Enhancing the Subject Literacy Competencies and Pedagogic Practices of English-medium Subject Teachers

Summary

In the previous issue of the Digest, we focussed on 'Developing the Qualities of a Good English Language Teacher'. Moving on from that topic, this issue addresses the competencies and pedagogic practices that English-medium subject teachers need in order to be able to equip their students with specific literacy skills in their school subjects. Using Shulman's (1987, p. 7) position that 'teaching necessarily begins with a teacher's understanding of what is to be learned and how it is to be taught', we can understand subject literacy competencies as the content knowledge, or the 'what' of the abilities and knowledge teachers need to enable their learners to gain subject specific literacy, which will be detailed first. Following this, the discussion will turn to the 'how' in how subject teachers can deliver the subject literacy skills within their subjects to students effectively through subject literacy pedagogic practices. The issue also highlights challenges faced by teachers when infusing these subject literacy competencies and pedagogic practices into their subject teaching.

Subject Literacy

Literacy can be understood as not simply reading and writing, but as also encompassing 'reading for learning, the capacity and motivation to identify, understand, interpret, create and communicate knowledge, using written materials associated with varying situations in continuously changing contexts' (Schleicher, 2012, pp. 21-22). Situated within literacy lies subject literacy (SL), a term which has many other names such as academic literacy (Gibbons, 2009), subject-specific literacy (Green, 1988) or disciplinary literacy (Shanahan & Shanahan, 2008), as well as other terms such as subject area literacy, subject-matter literacy and content area literacy (Moje, 2008). (See ELIS Research Digest, volume 1, for a review of literature on disciplinary literacy – English Language Institute of Singapore, 2016.)

McConachie (2010) defined disciplinary literacy as involving 'the use of reading, reasoning, investigating, speaking, and writing required to learn and form complex content knowledge appropriate to a particular discipline' (pp. 15-16). In the school context, SL can be defined as communicating in specific ways through spoken and written language and other forms of school subject content

knowledge. With SL defined, a short overview illustrating the differences of literacies across school subjects will be given in the following section, showing how literacies can be identified across the subjects.

Identifying literacy differences across subjects

Having defined SL as embedded in the specific disciplines of school subjects, a closer look at how these differences can be identified in different subjects based on the types of text used in class will be addressed.

Coffin (2006a) used the notion of genre as a way to uncover text differences and to identify the different types of text used across school subjects. Genres can be understood as 'the distinctive forms of writing, as staged, purposeful cultural activities structured in various […] ways' (Green, 1988, p. 171). In the Singapore context, the Ministry of Education's 2010 English Language Syllabus defines 'genre' as 'distinctive and recognisable patterns and norms of text organisation and structure', with 'texts of different genres' presenting 'different ways of communicating ideas and information so as to address a variety of purposes, the needs of different audiences and contexts' (Ministry of Education, 2008a, p. 127). These two definitions of

'genre' therefore act as a broader framing of the different types of communication and activities which take place around the variety of text types used in classrooms. Coffin (2006a, p. 7) presented three distinctions teachers can draw on to identify the types of text and language students need to be apprenticed in so they can fulfil the SL literacy skills of constructing and communicating knowledge appropriately within their specific subject:

1. *The social purposes or functions of texts within a subject area.* For example, describing and explaining natural phenomena is a purpose in Science or debating interpretations of the past is a purpose in History.
2. *The distinctive structures which allow a writer to achieve their purpose.* For example, writing a Science exposition involves presenting a thesis to introduce the issue and the writer's point of view, followed by a series of arguments which support the thesis, then a stronger restatement of the thesis introduced earlier.
3. *The distinctive grammatical features.* For example, in a Geography exposition, there are causal (*due to, because of*) and additive connectives (*in addition*).

