The Potentials of K–12 Literacy Development in the International Baccalaureate PYP and MYP

Final report

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1. Introduction

This final report of *The Potentials of K–12 Literacy Development in the International Baccalaureate PYP and MYP* contains:

- an **executive summary** and **key recommendations**;
- a **Literature Review** pertaining to written, verbal and visual literacies in multilingual teaching contexts;
- a **document analysis of selected International Baccalaureate (IB) documents** using the key themes identified in the Literature Review. The document analysis section comprises two main parts:
    a. a discussion of the findings of the document audit
    b. a visual representation of those findings
- **Appendices** which contain:
    a. the **completed matrices** which were used to audit the selected IB documents; and
    b. an **Annotated Bibliography** of selected articles from the Literature Review. The articles have been selected on the basis of their currency and usefulness to curriculum managers and leaders to help convert theoretical constructs in literacy into school programmes and classroom practices.

2. Executive Summary

2.1 Overview

The purpose of this project is to investigate literacy within the IB Primary Years Programme (PYP) and Middle Years Programme (MYP) and to inform review processes for each of the programmes. In the case of PYP, this report will inform its current full-programme review. It is envisaged that the MYP will use the report in future curriculum review processes, as well as for more immediate implementation and professional development planning.

Specifically, this project sought to answer the following questions:

a. To what extent, and in what ways, do the PYP and the MYP reflect the research base in developing literacy across and within K–12 grades in relation to curriculum, pedagogic, and assessment considerations? What gaps have been identified?
b. How do PYP and MYP documents connect characteristics, such as the promotion of international mindedness, a global student cohort with complex language profiles, and the transdisciplinary and interdisciplinary nature of the two programmes, to literacy development? How might these connections be strengthened?

A Literature Review was conducted to inform this investigation with a focus on the following:

a. key curriculum, pedagogic and assessment considerations in developing literacy across and within K-12 grades;
b. transition from general to discipline-specific literacy in adolescents' education, particularly for students receiving instruction in their non-native language;

c. the implementation of learning progressions in K–12 literacy curriculum development and teaching practice; and
d. the connection between literacy and international mindedness, a global student cohort with complex language profiles, and the transdisciplinary and interdisciplinary nature of the programmes.

The following key themes were drawn from the Literature Review:

a. theoretical perspectives;
b. basic literacy skills;
c. disciplinary literacy;
d. new literacies; and
e. multilingualism.

These themes were then incorporated into coding matrices to analyse how the MYP 2015 new programme guides, and the current PYP curriculum, map onto the research base. The following 10 recommendations were then drawn from the analysis of IB documentation. A full description of the recommendations is provided in the final section of this report.

2.2 Recommendations

Using the literacy themes as a framework and the coding matrices as a methodological tool, we have given careful consideration to the research questions surrounding the development of K–12 literacy across the IB continuum and to the PYP and MYP in particular. Our analysis has revealed many instances of exemplary principles and practices within both programmes, and our recommendations seek to extend and strengthen these.

Although some recommendations are directed specifically to an individual programme, most relate to both the PYP and the MYP or to IB at a more general level. The first seven recommendations are loosely linked to the five literacy themes. The remaining three focus on implications for pedagogy, assessment, and teacher professional development.

2.2.1 How language is learned – strengthen guidance on the ways learning is scaffolded through teacher and student interactions

Constructivism and social constructivism need further theoretical explication within the IB documentation to aid teachers in making the links between the inquiry learning that is foundational to the IB, and the ways in which language learning can be scaffolded explicitly within that approach. The PYP and MYP documentation could foreground these theoretical links and highlight the ways in which learning is achieved through the scaffolded interactions of teachers and students.

2.2.2 Descriptions of language – develop two separate descriptions of progress for mother tongue language learning and additional language learning in the early and primary years

A more fine-grained description of language learning is required to adequately track progress, particularly in the early phases of language learning. A more detailed description of language learning would also aid teachers in complying with the *Language and Learning in IB Programmes* recommendation that teachers record information in student language profiles, mapping their progress in order to support planning for future differentiation.

Mother tongue learning and additional language learning are significantly different, and it is recommended that two distinct descriptions of language learning be developed to track development in mother tongue and additional languages.

2.2.3 Language development across the years – extend the PYP *Language Scope and Sequence* to the MYP with additional focus on language complexity

Although the IB recognises that learning becomes more complex across the years, there is no detailed description of the precise ways language demands increase in complexity. A more detailed description of language and literacy descriptors within the *Language Scope and Sequence*, as recommended above, would help address this issue. Particular attention could be paid to the ways in which language becomes more complex as schooling progresses. Work could be done to identify gaps in the existing descriptors and map skills across the phases to better describe the development of those skills, and the shift from basic interpersonal communication skills (BICS) to cognitive academic language proficiency (CALP).

We recommend that the IB expand the scope of its language and literacy continuum to traverse the PYP and MYP. This would allow for smoother transitions from one programme to another, and for teachers in each programme to track students' progress in language knowledge and literacy skills.

2.2.4 Basic literacy skills – expand descriptions of basic literacy skills in guidance documents

The cross-programme language scope and sequence recommended above would extend the development of basic literacy to the MYP. Further elaboration of the CALP framework to describe the transition from basic literacy skills to disciplinary literacy could be attached to the continuum document *Developing Academic Literacy in IB Programmes*. The basic literacy skills embedded within the Approaches to Learning (ATLs) in both programmes could be more clearly articulated and provide an easily identifiable pathway for the development of basic literacy skills and their relationship to inquiry processes.

2.2.5 Language descriptions across the disciplines – provide additional guidance on disciplinary literacy skills and language features

Disciplinary literacy skills and their foundational disciplinary language features could be articulated within an expanded language scope and sequence. This would also illustrate the shift from the everyday registers of BICS to the academic registers of CALP, as recommended above.

Alternatively, subject-specific language continua could accompany subject documents, perhaps as language addenda. A document that provides a more articulated scope and sequence of the ways academic literacy develops, with elaborations on what academic literacy looks like within specific discipline/subject areas, would be particularly useful. This could be provided as a further elaboration of the CALP framework in *Developing Academic Literacy in IB Programmes*, an extension of the PYP *Language Scope and Sequence*, or an addendum to the ATL skills document.

2.2.6 New literacies - ensure the systematic representation of multiliteracies in PYP and MYP approaches to literacy

Close attention to the development of multiliteracies in the PYP and MYP would support their actualisation within transdisciplinary and interdisciplinary contexts for learning. As noted with other aspects of literacy, the systematic representation of multiliteracies in support and guidance documents such as *Language Scope and Sequence*, the ATLs or subject-specific guides could then be carried forward into learning objectives and assessment criteria. The digital framework for technology (Agency, Information and Design) should be used to make multimodal literacy skills and knowledge explicit.

2.2.7 Multilingualism – provide guidance on integrating multilingualism into planning and implementation

Teachers would benefit from guidance on how the IB principles of multilingualism can be achieved in the everyday practice of planning and assessment within IB programmes. Guidance could include indicators or prompts in subject overviews and planners that suggest ways additional languages could be used to explore the topics under instruction and where opportunities for multilingual practices may exist.

2.2.8 Language-focused pedagogies – develop specific guidance on pedagogies that scaffold literacy within an inquiry approach

Improvements to guidance on language and literacy within PYP and MYP documents have been a feature of the recommendations above. But language requires explicit apprenticeship if users are to successfully communicate with other users. This includes an apprenticeship into the academic language of school and also the differing language and literacy requirements across disciplines.

Although scaffolding and support is evident throughout IB documents, it is not entirely clear what explicit support looks like. Therefore, we recommend the development of examples for language-focused pedagogies that work well within authentic contexts, for example, **Scaffolding Literacy** as a pedagogy that combines explicit language teaching with inquiry approaches.

We also recommend the development of case studies to illustrate how language knowledge and literacy skills can be taught explicitly. These could consist of transdisciplinary unit samples in the PYP, or examples of how an interdisciplinary unit could work between subject groups such as Science and Language in the MYP. The case studies would provide examples of how language and literacy skills could be taught in authentic

contexts to reflect the IB commitment to inquiry-based, holistic, and meaningful learning. They would include examples of how language and literacy demands contribute to the development of conceptual understanding through a concept-driven approach.

2.2.9 Assessment – plan and assess for literacy outcomes

To ensure literacy outcomes are formally assessed in the PYP, we recommend that changes to *Language Scope and Sequence*, as outlined in previous recommendations, set out a clear progression of learning against identified literacy strands. We also recommend that language and literacy outcomes are clearly articulated and incorporated into planning for learning and for assessment.

In the MYP, literacy outcomes could be strengthened by tightening broad outcomes related to communication, broadening outcomes related to disciplinary literacy, and connecting these to assessment criteria in all subject group guides. This could be achieved through further explication of the ATL communication skills, the expansion of *Language Scope and Sequence*, or the development of discipline-specific literacy outcomes.

2.2.10 Professional development for teachers – focus professional development and resources on strengthening key aspects of literacy

To assist literacy specialists and classroom and subject group teachers in strengthening key aspects of their literacy practice within IB programmes, we recommend targeted professional development courses and professional resources. In the first instance, these should focus on the development of teacher content and pedagogical knowledge in the areas of disciplinary language and literacy skills, multiliteracies, and multilingual instruction.

3. Literature Review

The call for this project included a thorough review of the state of the literature base in literacy development. This Literature Review is intended as both a resource to inform programme heads and curriculum managers of the latest research and the research base upon which to map the IB document analysis.

The Literature Review provides an account of current perspectives on the teaching and learning of literacy to aid the IB in current and future curriculum reviews and planning for professional learning. This is a broad brief encompassing many fields of study, and as such the Literature Review is focused on a broad sweep of three key aspects of language and literacy teaching and learning. They are:

a. theoretical perspectives on literacy development and language acquisition;
b. language and literacy development across the years of schooling; and
c. pedagogical approaches to literacy development and language acquisition.

Each of these sections covers key aspects of language and literacy teaching and instruction, which were selected to fulfil the research brief. That is, to what extent, and in what ways, do the PYP and the MYP reflect the research base in developing literacy across the grades in relation to curriculum, pedagogic, and assessment considerations?

3.1 Methodology

The following method was used for the Literature Review.

A search of online databases of peer-reviewed literature from 2009 to the present was conducted. The search was limited to studies of school-aged students, and the keywords included: literacy continua, literacy development, bi-multilingual instructional practices, discipline language, literacy and language across the curriculum, content-based language

teaching, content and language integrated learning, text complexity, multiliteracies, school transitions, and translanguaging. Seminal works in the field of language acquisition were also included.

Articles meeting the criteria were read, and selected works were included in the final review. In all, 91 journal articles, 30 books, 14 reports, and five websites were included in the final review. These works were collated under themes related to the research questions and synthesised into the Literature Review section. Selected works were also summarised in an Annotated Bibliography, at Appendix I of this report.

Importantly, the vast majority of the literature reviewed deals specifically with languages with Latin-based alphabets. The review was conducted on English language resources, and Latin-script languages are those most predominantly recorded in English language literature. We recommend the future commissioning of research into literacy studies not based on the Latin alphabet.

3.2 Context

Success at school is a key predictor of occupational and social success in the post-schooling years (Serbin, Stack, & Kingdon, 2013) and success at school is largely dependent upon students' literacy skills (Hay & Fielding-Barnsley, 2009). Literacy levels are a perennial concern for governments around the globe. Concerns about perceived dropping standards of literacy, or desires to further improve existing literacy levels, stimulate a range of responses from governments and bureaucracies. They prompt government inquiries (e.g., the U.K. Rose report, the Australian National Inquiry into Reading), large-scale policy initiatives (No Child Left Behind and Race to the Top in the U.S., the National Literacy Strategy in the U.K.), and international testing (e.g., the international Programme for International Student Assessment [PISA], Progress in International Reading Literacy Study

[PIRLS] as well as numerous national standardised tests of literacy which are often high-stakes tests in their national contexts).

