight/underline relevant information in relation to the problem posed, raising prompting questions about the problem) to help students chunk the complex phrases/sentences in mathematics word problems.
68	Engages ELLs in using and reflecting on the discourse of mathematics.	
	Consensus	Teacher models and uses instructional strategies (e.g., elicitation of deductive or inductive reasoning, using definitions, probing questions, providing justifications) to engage ELLs in using and reflecting on the discourse of mathematics.

Note. No. = Number of original KSA statement; ELLs = English language learners; KSA = knowledge, skills, and attributes; rev. = revised KSA statement.