These three distinctions highlight that SL is informed by the social purposes of the texts within the subject they are situated in, which shapes the content at the language level. Coffin (2006a) connected the specific ways language functions in different school subjects and how the language is associated with the different cultural purposes and practices of their related disciplines. The author highlighted functional approaches to mapping subject specific literacies on descriptions of English (Christie, 2002; Rothery, 1994, 1996; Rothery & Stenglin, 1997), History (Coffin, 1997, 2006b), Mathematics (O'Halloran, 2004) and Science (Veel, 1997; Martin & Veel, 1998; Schleppegrell, 2002).

Coffin (2006a, p. 1) highlighted the link between literacy activities undertaken within professional disciplines and literacy activities carried out by students in school subjects with the following example:

> *an important goal for professional scientists is to perform observations and conduct experiments and as a result, reading and writing procedures (texts which set out a sequence of actions that need to be carried out in order to achieve a goal) and procedural recounts (texts which record a sequence of actions conducted by the writer) are important literacy activities in school science.*

Although Coffin (2006a) emphasised that the professional knowledge, texts and literacy practices are 're-contextualised for school use' (p. 1), the notion that SL involves a range of cultural purposes and practices remains a central aspect.

With this understanding of the SL demands on how learners construct and communicate knowledge appropriately in school subjects through different genres, a closer look at the differences within genres across school subjects will be covered next.

Similarities and differences across subjects

School subjects which appear to have similar genres of texts, feature different subject content language. However, types of text under the same genre may also have different requirements in different subjects even beyond the differences in subject content language. Coffin (2006a) illustrated the issue by contrasting the demands of writing a narrative genre in English Language and History. In English Language, the author stated the text will likely involve characters facing and dealing with a problem whereas, in History, narratives will involve writing about past events and judging their importance.

Coffin (2006a) also indicated that different subjects accord different statuses to specific genres of text, and that the importance placed on different text genres in student assessment varies across subjects. The author illustrated this issue by pointing out that the procedure genre has a high status in Science, as it forms the basis of the scientific method, which is used extensively in carrying out and writing up experiments. On the other hand, the author stated that procedures may also be used in English Language as part of facilitating a lesson, but have a lower status than other genres used in English Language such as narratives and personal response genres. (For a further breakdown and details of specific subject genres, see Martin and Rose, 2008.)

This section has highlighted the complexities involved when using the same terminology to dis-

cuss text genres across the different school subjects, and the need to be aware of the differences in SL demands and the communicative requirements of texts for students and teachers. The following section will look at the competencies subject teachers need for quality teaching within this area.

Teacher competencies needed for subject literacy

Despite the wide range of examples of teacher competencies detailed in various sources, definitions of the term competencies are not so common. More common are examples of competencies detailed in teacher competency frameworks. Weinert (2001), cited in Rauch and Steiner (2013, p. 15), offered a broad definition of competencies as '[The] cognitive abilities and skills which individuals have or can acquire to solve given problems, as well as the related motivational, volitional and social willingness and skills to apply such [sic] solution in variable context successfully and responsibly'.

Teacher SL competencies are the skills and capabilities teachers need to help their students to use academic language appropriately, meaningfully and precisely in a given subject area.

In terms of teacher competencies from a context more aligned to this current issue, the British Association of Lecturers in English for Academic Purposes, in presenting their competency framework for the professional development of teachers, defines competency as 'the technical skills and professional capabilities that a teacher needs to bring to a position in order to fulfil its functions completely' (Aitken, 1998, cited in Alexander et al., 2008, p. 2). In the context of this issue of the ELIS Research Digest, teacher SL competencies are the skills and capabilities teachers need to help their students to use academic language appropriately, meaningfully and precisely in a given subject area.

The following section will detail SL competencies required by teachers, starting with general literacy competencies for all subjects. The aim of the section is to bring to the reader's attention the variety of ways literacy competencies are defined and included in teacher education programmes at the national level.