The literature reveals a clear tension in the educational discourse around what constitutes requisite literacy skills for a productive and proficient society. Whilst politicians, employers and academics all work from the premise that we live in a world of rapid technological development and a changing workplace, each presents very different solutions as to how best to prepare the next generation to live in that world (Jewitt, 2005). One side – predominantly politicians, but also, often, the popular media and some employers – calls for a back-to-basics approach to traditional notions of reading and writing, whilst the other – predominantly academics and researchers, and some employers – calls for an expansion of traditional notions of literacy to include areas like visual literacy, digital literacy, and critical literacy.

In this review, we describe both these perspectives of the "literate" citizen and aim to provide an account that cuts through dichotomous arguments and identifies the skills within both "traditional" and "new" literacies in a manner in which educators and educational administrators will find useful in their planning for literacy at both policy and implementation levels.

3.3 Definitions

The purpose of this review is to provide a research base for the evaluation of **literacy** potentials within the IB PYP and MYP. Thus it is important to clearly define what this review defines as *literacy*, and to define other terminology often conflated with *literacy*.

Literacy – the ability **to read and write text** effectively and appropriately in a range of contexts, and for a variety of purposes and audiences.

In this review, *literacy* is defined as the ability **to read and write text** effectively and appropriately in a range of contexts, and for a variety of purposes and audiences.

The review will also cover what have been described as *new literacies* (Lankshear & Knobel, 2006). *New literacies* describes the kinds of literacies required to communicate in an increasingly digital and multilingual global environment. Thus, new literacies incorporate understandings around multimodality, multilingualism and multiculturalism, coupled with rapidly developing technologies. For example, *visual literacy* is the ability **to view and create images** appropriately in a range of contexts and for a variety of purposes and audiences, and *multimodal literacy* is the ability to work effectively with **text and images in multimodal environments** for a variety of purposes and audiences (Cope & Kalantzis, 2009). Given that each of these new literacies could be the subject of their own significant literature review, and this is beyond the scope of this project, new literacies are dealt with in their broadest sense.

Language knowledge – the requisite knowledge we bring to the task of reading and writing effectively.

A requisite component of literacy is **language knowledge**. Literacy competence is dependent upon efficacy with language – more specifically, the repertoire of language resources which we can bring to the task of being literate.

Intralanguage knowledge – the language knowledge about the target language we draw upon when learning the target language.

Interlanguage knowledge – the language knowledge from other languages we draw upon when learning the target language.

These language resources can be those within the language being learned, such as our understanding of how different grammatical structures within the language construct different meanings. We can describe these as **intralanguage** resources for literacy learning. For example, we understand that if the target language is English we use imperative verbs to begin instructional sentences, like, “Divide the circle into equal parts”.

Language resources can also include our understanding of how other languages work, and we can draw upon this knowledge in the development of literacy skills. We can describe these as **interlanguage** resources. For example, a mother tongue speaker of Greek may use the Greek construction of imperative sentences, which begin with the first person verb, such as, “I divide the circle into equal parts,” as a point of contrast and comparison when learning the imperative construction in English.

The differentiation between **language** and **literacy** is important in any review of curriculum and pedagogy but particularly important in the IB context, where learners often have multilingual profiles. The relationship between language and literacy is further explained in Section 1 of the Literature Review.

3.4 Section 1 – Theoretical Perspectives on Literacy

Section 1 of the Literature Review begins with an account of the broad theoretical perspectives pertaining to language acquisition. This is followed by a review of the ways in which school language learning is conceived, with particular reference to the difference between everyday language and school language. A more detailed explication of the important difference between *language* and *literacy* is provided. Section 1 closes with a brief reference to the challenge of building teacher knowledge about language and literacy.

3.4.1 An overview of theoretical approaches to language learning and teaching

Theories of language acquisition

1950s – Behaviourism
Language learned through stimulus from the environment

1960s – Nativism
Language learned through innate cognitive capacity

1980s – Social interactionism
A combination of environmental input and cognitive capacities. Language learned through communicative interactions with others.

Language acquisition, first or additional, is a complex and contested field (Gass, 2008; Lightbown & Spada, 1999; Saville-Troike, 2006), one which is of interest to a number of different sciences:

> The complexities of second language acquisition, like those of first language acquisition, represent a puzzle for linguistics, psychological and neurological scientists which will not soon be solved. (Lightbown & Spada, 1999, p. 45)

These linguistic, psychological, and neurological research traditions have informed theories of both first and additional language acquisition. Language learning happens inside the brain, making it difficult to accurately research and leaving much of the process open to conjecture and interpretation:

> Because it is impossible for us to observe mental capacity or language learning directly, the different beliefs are based largely on theoretical assumptions and are tested by indirect methods which individuals who come from different disciplinary perspectives may not agree on. (Saville-Troike, 2006, p.18)

From the different fields of research, three main theories of language learning have emerged over the past century. They can be identified broadly as behaviourism, nativism, and social interactionism (Lightbown & Spada, 1999; O'Neill & Gish, 2008). Each is described briefly below.

Behaviourist theory was originally expounded most notably by Skinner (Campbell & Green, 2006), who claimed that language learning occurs through appropriate stimulus and response, and imitation of surrounding speech. There is no recognition of a child's role in the construction of meaning, and all emphasis is on external input. According to behaviourists, the same cognitive processes are used for all language learning. Certainly it is possible to track imitative behaviour in children learning first and additional languages, however children do more than simply repeat the structures they hear, and they do more than translate first language (L1) structures into the additional language. Indeed, they often construct language which is reflective of the structures of neither the L1 nor the additional language.

Lightbown and Spada (1999, p. 36) conclude: “For second language acquisition, as for first language acquisition, the behaviourist account has proven to be at best an incomplete explanation for language learning.” This sentiment has been repeated over the decades (Wang, 2015). Nonetheless, as a social theory of language learning, behaviourism does have resonance with a number of common classroom literacy pedagogies where language educators utilise the behaviourist learning patterns of modelling, repeating, and rewarding correct responses (Wang, 2015) – for example, rote learning of spelling lists (Adoniou, 2014c).

Nativist theory arises from the work of Chomsky (1975), who claimed that there are basic universal and intuitive rules of language and that each individual has an innate biological capacity to learn. The emphasis is solely on the internal processes of the child, and a minimal role is given to the cultural and social environment in the construction of meaning (Campbell & Green, 2006). Nativists observe that both first and additional language learners demonstrate more knowledge about language “than they could reasonably have learned if they had to depend entirely on the input they are exposed to” (Lightbown & Spada, 1999, p. 37). Thus, the conclusion is that a child’s brain has the organic capacity to acquire any language, first or additional, which operates in the child’s environment, and this acquisition has a natural order of development.

During the 1970s numerous investigations into second language acquisition sought to establish whether there was a natural sequence in the order of second language (L2) acquisition, as proposed by the nativists. As a result, Dulay, Burt, and Krashen (1982) established the “L2 acquisition equals L1 acquisition” hypothesis, concluding essentially that children learn their second language the same way they learned their first language. Scientific advances in the 21st century have allowed detailed research into brain activity and

confirmation of the hypothesis that language learning occurs in one part of the brain (Sabourin & Stowe, 2008). Pedagogies inspired by nativist theories are characterised by their emphasis on developmental approaches to learning language, an unfolding of a natural sequence of learning which occurs in non-interventionist environments, for example, developmental play-based approaches and inquiry approaches to learning.

Social interactionist theory is inspired by the work of Vygotsky and, later, Bruner (Campbell & Green, 2006). A social interactionist perspective on language and literacy learning recognises that literate behaviour is the result of historic and cultural evolution and does not just appear naturally at a given point in time or development. It is the result of each individual's experiences and interactions with the world around them. As such, the skills, knowledge, and dispositions that the individual brings to the language and literacy learning task are crucial.

Behaviourist and nativist theories sit at opposing ends of a continuum (Wang, 2015), with behaviourists positioning language as a purely social construct and nativists claiming language is a purely cognitive construct. Social interactionist theories sit somewhere in between, and are most profoundly influenced by the work of Vygotsky and his proposal of a zone of proximal development (ZPD) (Vygotsky, 1986). The ZPD represents the ideal distance between the learner and what is to be learned. When the distance between the learner and what is to be learned is zero, no learning happens. When the distance is too far, it is difficult for learning to happen. Learners are best supported to bridge the distance when supported by a capable other (Gibbons, 2002), a process Bruner has described as *scaffolding* (Bruner, 1978). Social interactionists see language acquisition as an interchange between social input from others and the innate cognitive processing of that input.

Social interactionist theories emphasise the role of social interaction and the part played by significant others in the child's environment in language development. Like the nativists, the social interactionists agree that a child has a natural capacity to learn, but this acquisition of language, first or additional, occurs in the interactions with other people and is not simply a matter of natural acquisition. Nor is literacy learning simply a series of stages to go through in order to reach an end goal, for example, learning sounds and syllables to eventually learn to comprehend (Carney & Indrisano, 2013). Social interactionist approaches are based upon an understanding that social purpose underpins all learning: "Knowledge and insight, not just more finely honed skills, should always be the result of participation in a literacy activity" (Billman & Pearson, 2013, p. 26).

Discourse vs discourse

'discourse', with the lower case 'd', refers to the everyday description of the ways we use language to communicate.

'Discourse', with the upper case 'D', was coined by James Gee to describe the particular language patterns used by different groups of people to achieve their specific purposes.

In the field of applied linguistics, James Gee's notion of Discourse (Gee, 2012) aligns with the social interactionist paradigm. Gee describes Discourses as the different ways in which behaviour and communication are encoded by particular groups, to achieve their particular purposes. This manifests itself in different forms of spoken and written language, or texts, each with its own organisational patterns and conventions according to the purpose and audience of each piece of text (Derewianka, 1990; Macken et al., 1989; Rothery, 1984).

Gee's Discourse theory has been particularly influential in the development of genre approaches to literacy teaching, and disciplinary literacies in education. These approaches recognise that different groups of people will use language differently to communicate their identities, their thoughts, their knowledge, and their purpose. This perspective on language purpose is particularly useful when considering the range of language resources students need to draw upon, particularly those from diverse backgrounds learning in multilingual contexts (Wang, 2015).

Table 1
Summary of the three main theories of language acquisition

	Behaviourist	**Nativist**	**Social interactionist**
Locus of learning	Social	Cognitive	Social and cognitive
Informing theorist	Skinner	Chomsky	Vygotsky
Teacher role	Controller	Reactor	Intervener
Literacy approach	Bottom up – e.g. mastery programs	Top down – e.g. process writing	Interactionist – e.g. four resources model
Teaching strategies	Drill, rote	Free play, student-initiated inquiry	Scaffolding, use of language for a variety of social purposes (genre)

It is the social interactionist perspective on language and literacy learning which has informed this Literature Review and the selection of the themes. It has been selected because of its primacy in current understandings of language acquisition and literacy learning and teaching. It is particularly relevant to the schooling contexts of the IB programmes because, of all the theories, it takes most account of the multilingual reality of the majority of IB students.

Much recent educational research in the field of literacy has pursued a social interactionist perspective, as it represents a theoretical paradigm which can take account of some of the salient factors of behaviourist theory – such as the role of external input – and nativist theory – such as the capacity of the individual to generate original language. The social interactionist theoretical paradigm represents a sociocultural approach to language learning which Lightbown and Spada (1999, p. 26) suggest can help explain "how children relate form and meaning in language and … learn to use language appropriately" in a range of social contexts.

From a social interactionist perspective, each child already has a considerable amount of skill, knowledge, and experience to bring to the task of language and literacy learning. Consequently, a social interactionist perspective on language and literacy instruction is particularly appealing for teachers working in culturally diverse classrooms. It recognises the differences children bring with them to the classroom in positive ways.

> Each student possesses multiple frames of reference with which to construct knowledge by virtue of their ethnic background, race, class, gender, language usage, religious, cultural and political identities … The potential for knowledge construction depends very much on how schools react to students' attempts to employ these diverse frameworks for meaning making.
> (O'Loughlin 1992, in Dyson 1993, p. 7)

3.4.1.1 Additional language acquisition

Whilst the theories of language acquisition broadly apply to all language learners, the acquisition of an additional language has some clear differences which have a particular impact upon the ways in which they are instructed in school. Key differences in first and additional language acquisition are outlined in this section.

3.4.1.1.1 Nomenclature

Students whose mother tongue is not the language of instruction in the schools are labelled in various ways – often reflecting the attitude of the schooling system or society towards these learners. For example, in schools where English is the main language of instruction, at the positive end of a nomenclature continuum they may be termed *bilingual learners*, and at the opposite end of that continuum they may be termed *non-English-speaking background (NESB)* learners. These disparate labels for the same cohort capture the asset/deficit positions existent in schools in relation to students who are simultaneously learning the language of school instruction and learning **through** the language of school instruction.

Occupying a more neutral position in the centre of the nomenclature continuum in English-speaking countries are the terms *English language learner (ELL)*, prevalent in the U.S., *English additional language learner (EAL)*, prevalent in the U.K., and *English as an additional language or dialect learner (EALD)*. The last term has officially been adopted in Australia in recent years, replacing *English as a second language (ESL)* (ACARA, 2012b). The change in nomenclature was important, as it recognised that the majority of these learners already speak two or more languages, so English is not their second language. It also includes the many Aboriginal students in Australia who speak a dialect of English, Aboriginal English, which has a different linguistic structure to the Standard Australian

English taught in schools (Truscott, forthcoming). This same reasoning would apply to any country where a dialect of the language of instruction has grown and has prominent use among students.

Whatever the nomenclature, each term applies to a specialised field of education concerned with teaching English (or the language of school instruction) to learners who do not have that language as their first language **and** who need support with that language in order to participate effectively in the school curriculum. As such, not all learners who speak other languages or dialects require specialist school language instruction, because they may already be proficient users of that language.

An important distinction between students who are learning their first language and those who are learning additional languages is that the additional language learners are linguistically skilled, because they already speak at least one other language. They are able to bring this metalinguistic awareness (see definition below) to the learning of new languages (Kroll, Dussias, Bice, & Perrotti, 2015), and this changes not only the pace of their learning but also the nature of the instruction. These instructional differences are reviewed in detail in 3.6.2.3, Multilingual Pedagogies.

Indeed, in the past decade leading practice in the field of Teaching English to Speakers of Other Languages, for example, has shifted from English-only instructional practices to an articulation of the importance of multilingual instruction (Flores, 2013; Garcia, 2009; Taylor, 2009). However, mainstream generalist classroom teachers are less aware of these developments in the field (Adoniou, 2014b) and there is a prevailing belief that “good mainstream teaching” is sufficient for all learners, including those who are learning English as an additional language (de Jong & Harper, 2005). Studies report a

general belief in the mainstream teaching community that a learner's first language is of no significance to the learning of English, except perhaps as a hindrance (Coleman, 2012; Garcia, 2009; Konishi et al., 2014; Naidoo et al., 2014). These misconceptions are significant given the classroom reality of the large numbers of multilingual speakers in classrooms around the world, where monolingualism is actually the minority condition (Konishi et al., 2014). Young and Helot (2003) describe these community language speakers as "ignored bilinguals" (Young & Helot, 2003). That is, their knowledge of other languages, and the metalinguistic knowledge that this generates, is substantially unacknowledged and unused by the school and teachers. Cummins (2015) characterises this as a constructed disadvantage for these learners, that is, having English as an additional language is not inherently a disadvantage, but is transformed into disadvantage by the school's responses to this linguistic asset.

Monolingual classroom practices stand in contrast to numerous studies which have found students' first languages to aid them in the learning of English (Cummins, 2015).

Benefits of multilingualism

Cognitive:
- improved capacity to learn additional languages, including the language of instruction;
- improved capacity for problem solving; and
- improved capacity for concentration and focus on tasks at hand.

Social:
- increased sensitivity to other cultures;
- enhanced sense of identity and self-esteem; and
- improved relationships with family.

Cummins (2000) recorded 150 studies over 40 years confirming the mutual reinforcing benefits that learning one language has on the other. Many more have been reported in the intervening years (Myers, 2014; Pérez-Cañado, 2012). The conclusion of these studies is that English is learned faster when the first language is maintained (Kiernan, 2011). The maintenance of the mother tongue through the teaching of the language of school instruction builds the multilingual profile of the students, which has been found to have social and cognitive benefits.

Bilingual learners have highly developed metalinguistic awareness (Kroll et al., 2015; Lo Bianco & Slaughter, 2009). This means, particularly when they are encouraged to use their home language knowledge, they are able to think, talk, and reflect on how languages work. This is linked with improved literacy outcomes in both their home language and the additional language they are learning (Cummins, 2000). Conversely, a lack of attention to L1 maintenance could contribute to reduced achievement in both the first and additional languages (Cummins, 2015; Hornberger & Link, 2012).

Bilingual brains are more flexible, more creative, and better at problem-solving (Clyne, 2005; Cummins, 1981; Kroll et al., 2015; Lo Bianco & Slaughter, 2009).

The loss of the mother tongue leads to social breakdowns in the home and community (Kibbler, Salerno, & Hardigree, 2014). Conversely, the maintenance and development of bilingualism has been shown to improve relationships and intercultural understanding (Pérez-Cañado, 2012).

Traditional approaches to simultaneous L1 maintenance and additional language learning have occurred in bilingual programmes. More recently, other permutations to dual-language programmes have included content-based instructional methods (typically in a

context where the socially dominant language is also the language of instruction but not the first language of the learner) and content and language integrated learning (CLIL) (typically where the language of instruction differs from the socially dominant language of the school).

Code-switching – using vocabulary or syntax from another language whilst communicating in the target language

Translanguaging – a renaming of "code-switching" to characterize the phenomenon as a productive and desirable feature of additional language learning

Polylanguaging – a conscious choice made by the speaker to use whatever vocabulary or syntax from their entire repertoire of language knowledge will best suit their purpose

Each of the bilingual approaches described in the previous section is characterised by a separation of the languages being learned, that is, students are expected to do their lessons in the target language. In very recent years, a new term has emerged in the field: *translanguaging*. Translanguaging describes a fluid interrelationship between languages within the brain of the individual. Rather than conceiving of multiple language learning occurring as individual "solitudes" (Cummins, 2015) where the languages are kept in separate boxes in the brain, translanguaging recognises that students use whatever linguistic tools they can pull from their linguistic repertoire in order to learn new language and use it (Kroll et al., 2015).

The phenomenon of learners shifting from one language to the other has long been observed, and it is described as *code-switching*. Code-switching was often observed as a

negative event and discouraged, but translanguaging positions the phenomenon as both natural and, when managed well, helpful to language learning (Hornberger & Link, 2012).

Møller and colleagues (2014) have added a new word to the mix – *polylanguaging* – which offers a further nuance to the term translanguaging. Whilst translanguaging implies a shift from one language to the other, Møller et al. describe polylanguaging as a smorgasbord of choice of languages where the speaker employs "whatever linguistic features are at their disposal to achieve their communicative aims as best they can, regardless of how well they know the involved languages" (Møller, Jørgensen, & Holmen, 2014, p. 51). So, as an example of translanguaging, a Greek learner of English may utilise some Greek vocabulary to fill English vocabulary gaps when attempting to communicate an idea, for example, "The problem of 'nefos' [smog] is very serious in Athens." In an example of polylanguaging, a Greek learner of English may consciously employ aspects of Greek syntax and English vocabulary to communicate a message, for example, *chillareis*, is an instruction to *chill out* which uses the base English morpheme of *chill* and attaches a Greek inflectional affix for the second person verb *eis*.

Both polylanguaging and translanguaging represent a movement to describe code-switching in positive terms (Heugh, 2015). As linguists observe, "The ability to engage in fluent code-switching is a hallmark of high proficiency in two languages" (Kroll et al., 2015, p. 385). By redefining code-switching in this way, a field of investigation is established that enables the study of the phenomenon in ways that would allow a more systematic "corralling" of its potentials for creating effective language learning environments. Hornberger and colleagues have developed a series of continua to provide a more accurate and more spacious means by which to describe the various resources learners bring with them to the task of learning to be literate in multiple languages. The continua also provide an

alternative approach to essentialist descriptions of language learners – for example, bilingual/monolingual/multilingual – recognising that learners may sit on various points of a continuum, and that there are a number of continua. These continua are: context, development, content, and media (Hornberger & Link, 2012, p. 266).

Møller et al. (2014) in their research in complex multilingual environments in urban Danish schools describe students with complex linguistic behaviours and identities which fit well into Hornberger's multiple continua. Møller et al. describe the students as sophisticated and multifaceted as they negotiate multiple linguistic identities, but they also observe many of the students in their academic performance are stagnating, not because of their complex multilingual identities but, rather, because their schools are failing to utilise all the students' linguistic resources which could bring academic achievement in the school's language of instruction.

Importantly, recent research suggests that it is language proficiency rather than the age of acquisition that shapes the effectiveness of communication and learning in complex multilingual environments (Kroll et al., 2015). Thus, schools and teachers should focus on getting language instruction right and not use the age of students – for example, older students who are new to the language of school instruction – as a rationale for lack of student achievement. Kroll et al. (2015) observe, "The fundamental permeability across the two languages makes early and late bilinguals more, rather than less, similar to one another" (Kroll et al., 2015, p. 378). However, teachers in their instruction must utilise in overt ways this permeability and cross-interaction between languages. Such pedagogical interventions are reviewed in Section 3 of the Literature Review.

In summary, any attention to the development of language and literacy in English must also attend to the maintenance of language and literacy in the mother tongues of students.

3.4.2 Academic literacies vs everyday literacies

Key to helping educators navigate their way through the flurry of new terminologies to describe the ways in which additional languages are acquired is to have an understanding of the nature of *school language*. Ultimately, the aim of school is to give students the skills to perform the literacy tasks of school successfully – and to understand what school language is required to achieve this. In other words, the notions of bilingualism, translanguaging, code-switching, and polylanguaging are only helpful insofar as we can understand how they might support learners to become proficiently literate in the language of school instruction.

BICS – basic interpersonal communications skills

Language used for interactions in social contexts, e.g. describing, recounting

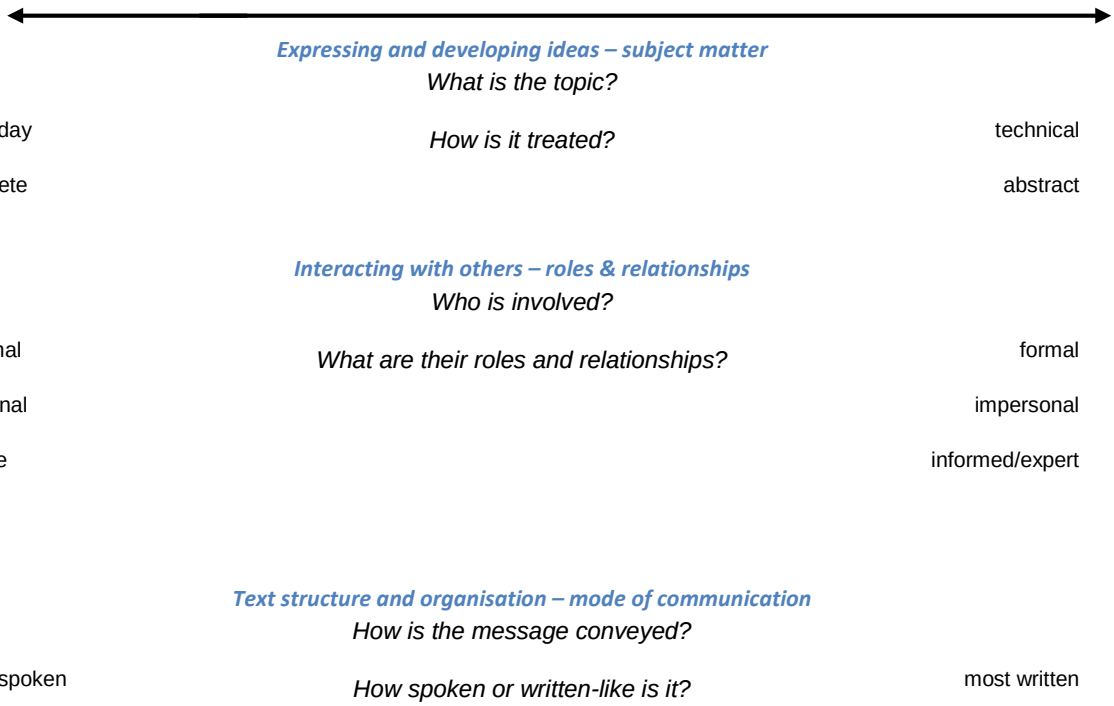
CALP – cognitive academic language proficiency

Language used for more abstract and academic contexts, e.g. evaluating, analysing, synthesising

Success at school is achieved through students' proficiency in academic language. However, it is most often social language in which they first become proficient. Cummins (2000) describes these two registers of language as BICS and CALP. He found that additional language learners often display oral language competence in their use of social and

playground language (BICS) and can be fluent and effective communicators in social situations. This oral fluency in everyday language can often be deceiving for teachers, as it can give the impression of language proficiency when in fact the student may not be able to deal effectively with the academic written tasks in the classroom (CALP). CALP requires students to deal with academic language demands that become increasingly abstract as they move up through the school.