Coffin (2006a) stated that, when students are learning the content of school subjects, they are often also simultaneously learning the language of educational knowledge as part of enculturation into school. This highlights the language demands students face when communicating with different texts when learning across the range of school subjects. With this in mind, subject literacy competencies for teachers therefore need to be understood within the broader academic literacy of schooling. To address the competencies required of English-medium subject teachers, firstly general competencies which apply to all subjects will be detailed. Competencies required in specific subjects will be addressed subsequently.

There are many examples of teacher competencies covering literacy within pre-service and in-service teacher professional development frameworks. In the U.K., the Department for Education (2011) stated in the 'demonstrate good subject and curriculum knowledge' section of their document on teacher standards that teachers need to promote 'high standards of literacy, articulacy and the correct use of standard English, whatever the teacher's specialist subject' (Department for Education, 2011, p. 1).

In Australia, literacy is detailed in the 'Australian Professional Standards for Teachers' document (Australian Institute for Teaching and School Leadership, 2011, pp. 4, 11) under the 'Professional Knowledge' section with the expectation that teachers develop students' literacy within their subject areas.

In the U.S. the National Center for Literacy Education, located within the National Council of Teachers of English (NCTE) (2017) website, stated that it provides support and evidence to show how teachers in cross-disciplinary teams 'support literacy learners in every classroom'.

The examples above from different contexts illustrate the variety of interpretations and expectations of SL teacher competencies featuring at the national level in various countries. However, the

description of what these teacher literacy competencies look like are from a broad perspective with little detail.

In the Singapore context, the Graduand Teacher Competency (GTC) framework (National Institute of Education, 2009) articulates a set of professional standards for all graduate teachers in Singapore at the National Institute of Education. As the GTC is aligned with the professional standards of the Singapore Ministry of Education, a common language was established for graduands to develop in the classroom (Tan, Liu, & Low, 2012). Although there is no explicit mention of 'literacy' within the GTC, it could be positioned within 'subject mastery' of the 'cultivating knowledge' Core Competencies (National Institute of Education, 2009, p. 53).

An examination across the different Singapore school syllabuses lays bare the subject-specific literacy skills students are expected to attain. For example, there is explicit reference to specific communication skills in Geography (lower secondary) with students needing to learn to search for geographical data and develop 'communication, collaboration and information skills' (Ministry of Education, 2014a, p. 4); in Social Studies, 'communication, collaboration and information skills such as assessing information effectively and understanding new perspectives' (Ministry of Education, 2016a, p. 6) are listed; in History, 'complex communication in the study of History' is detailed in the History syllabus including 'making effective oral and written arguments' (Ministry of Education, 2016b, p. 5); in Mathematics, 'communication, collaboration and information skills such as assessing information effectively and understanding new perspectives' are mentioned (Ministry of Education, 2012a, p. 8); in Science, 'the skill of transmitting and receiving information presented in various forms – verbal, tabular, graphical or pictorial' is noted (Ministry of Education, 2012b, p. 4) and, in Art, 'communicate through the various art forms and media as well as orally and in written text' is detailed (Ministry of Education, 2008b, p. 4). The foregrounding of communication in the definition of SL on page 33 above is also aligned with the Ministry of Education in Singapore's *Standards and Benchmarks for Emerging 21st Century Competencies*, which defines communicating effectively as 'the delivery of information and ideas coherently,

in multimodal ways, for specific purposes, audiences, and contexts' (Ministry of Education, 2011, p. 9).

Having discussed the 'what' of SL teacher competencies, attention will now focus on the 'how' of how subject teachers can develop the SL skills within their subjects for their students.

Teacher pedagogic practices in subject literacy

Bernstein (2000) offered a broad definition of pedagogy as 'a sustained process whereby somebody(s) acquires new forms or develops existing forms of conduct, knowledge, practice and criteria from somebody(s) deemed to be an appropriate provider and evaluator – appropriate either from the point of view of the acquirer or by some other body(s) or both' (p. 78).