The South Australian Department of Education (2014) provides a useful overview of this shift from *everyday spoken* to *formal academic written* language (Goodwin, 2011). See Figure 1 (South Australian Department for Education and Child Development, 2014).



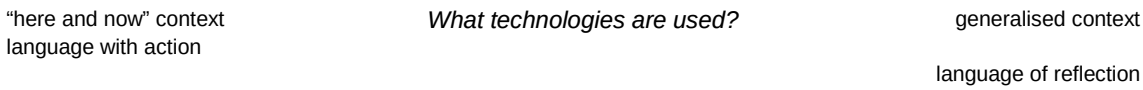


Figure 1: The Register Continuum. South Australian Department for Education and Child Development, 2014.

BICS is achieved relatively quickly, in approximately two years when learners are immersed in contexts where there are optimum opportunities to engage in meaningful communicative activities. CALP takes many years to develop (seven to 10 years) (Wang, 2015). CALP is particularly crucial to school success, as it is "the language through which school subjects are taught and assessed" (Schleppegrell & O'Hallaron, 2011, p. 3). Cook, Boals, and Lundberg (2011) characterise this academic language proficiency as the ability to "negotiate multiple academic environments, make sense of complex content, articulate understanding of that content in academic forms and assess their own growing understanding" (Cook, Boals, & Lundberg, 2011, p.66).

This Literature Review focuses particularly on these academic literacies – how they are different from basic communicative literacies, how they are expanding in their definition in an increasingly technological world, and how they are best taught.

3.4.2.1 Expanded descriptions of literacy – multiliteracies The range of texts that students engage with both in and out of school has expanded rapidly (Moje, 2008). There is a tension between what counts as legitimate literacy in schools and the kinds of literacies that predominate in the community. This tension is most starkly played out in the differences between what educational researchers consider literacy and what educational bureaucrats and politicians consider literacy.

Whilst educational researchers describe new literacies (Lankshear & Knobel, 2003) that recognise a changing world with multiple communication modes, educational bureaucrats are increasingly pursuing a "back-to-basics" approach to literacy – traditional print literacy skills measurable by standardised assessments.

These two perspectives on literacy may coexist within a curriculum, but careful consideration must be given to the pedagogical approach adopted by schools to ensure there is coherence between the ways in which traditional and new literacies are taught. This pedagogical coherence is best achieved by approaching each through the same theoretical lens. A sociocultural lens can be applied to both traditional and new literacies.

Jewitt (2005) argues that schools which fail to teach new literacies for new times are promoting a narrow linguistic view of literacy. This not only fails to reflect new times but also fails to connect with the lived experiences of children in schools who in their out-of-school lives are already working with these new literacies. As Kress observed two decades ago, "Current official notions of literacy are so ungenerous, so unreflecting about the real needs of young people in the societies of the next decades, that it is essential to advance alternative conceptions" (Kress, 1997, xvii).

Goldman in her 2012 critique of the state of literacy in secondary schooling in the US said that successfully literate students are able to analyse, synthesise, and evaluate "information from multiple sources of traditional text as well as expanded conceptions of text that include multimodal information sources" (Goldman, 2012, p. 90). Dyson (2001) argues that until educators engage with these out-of-school literacies they will struggle to teach in-school literacies, stating that "children cannot understand foregrounded school texts except in the context of their experiences with other texts" (Dyson, 2001, p. 418).

Multiple modes – the modes through which we communicate

- linguistic – spoken and written;
- visual;
- audio;
- gestural;
- spatial; and
- tactile.

Multimodal – combinations of the above, also described in the literature as "'intersemiosis", "synaesthesia" and "cognitive pluralism"

In 1994 a group of like-minded, but quite diverse, academics (Cope & Kalantzis, 2000; Group, 1996) met to consider why there still remained inequities around educational success, not just in developing countries but also within developed countries. Their eventual work addressed this need to work with both traditional and new literacies. They called themselves the New London Group, and they reflected upon existing understandings around multimodality and multiculturalism, coupled with rapidly developing technologies, as they considered what needed to be done with literacy and literacy pedagogy to redress the problem of equity in education.

To address the need, the group came up with the concept of *multiliteracies* as a new organiser for thinking about what children need to be taught in schools in order to give them equity of access to school learning, but also to prepare them for the realities of a changing world. Foundational to the multiliteracies framework is diversity, and an understanding that diversity is not the exception or the exotic in the class, but rather that diversity is the norm. They describe diversity as "a paradoxical universal", and they explain that a fundamental goal of multiliteracies is to support the growth of "a person comfortable with themselves as well as being flexible enough to collaborate and negotiate with others who are different from themselves" (Cope & Kalantzis, 2009, p. 173). This is a goal well matched with the IB's values of international mindedness.

The *multi* in *multiliteracies* represents more than a multiplicity of personal identities; it also represents multimodality and multilingualism. The first is a multiplicity of modes for communication and was identified by the New London Group in their original manifesto as linguistic, visual, audio, gestural, spatial, and multimodal (Cope & Kalantzis, 2000). In a later review of their work, they expand this list of modes to include tactile and break the linguistic into two distinct modes – the spoken and the written linguistic modes (Cope & Kalantzis, 2009). This latter distinction came in recognition of the different language structures within the spoken and written modes, which can perform different communicative functions. This differentiation is further discussed in the following sections on language and literacy.

Key to the New London Group's work is the position that the modes work together in parallel ways in what has variously been described as *intersemiosis*, *synaesthesia* and *cognitive pluralism*. They claim: "In a profound sense, all meaning-making is multimodal" (Cope and Kalantzis, 2000, p. 29). They describe this as the reality of lived lives, although it

is not necessarily reflective of the ways in which learning is pursued in schools, where they suggest the focus on the linguistic, and predominantly the written word, has been narrow (Cope & Kalantzis, 2009) and to the general detriment of learners. Other modes have been ignored when they may have been the foundation for successful learning in the linguistic, and a narrow focus on the linguistic has not prepared learners for life after school, where they will be required to operate in more multimodal ways.

The second *multi* component of *multiliteracies* is the multiple cultural and linguistic differences that exist within groups and between groups. They define culture not simply as ethnicity but as encompassing all of the influences that contribute to our identity, including gender, profession, politics, religion, sexuality, socio-economic status et cetera, all of which will impact upon the kind of language we use and when and where we will use it.

Those advocating a new literacies approach are concerned we are disadvantaging our children if we do not better prepare them at school for the literacy demands of the "real world" (Cope & Kalantzis, 2009), which is increasingly a world that requires creativity, innovation and responsiveness (McDougall, 2004). They propose transformative approaches to education, and literacy teaching in particular, so that schools produce citizens who make literacies rather than simply reproduce them (Cope & Kalantzis, 2009).

Cope and Kalantzis (2009) describe today's students as ones who are already engaging with literacy in out-of-school practices in ways which point to the necessary present and future of literacy instruction. Referring to young people's engagement with various forms of social and digital media, they describe them as "actors rather than audiences, players rather than spectators, agents rather than voyeurs and users rather than readers of narrative" (Cope & Kalantzis, 2009, p. 173).

For schools to produce learners capable of transforming language rather than simply replicating, it requires shifts in pedagogy: "It forces our attention away from seeing competent adherence to rules as sufficient, and to focus on a concern with the competent development and enactment of design" (Cope & Kalantzis, 2009). *Design*, as used here, is intended to describe the deliberate and very social process of relating objects, images and words to **make** meaning. The design knowledge and associated skills are socially mediated, through interactions with competent others. These multiliterate and multimodal pedagogies are described in more detail in 3.6.2.4, Multiliteracies Pedagogies.

3.4.2.2 Language and literacy – the relationship between the two

As discussed in the introduction to the Literature Review, it is important to understand the difference between *language* and *literacy*.

Language is prototypical to *literacy*. *Language* is the tool that enables communication to occur. *Literacy* is the manifestation of those communications – our written and spoken texts. The effectiveness of our literacy – our communicative effectiveness – is dependent upon our efficacy with language, our repertoire of language tools. Our literate capacities are dependent upon our language resources. The smaller our repertoire, the less efficient and effective our literacy practices. The more language resources we have, the more language choices we can make and the broader and more communicative our literacy practices. Literacy is therefore a communication practice dependent upon language – "a language-based semiosis" (Kress, 1997, p. 20).

3.4.2.2.1 Grammar

Grammars

Prescriptive grammars are static and prescribe rules for how language should be organised.

Descriptive grammars are evolving and describe the ways in which language usage changes according to time, audience and purpose.

To understand language we must also understand grammar. Grammar is how language is organised to enable meaning to be communicated between people. Grammars are classically divided into two types: those which have been written to prescribe how people should organise language to communicate – prescriptive grammars; and those which describe how people do organise language to communicate – descriptive grammars.

Michael Halliday's systemic functional linguistics (SFL) grammar (Halliday, 1985) is a descriptive grammar focused on describing how language is organised differently in different contexts. It has been influential in both theorising about literacy and the practice of teaching literacy. In a descriptive grammar there is no one correct grammar but, rather, language choices can and are made according to who the communicators are, called *tenor*, what they are communicating about, called *field*, and how they are communicating, called

mode. Further explanation of field, tenor, and mode can be found below. SFL lies at the heart of Gee's notion of Discourse, that is, the different ways groups organise their interactions with one another. Gee's Discourse theory, in turn, lies at the heart of genre and disciplinary theories of school literacy, which will be discussed in the following section.

Language can be usefully categorised across three levels – text, sentence and word level (Macken, 1989).

Text-level analysis – focused on rhetoric and discourse

Sentence-level analysis – focused on syntax

Word-level analysis – focused on vocabulary

Text-level language deals with discourse, sentence-level language deals primarily with grammar, and word-level language deals primarily with vocabulary. The language features which differentiate **genres** can be accounted for across these three levels, and analysing them in this way allows us both to unpack the academic language identified by Cummins in his differentiation between CALP and BICS and to unpack the academic language that challenges even mother tongue speakers as they make the transition from primary to secondary school (Fang, 2012). Thus, a focus on language and how it is used in the school instruction is equally beneficial to additional language learners and mother tongue speakers.

3.4.2.2.2 Increasing language demands across the years of schooling As the literacy practices of school become more complex as school progresses, the language required to perform those literacy acts becomes more demanding. The personal recounts of early childhood shift to creative story writing in later primary years. The description of the science experiment in primary school shifts to an explanation and hypothesis for the outcome of the experiment in secondary school. The language resources of students will dictate the extent to which they effectively make this shift. Do students have an adequate vocabulary to create a make-believe world for their creative writing? Do they have the language resources to shift from the spoken convention of starting their written sentences with the subject of the sentence – "I went to the park. We played football" – to start with phrases that describe circumstance – "Last Sunday, we went to the park. Although it was raining, we played football"? Do they have the language resources to shift from a first person account of the science experiment – "I watered the beans every day" – to the use of the conditional and passive – "If the beans are watered every day, they are more likely to survive"?

The Common Core State Standards in the U.S. is a state-led effort to describe core learning in English and Mathematics for all students across the country. They have been introduced, in part, to better describe increased complexity in language across the disciplines and across the years (Common Core State Standards Initiative, 2015). The specificity of language and literacy within the disciplines is reviewed in detail in Section 2 of the Literature Review.

In summary, language is prototypical to literacy but not separate from literacy and should not be taught separately from literacy – language choices are made in the service of

real communication, and it would not be useful to develop language skills separate from literacy teaching. For example, decontextualised grammar lessons would not be productive in the development of literacy skills. Pedagogies for explicit but meaningful teaching of language in the service of literacy skills are outlined in 3.6.2, Pedagogical Principles.

3.4.2.3 Language and literacy across the discipline content areas The field of literacy teaching has expanded in the past decade to describe literacy within the discipline or content areas. The theoretical basis for this shift has come from Gee's notion of Discourse, described earlier, and the work on genres in school has grown from this theoretical perspective.

Genres – predictable text structures for specific purposes. Typical academic genres include:

- recounts,
- reports,
- procedures,
- explanations,
- expositions,
- discussions, and
- narratives.

Key to understanding the literacy demands of the content or discipline areas is understanding the differences in the ways language works in each of the disciplines.

It is possible, within any given culture, to identify accepted and predictable ways in which language is organised to achieve a particular purpose. These socially mediated predictable text structures are known as *genres* (Hillman, 2014; Macken et al., 1989). These differences can also be categorised according to the social purpose of the writing, which is understood through an examination of the text's field (what it is about), tenor (who it is for), and mode (how it is presented) (Derewianka, 1990; Rothery, 1984).

This constitutes a *genre approach* to writing, an approach that has emerged from social interactionist theories of language development, and an SFL approach to language analysis (Macken et al., 1989). This movement has allowed a description of the relationship between language and literacy in more precise ways – rather than the more common conflation of the terms language and literacy.

3.4.2.3.1 Genres across the disciplines The work of SFL is based on the understanding that communication differs according to purpose and audience, and this manifests itself in the production of different spoken and written genres. Some genres are identified as being more prevalent in some discipline areas than others. For example, explanations are more likely to be required in the scientific disciplines, whilst narratives were more prevalent in the humanities. Lack of explicit instruction in how these socially constructed genres work in the school years has been linked to low literacy achievement levels (Halliday, 1985).

A genre-based theory of language and literacy instruction recognises that the literacy demands of schooling increase and fundamentally change over the years of schooling so we cannot expect the basic generalised language and literacy skills gained in the lower primary years to be sufficient for later years (Cummins, 2015). Therefore, reading is not "done" with

in the primary years, and numerous reports indicate that there are declines in literacy levels as measured by national tests in the secondary years (Fang & Schleppegrell, 2010a; Shanahan & Shanahan, 2008). For example, Shanahan and Shanahan (2008, p. 43) observe of students in the U.S.: "Early learning gains, instead of catapulting students toward continued literacy advancement, disappear by the time these students reach eighth grade". They categorise approaches to literacy instruction where the emphasis is heavily resourced towards early years instruction on general skills as a "vaccination" conception of teaching literacy (p. 43) which does not appear to be working.

3.4.2.3.2 The relationship between literacy achievement and achievement across the disciplines Studies confirm a correlation between achievements within the discipline areas and achievement in literacy assessments, with literacy levels providing a stable predictor of success in Mathematics and Science (Shanahan & Shanahan, 2008). These links can be found in the statistics of English language learners' results in subject area testing, with national testing in Mathematics in the U.S. showing 71% of English language learners performed below benchmark in Mathematics, compared with 18% of native English language speakers (Beckers & Saal, 2014). Clearly, competency in the English language is a crucial variable in performance in subject areas other than English.

3.4.2.3.3 Literacy across the disciplines

Content based literacy teaching – using Language Arts literacy skills in other discipline areas

Disciplinary literacy – the description of literacy skills specific to each discipline area

This understanding that literacy is key to achievement across the disciplines is not new. In the 1970s it was the focus of a large movement, **content-based literacy instruction**, which is usually credited to the work of Herber (Cook et al., 2011). This movement, popular as *content area reading* in the US, and *literacy across the curriculum* in the U.K. (Carney & Indrisano, 2013; Collin, 2014) and Australia, was primarily concerned with ensuring discipline or content teachers were aware that literacy – reading and writing – was an integral part of teaching content. An important premise of content-based literacy approaches is that reading to learn, and learning to read, are two sides of the same coin rather than one being a precursor to the other.

Content-based literacy instruction places an emphasis on transferring literacy skills developed in the Language Arts class to other content areas (Wray & Janan, 2013), for example, concept mapping, note-taking skills, skimming, and scanning. The approach was hugely popular for many years, but its impact on student learning outcomes has been criticised in more recent years (Fang & Coatoam, 2013; Hillman, 2014; Hynd-Shanahan, 2013; Moje, 2008). Wray and Janan suggest that the teaching of literacy across the curriculum by discipline area teachers has "remained an aspiration rather than a reality" (Wray & Janan, 2013, p. 557). In short, discipline area teachers have not embraced the notion of themselves as literacy teachers.

Moje (2008) suggests the poor take-up of content-based literacy instruction in secondary settings is the result of tackling secondary literacy "from the standpoint of literacy theory, rather than from standpoint of the disciplinary learning theory" (p. 99). That is, a

Language Arts approach has been grafted onto the discipline areas, rather than being an approach that grew from within the discipline to teach the language and literacy specific to the discipline.

Moje (2008) and Shanahan and Shanahan (2008) have led the argument that content-based literacy approaches have not adequately addressed the challenge of helping students access the **thinking** of specific discipline areas, and the ways **language** shapes that thinking. They propose an approach they have termed *disciplinary literacy* (Moje, 2008). This represents a recognition of the specialised nature of literacy within the disciplines (Moje, 2008), which Fang (2012, p. 19) defines as "the ability to engage in social, semiotic and cognitive practices consistent with those of content experts".

Disciplinary literacy recognises that literacy practices are fundamentally different in each of the discipline areas (Fang, 2012), and the language required to fulfil these practices is also identifiably different in each of the disciplines at text, sentence, and word levels. These fundamental language and literacy differences occur because each discipline has developed from specific ways of thinking about the world, and the consequent communication of those thoughts and understandings (Hynd-Shanahan, 2013). That is, literacy within disciplines is a function of the development of that body of disciplinary knowledge – an integral part of the discipline. As a consequence, becoming literate in the discipline areas involves an initiation into the disciplinary community and its ways of thinking, behaving, and communicating – reflective of Gee's notion of Discourse discussed earlier. Literacy is, therefore, not a generic practice to be applied across disciplines, and language is not a generic entity common across disciplines.

Shanahan and Shanahan (2008) completed an empirical study which found scientists, mathematicians, and historians think, read, and write differently from one another, thus presenting a case for the teaching of discipline-specific literacy in schools. Their study found that discipline experts approach reading and writing tasks in quantifiably different ways, and that discipline teachers found many generic literacy strategies were irrelevant to their discipline teaching. Goldman (2012, p. 93) offers a useful example to illustrate the specificity of discipline language and literacy when she observes "specialists reading outside their field of expertise do not display the same complex processing strategies they use within their field of expertise".

For example, in Mathematics the Common Core State Standards describe mathematical language as "abstract, quantitative, logical, defendable and precise". These features of mathematical language are a function of the development of reasoning and thinking within the discipline, rather than post-scripted literacy features. Yet students using generic literacy strategies may read mathematical texts for the general idea rather than pay attention to precise detail (Hillman, 2014). In Science, arguments are presented through empirically tested hypotheses, and claims are critiqued primarily through attention to the validity of the experimental methods (Shanahan & Shanahan, 2008). This is in contrast to History, for example, where historians present arguments based on interpretation of source documents which are contestable (Moje, 2008; Shanahan & Shanahan, 2014). Historians, perhaps more than mathematicians, for example, are keenly aware of bias and, in fact, expect bias when reading. An important part of preparation for reading in History, then, is understanding the allegiances of the author. In Mathematics and Chemistry, logic and proof in a stepped process are requisite (Shanahan & Shanahan, 2014) rather than an initial consideration of the politics of the author. Shanahan and Shanahan (2008) conclude that

these differences "are related to the intellectual values of a discipline and the methods by which scholarship is created in each of the fields" (p. 50).

Literacy across and within disciplines, therefore, cannot be tackled simply through the application of literacy strategies developed in the Language Arts, or augmented by a literacy specialist from the Language Arts (Hynd-Shanahan, 2013). In disciplinary literacy approaches, literacy is the tool rather than the goal (Fang & Coatoam, 2013). Present in a disciplinary literacy approach is a focus on purpose and context – that the literacy activity is in the service of an authentic communicative purpose connected to the discipline itself. To be *disciplinary literate* you must have both knowledge of the content and the ways of thinking and communicating about that content.

Advocates of disciplinary literacy approaches claim that disciplinary literacy approaches are not just important for successful reading of academic texts in the discipline but that they also develop critical thinkers (Billman & Pearson, 2013) (Fang & Schleppegrell, 2010b). Moje (2008) and Gillis (2014) argue that disciplinary literacy enables students to critique literacy practices across disciplines rather than simply replicate them, or "deal" with them.

Fang and Coatam (2013) provide a comprehensive description of the foundational principles of disciplinary literacy:

a. school subjects are disciplinary discourses recontextualised for educational purposes;
b. disciplines differ not just in content, but in the ways this content is produced and communicated. Shanahan (2013) elaborates, explaining that in disciplinary literacy there is an understanding of both content knowledge in the discipline, and discipline knowledge – which is knowledge about how knowledge is created in the discipline;

c. disciplinary practices such as reading and writing are best learned and taught within each discipline; and
d. being literate in a discipline means understanding both disciplinary content and disciplinary habits of mind (that is, ways of reading, writing, viewing, speaking, thinking, reasoning, and critiquing).

In a disciplinary literacy approach, discipline teachers must be active instructors of disciplinary literacy, as they are the discipline experts who utilise the literacy of their discipline in the ways they think, act, and communicate about their discipline (Fang & Coatoam, 2013). This has implications for the professional development and education of teachers, an area which is dealt with in 3.4.2.4, Teacher Knowledge.

3.4.2.3.4 Disciplinary literacy across the years of schooling There is some disagreement as to the most appropriate schooling stage to make the shift from generic literacy to disciplinary literacy. Some propose that middle and high school is an appropriate stage, as this matches a development stage in students' cognition where they move from concrete to abstract understandings of the world around them. However, there is a significant body of research that recommends a disciplinary literacy approach from the primary school (Fang & Coatoam, 2013; Hillman, 2014), with Fang claiming that beyond 9 years of age students have the cognitive capacity to deal with the technicalities and abstractions demanded by disciplinary discourses. This is classically the age when students move from "learning to read" to "reading to learn" – a stage discussed in more detail in 3.5.2.3, Key Transition Points in Language and Literacy Development and Schooling.

Shanahan and Shanahan (2014) claim that by working with discipline-specific literacy in the primary years students will be better prepared for the texts they encounter in their secondary studies. They suggest the students will thus "already have some of the habits of mind needed to interpret them in sophisticated ways" (Shanahan & Shanahan, 2014, p. 639).

Other researchers make a case for apprenticing children into the disciplinary literacies from the beginning of school (Shanahan & Shanahan, 2014), arguing that young children are already developing sophisticated understandings of specialised parts of their world. Certainly genre-based approaches to looking explicitly at texts for specific purposes have been a feature in Australian primary schools for more than a decade and have been an expectation in the national Australian curriculum since 2011 (Billman & Pearson, 2013).