Writing from the disciplinary literacy position, Roberts (2013) stated that pedagogy refers to 'the classroom activities that teachers craft for students to engage with to develop disciplinary understandings' (p. 17). Within the classroom context, Bonney and Sternberg (2011) claimed that teachers need pedagogical content knowledge to understand their learners' subject specific background knowledge, and the preconceptions, misconceptions and potential challenges they may have related to both the content and skills.

Foregrounding the importance of context, Shulman (1987) highlighted many critical features of teaching that are generally ignored in identifying effective teaching: the classroom context; the physical and psychological characteristics of the students; and the accomplishments of students. The author also cautioned that 'research-based' definitions of good teaching become abstracted from their 'simplified and incomplete' status to being accepted as context free standards by policy makers and simplified into desirable competencies for benchmarking classroom teachers. From Shulman's (1987) position, the pedagogic practices detailed in this section need to be understood as being shaped by the richness of the classroom context in which they are applied, which may substantially influence what the following pedagogic practices look like when they are translated into the classroom by teachers.

With these definitions of pedagogy and the context-dependent nature of pedagogy in mind, the following section will detail some general literacy pedagogic practices which cover SL pedagogic practices.

General pedagogic practices which cover subject literacy

Considering the definitions of pedagogic practices above, literacy pedagogic practices could be understood as being embedded within many existing teaching and learning documents, however implicitly they are stated. Gibbons (2009) argued that it was

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not possible to separate learning subject content from the language the content is embedded in. From this position, every teacher is a language teacher (Schleppegrell, 2012) and therefore SL pedagogic practices may not be a distinct pedagogy in its own right, but they may be part of the more general literacy pedagogy employed by teachers when teaching their students to communicate meanings around the subject content. With this in mind, pedagogic practices addressing SL will be discussed with regard to the extent to which these practices can be considered to be embedded in a broader literacy pedagogy.

Shulman (1987, p. 15) detailed the following activities as part of pedagogical reasoning when teachers transform ideas from personal comprehension to preparing material for the comprehension of others:

1. **Preparation**: critical interpretation and analysis of texts;
2. **Representation**: use of a representational repertoire which includes analogies, metaphors, examples, demonstrations, explanations, and so forth;
3. **Selection**: choice from among an instructional repertoire which includes modes of teaching, organizing, managing, and arranging; and
4. **Adaptation and Tailoring to Student Characteristics**: consideration of conceptions, preconceptions, misconceptions, difficulties, language, culture, and ability.

Considering the text differences across school subjects outlined by Coffin (2006a), the pedagogical reasoning activities from Shulman (1987) could frame how teachers guide learners in a critical analysis of the classroom text from a particular subject as part of SL pedagogic practice.

From an English as an Additional Language context, Coffin (2006a) offered a genre-based, language-orientated approach to literacy pedagogy which addresses different subject literacy demands in the form of activities for learning where literacy is the main focus of the lesson. The author presented a breakdown of activities guided by a three-stage teaching and learning model based on Martin (1999). (The teaching and learning model also exists in other versions, such as in the work of Burns and Joyce, 1991, cited in Hammond, Burns, Joyce, Brosnan, & Gerot, 1992.) The literacy pedagogy approach with example activities are as follows:

1. **The deconstruction stage**
    The teacher introduces the topic and extends the students' understanding of it through a detailed analysis of the text(s). The focus is on helping students identify, read and understand the type of text, text structure and language features. Some activities to use for this stage include:

    -   Cutting the text into its stages and asking students to order and name each stage;
    -   Erasing language features and asking students to work out the missing words; and
    -   Removing a stage and asking students to predict or write an alternative.

2. **The joint construction stage**
    The teacher acts as a guide to inform and negotiate meanings as a genre specific text is constructed by both teacher and students. In order to construct the text, other content knowledge may be required, which can be addressed through reading and research activities. To support students:

    -   The assignment task and ground rules are visible.
    -   Scaffolding is provided to support writing the whole text such as providing the text structure in the form of section headings.
    -   The teacher can refine student texts by

providing input by offering technical vocabulary and rewordings, and reworking the structure of sentences.