In contrast, some researchers are concerned that disciplinary literacy approaches are both too hard and unnecessary for all students, particularly those who struggle with literacy tasks (ACARA, 2012a). They are concerned that a focus on purely disciplinary-based approaches to literacy, at the expense of more generic reading and writing support, will leave these learners further behind.

Gillis (2014) suggests the problem is not with the notion of disciplinary literacy approaches per se but with the pedagogy for delivering them. She suggests that with appropriate scaffolding all students can be apprenticed into disciplinary literacies. There have also been studies pointing to the effective use of disciplinary literacy approaches for students with general literacy challenges, as well as students learning English as an additional language (Brozo, Moorman, Meyer, & Stewart, 2013), and the CLIL movement points to an increasing enthusiasm for disciplinary literacy approaches in second and additional language teaching contexts.

Fang (2013, 2014) acknowledges that there have not been enough large-scale studies on the implementation of disciplinary literacy in schools to provide conclusive evidence that such an approach is any more effective than more generic literacy approaches. Fang and Hynd-Shanahan (2013) urge researchers and practitioners to continue their investigations. Pedagogies for delivering disciplinary literacy approaches are described in detail in Section 3 of this Literature Review.

All researchers in the field of disciplinary literacy acknowledge some key challenges attached to such an approach: the teachers' capacities to deliver them and schools' capacities to facilitate them. As Moje (2008) concluded in her seminal article on the future of disciplinary literacy, "The integration of literacy instruction in the secondary schools is a complex change process that will require collaboration, communication, and commitment to major conceptual, structural, and cultural changes" (Moje, 2008, p. 105).

In summary, disciplinary literacy approaches and Language Arts literacy approaches to content teaching are not mutually exclusive (Moje, 2008). Generally there is agreement that generic literacy strategies are important, but students need support in knowing which literacy strategies are most useful as they approach discipline-specific reading and writing tasks (Brozo et al., 2013). A combination of the two approaches is recommended by some scholars in order to counter observed deficiencies in both. Collin (2014) suggests that proponents of both approaches overpromise on what they can deliver, observing "strategies approaches underplay differences between content areas" whilst disciplinary approaches "underplay differences between secondary school content areas, university disciplines, and professional workplaces" (Collin, 2014, p. 311). Neither approach precludes addressing these concerns, but both would benefit from investigating how they could resolve them.

3.4.2.4 Teacher knowledge

3.4.2.4.1 A typology of teacher knowledge

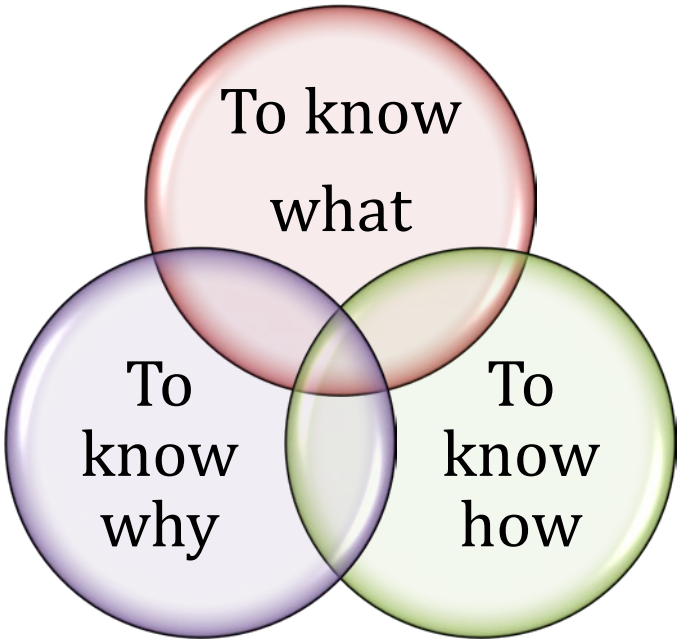


Figure 2 Domains of teacher knowledge.

Researchers have developed a number of typologies of teacher knowledge. Bernstein's description of the vertical and horizontal discourses of knowledge offers a useful starting point for any review of the nature of knowledge (Bernstein, 1999). In Bernstein's model, the horizontal axis is the "know how" which is situated in context and concerned with the practical knowledge required to solve immediate and practical problems. The vertical axis is the "know why", and it typically has some distance from the everyday. Bernstein claims that this distance is important, offering us space to reflect on our "know how" knowledge, and to consider whether our "know how" is indeed adequate or appropriate for the context we are working in. By adding content knowledge to Bernstein's horizontal and

vertical axes of teacher knowledge, we can identify three ways of knowing something: "knowing what", "knowing why" and "knowing how" . This broad framework of "know what", "know why" and "know how" discourses of knowledge provides a useful overlay for domains of teacher knowledge.

With reference to the literature, the following six literacy-teaching knowledge domains can be identified (Adoniou, 2014b):

- knowledge about content – specifically, understanding how the language works in literacy;
- knowledge about theory (Shulman, 1986) – theoretical understandings about teaching literacy;
- knowledge about teaching (Shulman, 1986) – pedagogical understandings of how to teach literacy, including the curriculum documents they must work with in order to plan and assess;
- knowledge about their learners (Lenski & Nierstheimer, 2006) – the literacy learning needs of the children in the teachers' classrooms;
- knowledge about school context – the school and community they teach in and how that may impact upon the literacy-teaching strategies they require, and the ways in which they are required to plan, report, assess, and administer their literacy teaching; and
- knowledge about the sociocultural politics of teaching literacy.

3.4.2.4.2 Teacher knowledge gaps – content Repeated throughout the literature on effective literacy teaching is a concern for the capacity of teachers – particularly discipline area teachers – to teach the literacy of their subject areas (Collin, 2014, p. 311) and, equally, the capacity of literacy specialists to understand the discourses of the disciplines in which they have no expertise (Carney & Indrisano, 2013; Fang, 2014; Fang & Coatoam, 2013; Fenwick, 2010; Goldman, 2012; Hillman, 2014).

Due to the increased expectation that all teachers are teachers of literacy – see for example the preambles to the Common Core State Standards in the U.S., and the Australian curriculum – it has now become an imperative that all teachers develop their language and literacy knowledge.

Successful disciplinary or content literacy teaching "requires scaffolding and mediation by teachers who know the content well and understand the role that language and literate practice play in producing knowledge within it" (Hynd-Shanahan, 2013, p. 103). As such, it is content area teachers who are in the best position to support students' academic language development. However well positioned they might be, the evidence overwhelmingly suggests they are ill-equipped to do so.

Spear-Swerling and Cheesman (2012) make the important point that simply being literate is not adequate preparation for teaching literacy. Being literate is not the same as understanding how the language works and being able to use that knowledge to teach others. Numerous accounts of teachers note a lack of content knowledge about how the language works – most particularly the basic constructs of the language (Schleppegrell & O'Hallaron, 2011). The consequences of a lack of content knowledge in teaching literacy can be serious, with Shulman (1987) indicating that lack of content knowledge results in narrowed and

regressionist pedagogies as teachers resort to replicating own past experiences with instruction in language. This hampers their ability to teach and assess literacy effectively, and in particular to meet the needs of children who are struggling in literacy (Adoniou, 2014c; Alderson & Hudson, 2012; Hadjioannou & Hutchinson, 2010; Moats et al., 2010; Washburn, Joshi, & Cantrell, 2011; Wong, Chong, Choy, & Lim, 2012). Spear-Swerling and Cheesman (2012) suggest that without good content knowledge in the area of literacy "teachers may provide inadvertently confusing instruction to children"(p. 1692). Washburn et al. (2011), in their study of 91 new teachers, found that pupils had reduced literacy outcomes when given explicit instruction in language structures by teachers who themselves had a limited understanding of language structures.

3.4.2.4.3 Professional development for teachers Fang (2014) suggests that teacher literacy knowledge is best developed by placing teachers in like cohorts, that is, with teachers teaching similar subjects to themselves. Secondary teachers should be in cohorts based around their discipline areas so that they can focus on developing the knowledge specific to their discipline. This is more likely to encourage discipline teachers to adopt literacy strategies, as it allows them to "explore the literacy–content connections in greater depth and in more substantive, discipline-specific ways" (Fang, 2014, p. 445).

Spear-Swerling and Cheesman (2012, p. 1716) found that teacher knowledge could increase significantly with focused professional development for both in-service and pre-service teachers, which could have immediate impact upon the effectiveness of their interventions for underachieving children. The researchers conclude that content knowledge should be built more effectively during pre-service teacher education, and this professional learning should continue as the teachers move into the classroom. In other words, content

knowledge should be built across the continuum of becoming a teacher, from pre-service to in-service. In her study of a large secondary school in South Australia with a 63% EAL student population, Fenwick found that 45% of the students felt they did not receive adequate language support to enable them to meet the assessment demands of the school (Fenwick, 2010). Following a subsequent teacher professional development programme aimed at providing the teachers at the school with skills in recognising and explicitly teaching the language demands of their subject areas, 88% of students reported they now felt they had the language understanding required in order to read and produce the required texts.

3.4.2.4.4 Teacher Knowledge about Learners As well as knowing their content, a successful teacher of literacy must also know their students. To know students requires knowing their cognitive capabilities as well as any sociocultural impacts upon their learning; for example, whether they speak the language of school as their first language or whether their home experiences are congruent with school experiences.

All teachers must know their learners and successfully identify the ZPD (Vygotsky, 1978) for each learner. As well as identifying the content within that zone, teachers must also use language that is comprehensible to the learner, and strategies that are suited to the learner.

Learners have different literacy and language learning needs at different stages of development; the needs of a Kindergarten child are different from the needs of a child in the upper primary years. These age and stage based differences are discussed further in Section 2 of this Literature Review. However, beyond a natural developmental difference in what students can do, students may also have different language development journeys due to

congenital or environmental influences. For example, they may have an identified specific language learning difficulty related to brain structure. As students with cognitive developmental delays are increasingly mainstreamed, the classroom teacher must know how to manage learning for these children. Research indicates that teachers do not receive adequate teacher preparation to enable them to work effectively with these children (MacBlain & Purdy, 2011; Spear-Swerling & Cheesman, 2012).

There is also a group of students whose learning is delayed by environmental rather than cognitive factors. For example, they may have had a history of environmental trauma (e.g., a student with a refugee background) or severe economic disadvantage which impacts upon their language learning progression. Children from low socio-economic backgrounds and children who speak an additional language or dialect are likely to have different needs simply because the language they speak at home is different in some ways from the language that is valued in the classroom. It is these cohorts of learners who are over-represented in the underperforming cohort of learners as measured in national literacy teaching, a phenomenon noted in the U.S. (de Jong & Harper, 2005) and U.K. (Demie, 2012). Whilst their numbers grow in mainstream classrooms, their literacy outcomes remain poor. Therefore, it is crucial that teachers understand the specific needs of different cohorts of learners and the literacy teaching they require. As MacBlain and Purdy (2011, p. 383) summarise, "teachers are now having to work differently and in ways which demand that they have a greater understanding of the complex needs of a growing number of children".

3.4.2.4.5 Teacher knowledge gaps – learners Research finds that in-service teacher knowledge is inadequate to meet the linguistic and sociocultural needs of these learners (Thomson, De Bortoli, Nicholas, Hillman, & Buckley, 2010). De Jong and Harper (2005, p. 113) advise "Good teachers also accommodate student

differences by getting to know their students at a personal level." Teachers must both understand the diversity of their learners and use that knowledge effectively (Cajkler & Hall, 2009; de Jong & Harper, 2005; MacBlain & Purdy, 2011; Spear-Swerling & Cheesman, 2012). As de Jong and Harper (2005) urge, "Good teachers understand and accommodate differences, understanding that they must try to avoid stereotypes and inappropriate expectations or interpretations of student behaviour"(de Jong & Harper, 2005, p. 113).

In order to meet the language learning needs of different learners, teachers must understand how language is acquired by first, second, and additional language learners, and be able to choose learning strategies that meet those specific needs. In particular, Cummin's (2000) differentiation between CALP and BICS is a crucial understanding, as discussed earlier in this review.