3. **The independent construction stage**
   Students apply the knowledge of genre, structure and target language from the joint construction stage to create a similar text with a slightly different topic as individuals or small groups. Teachers carry out this stage when they feel their students are confident of achieving this. Activities include:

   • Students writing a draft for teacher or peer feedback;
   • Students rewriting the text based on advice; and
   • Teachers giving students a checklist to assess and revise their own work.

Similar to the pedagogical activities of Shulman (1987) detailed on page 37 above, the three stages detailed by Coffin (2006a) would need to be situated within the subject teacher's SL competencies, including things such as a proper consideration of the appropriate cultural and communicative practices of their subject. Cautioning against understanding pedagogy merely as activities, Roberts (2013) stated that disciplinary literacy as a pedagogy is often presented without an overarching theory, and as a result, the pedagogic practices become reduced to a set of strategies to implement rather than ways of approaching a discipline.

The majority of the cohort demonstrated a similar awareness of how spoken and written language mediate forms of disciplinary reasoning and how language strategies can support students in avoiding high incidences of disengagement with schooling.

Having detailed some general pedagogic practices which cover subject-specific literacy, pedagogic practices explicitly detailing SL will be addressed in the following section.

Subject literacy pedagogic practices

A review of the international literature in the field of subject literacy revealed that SL and other terms covering the same meaning are not commonly foregrounded explicitly within many school subject pedagogic practices. As has been detailed earlier in this issue, SL pedagogic practices may be embedded within broader teacher pedagogic practices without explicit reference to SL. In seeking to bring SL pedagogic practices to the foreground, Love (2010, p. 342) extended Shulman's (1987) term pedagogical content knowledge with the term literacy pedagogical content knowledge (LPCK). The author presented three components to describe it:

1. Knowledge about how spoken and written language is structured for learning;
2. Recognition that subject areas have their own characteristic language forms and hence entail distinctive literacy practices; and
3. A capacity to design learning and teaching strategies which account for subject-specific literacies and language practices.

With a focus on secondary teachers, Love (2010) presented a teacher training package to address LPCK for pre-service teachers, entitled *Literacy across the School Subjects*, or LASS (Love, Baker, & Quinn, 2008), which was taught as part of a *Master of Teaching* programme to teachers spanning the Humanities, Visual and Performing Arts, Mathematics and the Sciences, Physical Education, Business Studies and Information Technology. The course covered units on spoken and written language, support for reading and writing, multi-genre texts and planning for literacy. Love (2010) evaluated the impact of the LASS 18-hour course, reporting that across the cohort of 300 Australian teachers undertaking the programme, the majority of the cohort demonstrated a similar heightened level of awareness of how spoken and written language mediate forms of disciplinary reasoning and how language strategies can support students in avoiding high incidences of disengagement with schooling. Love's (2010) study highlighted that SL pedagogic practices were being taught at university level, which equipped teachers with specific SL pedagogic practices to support their fellow school teachers across a variety of subjects.

There is also a wide variety of resources addressing possible literacy pedagogic practices for school subjects with individual book chapters dedicated to specific subjects such as Fang and Schleppegrell

(2008) and Draper (2010) as well as resources providing instructional literacy strategies which can be applied across different school subjects such as Roe, Stoodt-Hill and Burns (2004) and Fisher and Frey (2008). The following section will detail an SL programme that has been trialled and implemented in a variety of school contexts.

The Reading to Learn pedagogy

Reading to Learn (R2L) is presented as an international literacy programme which aims to 'enable all learners at all levels of education to read and write successfully, at levels appropriate to their age, grade and area of study' (Rose, 2017). R2L has been implemented globally in schools, such as in Australia, South Africa and Sweden (Rose & Martin, 2012, p. 138) across a wide range of subjects including English Language, Mathematics, Science and History.