3.5 Section 2 – Language and Literacy Development Over the Schooling Years

3.5.1 Introduction

Most descriptions of language and literacy development are "developmental" – founded in behaviourist or nativist theories that there is a natural sequence of learning which is resistant to external intervention. From a social interactionist or sociocultural theoretical perspective these staged developmental descriptions of language learning do not adequately take account of the diversity of meaning-making experiences and symbolic repertoires of the learners in any given classroom, and the interactions and supports they may receive from others. By failing to take a full account of the learners' lived experiences across all meaning-making systems, educators may be not only ignoring important pathways into literacy but also failing to recognise potential gaps in students' experiences which may be filled by attentive instruction.

3.5.2 Frameworks for describing language and literacy development

Halliday (1985) describes two important stages in language development occurring during schooling years that inform the ways we consider literacy instruction.

In stage 1, between the ages of 4 and 6, children develop an ability to move to abstract representations as they realise that not all the world is perceived through direct concrete representations. This allows them to understand the abstract notion of applying print to sound, and marks the beginning of print literacy – the corralling of language to communicate with others.

In stage 2, between the ages of 9 and 14, children move from the grammar of written language to the language of the content areas. That is, they can understand that not only is spoken language different from written language but written language also changes according to audience and purpose.

Typically stage 1 is marked by the following characteristics (de Jong & Harper, 2005, p. 112):

- Preschool children learn through interaction with experienced others that the written word conveys meaning, and they attempt to replicate that meaning themselves.
- They learn to reproduce letter shapes, and these are initially mixed with the representations of other symbol systems, like numbers and drawing schemata, before they are able to separate letters from other symbols. This use of conventional letter forms does not indicate an understanding of the written symbol system and its connection to sound.

- As they tackle the task of converting talk into print, children must understand the concepts of print (Campbell & Green, 2006; Harris, McKenzie, Fitzsimmons, & Turbill, 2003; Winch, Johnston, March, Ljungdahl, & Holliday, 2006). In English this means understanding:
    - the temporal sequencing of speech is represented in writing by left to right, return left, and top to bottom spatial sequencing on the page;
    - speech is represented in writing by combinations of letter strings; and
    - words in speech are represented in writing by grouping the letters on the page using spaces to separate the groups.
- Beyond this they must understand that we organise those utterances through units we call sentences, which, in turn, we manipulate to give the reader further understanding of the time, manner, and place of our messages, and this is achieved through the organisation of phrases and clauses.
- After this they become cognisant of the possibility of the shift from a spoken to a written grammar, that is, that written literacy need not simply be talk written down, although this requires substantial external intervention.

In the second crucial stage of schooling, children move from the grammar of written language to the language of the content areas. They learn the ways in which written language changes according to audience and purpose. Fang (2012) contends that this marks a readiness for disciplinary literacy instruction. He describes the development of language over these stages as basic, abstract, and metaphoric. These three language functions build up and interweave as school progresses (see Figure 3 below). Success in school can thus be

predicted by a student's capacity to work with all three types of language to produce both generic and disciplinary literacy products.

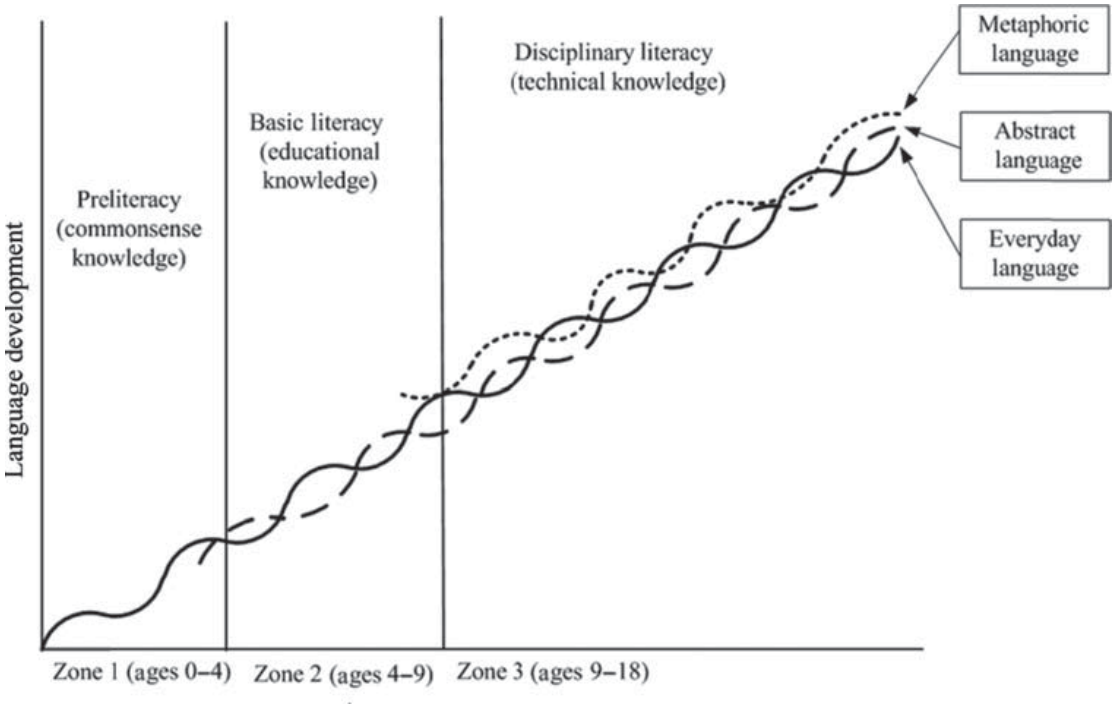


Figure 3 Development of language over school stages (Fang, 2012, 22).

Shanahan and Shanahan (2008) similarly characterise literacy development over the schooling years as one of increasing specialisation, moving from basic literacy through to intermediate literacy, and then to disciplinary literacy. The more technical and discipline-specific the task, the more specialised language and content knowledge are required. As the demands of school increase, the basic and intermediate literacy skills of decoding and general comprehension are no longer sufficient. Along with more technical and abstract language, students must also learn to analyse language to enable them to see alternative perspectives and critique viewpoints.

Christie and Derewianka (2008, p. 21) provide an overview of how language shifts in complexity over described literacy development trajectories.

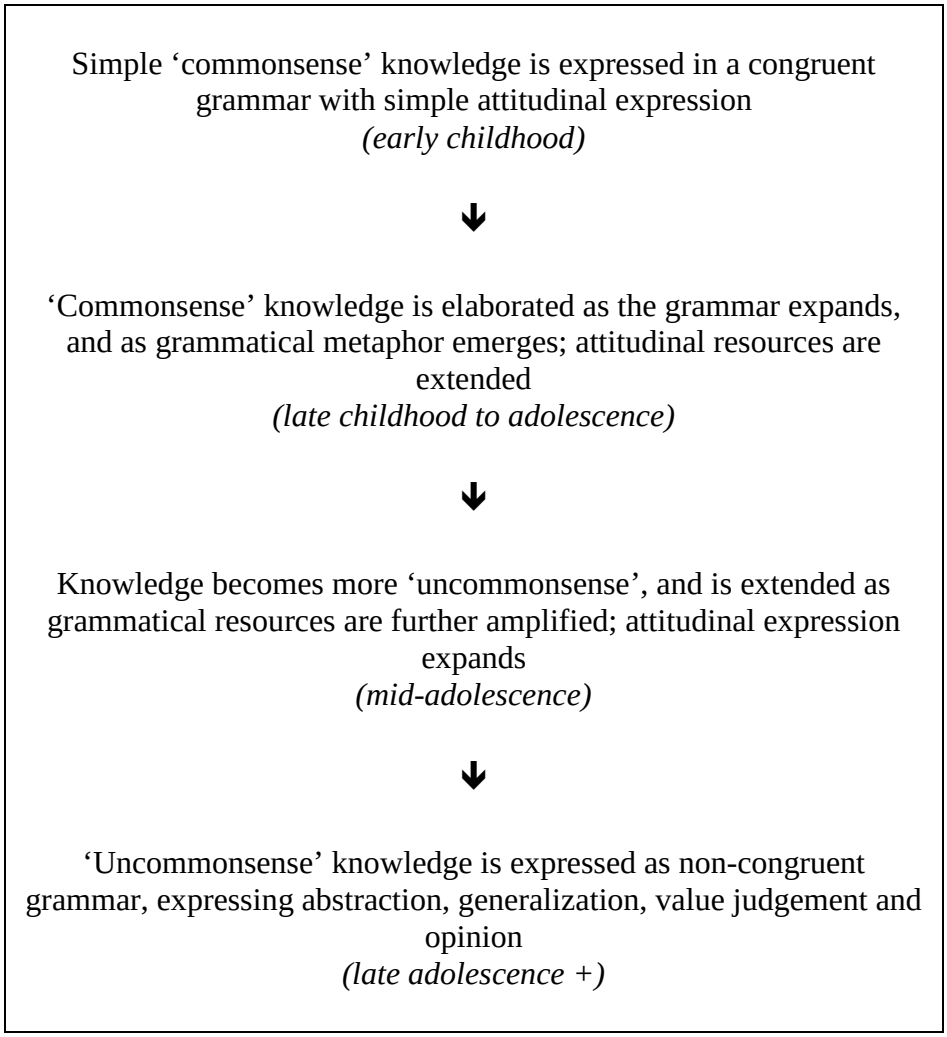


Figure 4 How language shifts in complexity over described literacy development trajectories (Christie & Derewianka, 2008, p.21).

To add further complexity to these descriptions, specialised academic language skills differ across the disciplines. So a student may be proficient in the disciplinary literacy of English but not in Biology or Mathematics.

See **Appendix A** for a description of specific ways in which language changes across disciplines and over the years. Examples are given of discipline-specific language and literacy practices for Year 2 and Year 8.

3.5.2.1 Literacy and language development trajectories There are differing approaches to how growth in language and literacy development is represented within a curriculum scope and sequence. A developmental approach is common, where growth in language complexity over the years of schooling is represented in a hierarchical fashion (Williamson, Fitzgerald, & Stenner, 2013). For example, in writing development curriculum objectives may begin with word-level descriptors in the first year of schooling – understanding sounds and letters – before moving on to simple sentence-level descriptors and finally towards text-level outcomes. This is most commonly referred to as a "bottom up" approach to literacy education (Wang, 2015) and is more closely aligned with behaviourist theories. An opposing description of language and literacy development is the "top down" approach (Wang, 2015), where instruction starts with whole texts, and the texts are then unpacked to work more specifically at sentence and word level. This approach has been more closely aligned with nativist theories. See Table 1 in Section 1 for a summary of the relationships between literacy approaches and theories.

Vygotsky (1978), the informing theorist of social interactionist approaches to literacy, makes the observation that framing literacy development in linear ways is problematic. He claims that writing, for example, as a process, defies systematic description as it lacks linear continuity. Dyson (1992, p. 15) agrees, criticising hierarchical approaches to literacy as simplistic, saying that descriptions of stages of development have focused on "surface manifestations of writing and not on the complex underlying reality" and that "there is no linear progression in written language development".

Dyson further argues that a linear view of the writing process and its translated practice fails to come to grips with the complex relationship between the various subskills of

writing, as well as failing to recognise the semiotic repertoires children bring with them to the learning. She says of writing:

> Its development is linked in complex ways to the whole of children's symbolic repertoires; its evolution involves shifts of function and symbolic form, social give-and-take, as children explore and gradually control new ways to organise and represent their world and to interact with other people about that world. (Dyson, 1992, p. 15)

Luke and Freebody (1999) propose an alternative framework for capturing the language and literacy development of learners, one which involves an interaction of top down and bottom up approaches, which they call the "four resources" model. This model is described in detail in Section 3 of the Literature Review, but essentially it recognises that readers and writers access both meaning and context (top down), as well as attend to detail (bottom up) when they engage in literacy practices. Thus, the four resources model combines the notion of a developmental approach to the teaching of literacy with using a model of language that describes literacy as a socially mediated activity. This theoretically bilateral approach to language and literacy teaching reconciles a theoretical understanding of language as interactionist – neither solely within the learner and impervious to intervention, nor solely external and dependent wholly on expert guidance. Indeed, neuroscientific understandings of the brain support this duality, with the research clearly finding that social experience from the very youngest ages alters the natural trajectory of development in the brain (Kuhl, 2011).