The R2L approach also foregrounds the role of reading as 'a central skill for learning in school' (Rose, 2015, p. 1). Key elements of the R2L pedagogy (Rose, 2015, p. 1) include teacher-designed class interactions that enable all learners to:

1. Engage in school texts that may be well beyond their independent reading capacities;
2. Interrogate passages of text with detailed comprehension;
3. Recognise the language choices that authors have made;
4. Appropriate these language resources into their own writing; and
5. Construct texts with effective organisation and language choices to achieve their purposes.

The R2L pedagogy takes the position that in order to engage all students confidently in 'authentic' curriculum texts at the same level as the high progress learners, teachers need a better set of teaching strategies, which the authors claimed is in the R2L pedagogy, to engage learners in appropriate ways instead of teachers using a 'dumbed down set of texts' (Rose & Martin, 2012, p. 132).

The R2L pedagogy addresses different subject needs by offering variations in strategies depending on the developmental stage of students, the text genre and the field being explored. Examples of the genres of text addressed in the R2L pedagogy include children's fiction, adult literature,

technical texts in the Sciences, abstract texts in the Humanities, arguments and text responses (Rose & Martin, 2012). R2L is defined as a professional learning programme, providing teachers with knowledge about pedagogy and language to use in their classrooms from a genre perspective (Rose, 2015). Teachers undertaking the programme are required to understand text genres, how to translate strategies from the example R2L materials into the teachers' context and to gain a knowledge about language.

As a word of caution regarding a reliance on SL strategies, O'Brien, Stewart, and Moje, (1995) claimed that, as far back as 1995, there were proposals that content literacy research and teaching needed to move beyond strategies alone, towards teaching pre- and in-service teachers to take a more deliberate approach to situate content literacies within the contexts of teaching and learning.

Technology and subject specific literacies

An aspect not yet covered in this issue is the role of technology, which needs to be addressed as the texts used by students (and society) are shifting more and more towards digital forms. Pachler and Redondo (2012) highlighted the implications that digital technologies have for literacy practices and the processes of teaching and learning as well as the impact on teacher professional learning. The authors stated that teachers need to be equipped with an understanding of the role of technology in education not just for their students but also for themselves. The following section will detail an SL pedagogy which was inspired by the need to address the technology-driven shifts in new text forms.

The Learning by Design pedagogy

An approach which addresses the technology-driven shift in texts from 'written-linguistic' modes of meaning to include 'oral, visual, audio, gestural, tactile, and spatial patterns of meaning' (Cope & Kalantzis, 2015, p. 3) is the multiliteracies pedagogy called *Learning by Design*. Originating in the work of the New London Group (1996), multiliteracies has changed from being an extension or supplement to literacy teaching and learning to a 'pedagogy of communication and knowledge representation for all subject areas' (Cope & Kalantzis, 2015,

p. 16). *Learning by Design* seeks to engage teachers in reflecting upon planning activities to supplement existing practice by broadening the range of activity types, and to support teachers in carefully planning the activity sequence.

In *Learning by Design*, the authors take the position that pedagogy involves the design of learning activity sequences, and detailed activity types mapped onto four knowledge processes (Cope & Kalantzis, 2015, pp. 17-22) presented below:

1. Experiencing (the known and the new): Learners are immersed in the everyday world outside of the educational setting, building on familiar, prior knowledge, and making unfamiliar domains of experience intelligible through scaffolding with the assistance of peers, and teachers;
2. Conceptualising (by naming and with theory): Learners learn to use abstract, generalising terms through drawing distinctions, identifying similarities and differences, and categorizing with labels, and connecting concepts to language, visual, and diagrammatic forms;
3. Analysing (functionally and critically): Learners examine cause and effect, structure and function. Learners develop chains of reasoning and explain patterns; and interrogate the world of subjectivity (human agency, interest and intent); and
4. Applying (appropriately and creatively): Learners apply experiential, conceptual or critical knowledge involving exact replication; and taking knowledge and capabilities from one setting and adapting them to a different setting.

Cope and Kalantzis (2015) foregrounded the role of digital media, taking the position that learning consists of ways of interacting with these resources such as writing, computers, diagrams, images and sound recordings. This approach places literacy at the heart of a pedagogy for all teachers, but it also offers a broad framework to be interpreted by different subject teachers without specifying any subject specific pedagogic practices. *Learning by Design* has been applied in Asian History, Geography,

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and Society and Culture (Bruce et al., 2015); Primary Language Arts (Hibbert, Ott, & Iannuci, 2015), History (Limone & Pace, 2015) and Primary Science (Yelland, 2015).

Learning by Design is different to R2L in the sense that it addresses the importance of technology-driven digital media for learning and it provides an overall mapping of activities onto four knowledge processes and provides different levels at which activities can be planned across subjects, whereas the R2L pedagogy provides a range of activities for teachers to translate into their subject and context.

However, one similarity appears to be that there is no explicit reference to teacher competencies. Cope and Kalantzis (2015, p. 3) stated that the *Learning by Design* pedagogy is the 'how' of multiliteracies, and the 'what' of multiliteracies is what teachers need, first, to enable their learners 'to be able to negotiate differences in patterns of meaning from one context to another' and, second, to provide learners with exposure to digital media and texts which interface written text with other modes of meaning such as visual, audio and gestural patterns of meaning. In terms of the SL competencies defined on pages 35-36 above, these two points of the 'what' of multiliteracies could be understood as the SL teacher competencies described there.

The R2L pedagogy also does not explicitly state teacher competencies. Instead, R2L states the package is a professional learning programme to equip teachers with the knowledge about language (and pedagogy) to apply with their students (Rose, 2015), therefore implying that teacher competencies are embedded within the package.

Connecting subject literacy competencies and pedagogic practices

In this issue, English-medium teacher SL competencies have been defined and detailed from different sources. Pedagogic practices from the position of SL were also detailed with examples that have been developed and trialled across different con-

texts. The relationship between these competencies, the 'what' of SL teacher knowledge and the pedagogic practices, the 'how' of equipping students with SL skills to communicate effectively, remains to be addressed in this section.

From the discussion of SL competencies and pedagogic practices above, there appears to be a general range of literacy competencies that teachers need, which remain broad enough to enable teachers to interpret them for their own subjects. These competencies, which encompass content language knowledge and skills, cannot be effective without the SL pedagogical content knowledge to equip learners with SL skills and practices.

Darling-Hammond, Hammerness, Grossman, Rust, and Shulman (2005) stated that teacher learning needs to be situated within specific domains and contexts, so the learning can derive from and be connected to the students they teach. From the position of Darling-Hammond et al. (2005), the literacy-focussed pedagogic practices outlined above can be applied by subject teachers to deliver the subject content with SL-appropriate teacher competencies such as drawing 'on deep and well integrated disciplinary knowledge' (National Institute of Education, 2009, p. 57) to enable their students to communicate appropriately within their subject.

Almost 30 years ago, Green (1988) proposed that all teachers of all levels need a greater awareness of the language and literacy dimensions of their subject areas. To state that the debate is still continuing could indicate that this area is still important for teachers to support their learners in schools across the world.

The complexities of teaching requires the integration of many kinds of knowledge and skills (Darling-Hammond, et al., 2005) including SL considerations. Challenges teachers face when addressing SL competencies and pedagogic practices will be addressed in the following section.

Teacher challenges with SL competencies and pedagogic practices

Despite the value of addressing SL competencies and pedagogic practices, there are some challenges teachers face. One such challenge is that students may not produce appropriate results across different subjects. For example, Coffin,

(2006a, p. 3) identified that with closely related Humanities subjects, such as English Language and History, some students may fail to produce the kind of writing favoured in History whilst excelling in English Language. The author stated that one way of understanding and accounting for this 'failure' is to argue that students have not developed control of the kinds of texts and linguistic structures that serve the specific purposes of the subject area. This can place the responsibility on the teachers, which presents them with challenges if they do not have the SL competencies themselves.

Love (2010) highlighted the challenges in providing literacy pedagogical content knowledge in teacher training, stating that teachers already have to learn disciplinary content knowledge and pedagogical content knowledge. The author argued that a considerable imagination and the design of carefully chosen resources and tasks would be needed if LPCK were to be added to the already intense load of curricular demands pre-service teachers face. If LCPK were to be an element added to teacher education, teachers would also need to be trained to suitable levels of LPCK. Wood et al. (2009) suggested 'much demonstration, scaffolding and explicit instruction' is needed to help teachers meet the vocabulary and concept development needs of their students' (p. 335).

Darling-Hammond et al. (2005) stated that giving teachers opportunities to engage in the subject matter in ways similar to those they expect their students to do was more likely to engage teachers in those practices in their classrooms. This approach could be adopted as one way of increasing teacher awareness of SL competencies and pedagogic practices.

Another issue that teachers face is whether they see real value in adopting SL competencies and pedagogic practices when teaching their students subject content. Hutson (1987) claimed that even effective training in content area reading by teachers is unlikely to prepare students for many aspects of literacy in the workplace due to the difference in contextual settings. To address this challenge, the author suggested raising the awareness of student literacy needs through research contrasting literacy research in schools and work environments.

Another challenge is that some teachers may also not see the need to explicitly address SL when, as

detailed above, such skills could already reside implicitly under the broader field of literacy. These challenges detailed briefly here will be addressed in the following conclusion, which will also summarise the role of SL competencies and pedagogic practices across the school subjects.

Conclusion

Darling-Hammond et al. (2005) summarised several large scale studies and found that there was a positive correlation between teacher effectiveness and the quantity of training received in subject matter and content-specific teaching methods. However, the authors also stated that other research highlighted that the duration of training was less influential than the content and pedagogy used to teach it.

In a later review of teacher training programmes that resulted in better prepared teachers, Darling-Hammond (2012, p. 139) identified the 'opportunity to study and apply subject-specific teaching methods' and 'targeted learning opportunities on effective teaching practices in specific content areas'. With this in mind, subject specific literacy competencies and pedagogic practices could be considered as part of these effective factors in contributing to developing quality teachers. However, as Love (2010) cautioned, the extent to which teachers take in externally produced 'expert' literacy knowledge depends on complex factors such as the teaching context, the perceived relevance of the 'expert' knowledge, the degree of autonomy given, the opportunities for sustained professional development, and the presence or absence of a like-minded professional community of learners. Love (2010) proposed educating a generation of subject specialist teachers in LCPK as a way to ensure students' literacy needs are met.

Whether or not specific SL competencies and pedagogic practices are defined in teacher training or teacher professional development material, Gibbons (2009) highlighted that teachers need to understand the language demands of their own subject to be able to teach subject specific literacies to their students. The author went on to state that without explicit instruction, it was unlikely students would be able to attain what they needed through exposure to different subject texts and knowledge. Gibbons (2009) stated that teachers and students need to have a shared language to use in identifying and talking about subject specific literacy needs, which could be one way to address SL competencies and pedagogic practices across the subjects. However, Schleppegrell (2013) stated that from a teacher education perspective, subject teachers may need convincing of the value of this language focus.

How SL competencies can translate into deep student learning through effective SL pedagogic practices can be summarised by Shulman's (1987) statement that lays bare the essential role of the teacher in achieving this, by positioning teaching as bridging subject content and pedagogy and 'the capacity of a teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by the students' (p. 15).

This issue of the Research Digest has detailed and discussed the 'what' of SL competencies and the 'how' of SL pedagogic practices for developing quality teachers to provide students with the skills to use academic language appropriately, meaningfully and precisely in a given subject area. However, this knowledge and skill set can only be realised through one essential agent: the teacher.

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