3.5.2.2 Language and literacy developmental trajectories in multilingual learners

This understanding of language acquisition as socially constructed, and therefore affected by interactions and interventions, is particularly pertinent when the students we teach are learning in school through a language which is not their mother tongue. Whilst frameworks exist for describing the ways in which additional languages may develop in learners (e.g., the Australian curriculum's English Language Learning Progression, described in more detail later in this section under the heading Language and Literacy Continua) students' progress in the language of school instruction is highly dependent upon the extent and quality of teacher interventions. The length of time required to learn an additional language is variously estimated to be between 4 and 10 years (Cook et al., 2011; Demie, 2012; Hakuta, 2000). The reason for the wide disparity is the wide range of variables, including the effectiveness of instruction.

3.5.2.3 Key transition points in language and literacy development and schooling

Alongside the trajectories of language and literacy development lies another trajectory: the educational journey imposed by the structure of schooling itself, that is, the ways students are moved through the educational system and the transitions from one stage of schooling to the next.

Three key structural transition points:

1. early childhood to primary education;
2. primary to secondary education; and
3. secondary to tertiary education or the workplace.

Transitions in education are often characterised as crucial events in a student's school success. Researchers note three key transition points in a student's education. They are classically associated with the move from early childhood to primary contexts, then from primary to secondary contexts, and finally into tertiary education or the workplace (Kinkead-Clark, 2015). These transitions are usually associated with a change in curriculum, the way it is delivered, or even location of delivery via a geographical change in school environment (Topping, 2011). Transitions also correlate with relationship changes, as peer groups often change, teacher–student ratios change, and parental involvement in school activities shifts (Coffey, 2013).

Developmental changes also coincide with school transition points, with increased cognitive activity marking the move from preschools to schools, and increased hormonal activity marking the move into high schools (Kinkead-Clark, 2015). All of these factors have been given some prominence in the literature as affecting academic performance, although the extent and specificity of the impact of each factor is much harder to ascertain from the research (Malaspina & Rimm-Kaufman, 2008).

Topping (2011), in a review of 88 studies concerning the transition from primary school to secondary school, found that students and teachers have different concerns at this transition point: students are concerned about the social and emotional impact of moving into a new school sector, and teachers are concerned about students' academic capabilities. Others have found that students are also concerned about the ability to meet the academic demands of high school. For example, Coffey (2013), in a study of new transition pathways introduced across a school system in Western Australia, reports that students "need more explicit instruction and time to consolidate their learning" (p. 263).

In the transition from early childhood to primary settings, parental and teacher concerns appear to be reversed, with parents concerned about academic success (children knowing their numbers and letters) and teachers concerned about social and emotional competencies (Hirst, Jervis, Visagie, Sojo, & Cavanagh, 2011; Kinkead-Clark, 2015).

3.5.2.3.1 The links between transitions and academic success Malaspina et al. (2008) and Duncan et al. (2007) conducted two of very few longitudinal studies across a large sample number to determine key drivers of academic decline noted at key transition points in schooling. Duncan et al. (2007) found that Kindergarten mathematics, reading, and attention skills were the most predictive of academic success in later years of schooling. The study by Malaspina et al. confirmed that low academic performance in the early years was predictive of low academic performance in the later years, but more so for students from disadvantaged backgrounds (Malaspina & Rimm-Kaufman, 2008; Topping, 2011). Both studies suggest that interventions in the early years could mitigate these predictable trajectories. Duncan et al. (2007, p. 1444) observe "we could not attribute most of the variation in later school achievement to our collection of school-entry factors, so the potential for productive interventions during the early school grades remains".

The literature on literacy achievement generally finds there is stability over time – that is, students who perform well academically in the early years of school tend to perform well in later years. The same is true for the low performers, with low academic achievement in reading and writing in the early years a strong predictor of academic achievement in the later years. Typically, students who are already performing poorly in literacy prior to the transition will continue to perform poorly (Malaspina & Rimm-Kaufman, 2008; Serbin et al.,

2013). That is, literacy skills are a good predictor of academic success, or otherwise, in secondary school. Transition points appear to merely exacerbate existing gaps.

Whilst there may be temporary setbacks for mid to high academic achievers, after transition these are usually ameliorated in the first six months. Low academic achievers tend to fall behind. Thus, transition points are high risk points for students who are already underachieving (Malaspina et al., 2008).

3.5.2.3.2 Closing the gap at transition points Topping's review (2011) of a number of studies on secondary transitions reports research indicating that the first year of study upon transition can result in an attainment dip for up to 40% of students. Whilst many reasons are proffered for the dip, including all of the practical challenges of being in a new environment outlined above, Topper suggests there are both academic and social emotional factors in play and both must be addressed by schools wishing to smooth the transition.

Both Malaspina and Duncan's longitudinal studies identify the difficulty of accurately identifying the specific enabling features of effective interventions, as successful interventions often address multiple factors, for example, behaviour, self-esteem, and reading skills. Also missing is a close investigation of the interrelatedness of these predictors of success. For example, does a student's capacity to pay attention mean they are more likely to heed instruction when learning to read, or does their ability to read mean they are more likely to pay attention to the teacher's instructions related to the book?

Whilst there is a raft of research supporting the view that trajectories of achievement are set from as early as the first year of schooling, the research is not at all in agreement that this is a natural inevitability. Low-achieving children tend to be from specific cohorts with

one or all of the following characteristics: low socio-economic, parents with minimal education, and second or additional language learners. These characteristics contribute to their capacity to work successfully with the language of school, because of lack of access to that language or limited repertoires in that language, for example, limited vocabularies. Teacher instruction has been shown to have the most ameliorating effect upon reducing those external disadvantages and improving schooling outcomes for students (Hattie, 2009).

Two key literacy transition points:

1. the fourth grade slump; and
2. the transition from primary to secondary school.

3.5.2.3.3 The fourth grade slump The literature on literacy development provides a case for a fourth key transitional point: the so-called fourth grade slump. The fourth grade slump has classically been assigned to the shift from learning to read to reading to learn, which occurs around the end of the third grade at school, aligning with descriptions provided earlier in this section of the shift to more academic language and abstracted knowledge.

Significantly, Duncan et al. (2007) find that, although both maths and reading are accurate predictors of success in later years, the association between early reading success and later reading success declines as schooling goes on. This provides further evidence for the fourth grade slump and prompts an investigation into transitions which are less to do with the structures of schooling (as per the three transitional points outlined above) and more to do with the cognitive demands of schooling, in particular, the shift in literacy demands.

U.S. national testing reports that almost one-third of students fail to achieve basic reading competency in the fourth grade (Goldman, 2012). This is likely due to the shift from easy and predictable texts to more complex texts, which often uncovers a lack of comprehension. This is the time in students' schooling when the focus is no longer on learning to read but on reading to learn.

Other contributing factors may be reduced vocabulary through a lack of exposure in both oral and written language (e.g., a diet of controlled texts offers a limited vocabulary) (Goldman, 2012), as well as a lack of exposure to "literate language" – that is, language which differs syntactically from the informal registers of spoken language and the constructed language of levelled readers and less complex texts (Adoniou & Macken-Horarik, 2007).

Cope and Kalantzis (2009) suggest an inevitability about the fourth grade slump because of an undue focus on phonics instruction in the earlier years. They suggest that back-to-basics approaches which advocate the teaching of phonics are predicated on the efficacy with which phonics instruction can be assessed. They observe:

> The horizons of phonics are set so low and the results so easy to measure that it is not hard to show improved results, even amongst children who come from communities and cultures that historically have not achieved at school. (Cope & Kalantzis, 2009, p. 183)

The fourth grade slump has been noted as particularly prevalent for students for whom the language of instruction in the school is not their first language (Møller et al., 2014).

3.5.2.3.4 Primary to secondary transitions Beyond the fourth grade slump, the transition from primary to secondary schooling has been identified as a critical period for general schooling success (Serbin et al., 2013), where there is a pattern of academic decline in some students (Benner & Graham, 2009).

Research shows that significant numbers of secondary school students continue to have literacy struggles in high school (Fang & Coatoam, 2013; Moje, 2008). In particular, they struggle to read, understand, and produce written texts that become increasingly complex as year levels progress. These research findings have been a key impetus in the federal initiative in the U.S. to recalibrate curriculums through the development of the Common Core State Standards.

The shift from primary to secondary schooling usually entails a new curriculum and a new set of skill requirements that accompany that new curriculum. The shift from generic and generalised reading to discipline-specific reading and writing generally occurs with the move from primary to secondary school. Whilst the shift from "learning to read" to "reading to learn" prompts a slump in the achievement of some students in the fourth grade, secondary school then marks the requirement of a more nuanced "reading to learn". School reading and writing activities become directed at learning to be someone beyond the school context, to become a literate citizen and worker (Fenwick, 2010).

This is also usually the time when students shift from the generalist primary curriculum to the specialisation of different disciplines through the school day taught (ideally) by discipline specialists (Shanahan & Shanahan, 2014). These are discipline specialists who have not historically been concerned and trained in literacy teaching, but who are, rather, more focused on the teaching of content (Fang & Schleppegrell, 2010b).

Malaspina and Rimm-Kaufman (2008) observe that at this time, when texts become more complex and students require more support to read them, instructional support becomes less frequent. Wray and Janan (2013) have characterised this paradox as "a retreat from print", where texts become more difficult and, as a consequence, students who are less able read less and less. This retreat from print exacerbates their lack of achievement in school. Chadbourne (2001) in Coffey (2013) suggests as a consequence "the learning of early adolescents can falter when it really should be accelerating" (p. 263).

3.5.2.4 Text complexity Key to addressing the academic challenges presented by each of the key transition points from early childhood education, to primary education, and then into the middle years of schooling is an understanding of how the language and literacy demands change at each of those transition points.

3.5.2.4.1 Text complexity and the Common Core State Standards in the U.S.

Students' capacity to work with complex texts is the key predictor of their success and preparedness for further education or careers (Wray & Janan, 2013). A central premise of the Common Core State Standards in the U.S. is that monitored and explicit attention is paid to increasing the complexity of texts that students read at school (Hiebert, 2010).

Studies in the U.S. have found that, whilst career and college reading is becoming more demanding (Beckers & Saal, 2014; Williamson et al., 2013), the texts the students produce and read at school have reduced in complexity over the decades (Hiebert, 2011). To counter this, the Common Core State Standards in the U.S. mandates an increase in text complexity equivalent to one year level, beginning from Years 2 and 3 (Hiebert, 2011). It has been estimated that this is the starting point required in order to achieve an overall

increase in text complexity by the time the students graduate, giving them the requisite skills and experience to deal with higher education and workplace texts. The motivation is to counter the finding that half of the entrants to higher education in the U.S. require remedial literacy instruction (Hill, 2011).

Whilst some educators are concerned that increasing text complexity in the younger years requires too much of young brains, neuroscientific investigations suggest that the young preschool brain is capable of more complex tasks than it has often been given credit for (Kuhl, 2011, p. 139).

3.5.2.4.2 Text complexity and social interactionist approaches As discussed earlier, social interactionist theories of language acquisition offer tools for understanding text complexity. From this theoretical perspective, the text itself does not hold the complexity. Rather, the complexity lies in the transaction between reader, text and context (Williamson et al., 2013). Texts need not be solely traditional print literacies and text books but may include journals, newspapers, op-eds and online material which combines multiple modes. Complex texts are authentic texts which "offer new language, new knowledge and new modes of thought" (Hill, 2011, p. 2).

3.5.2.4.3 Text complexity and language Language is a typical marker of text complexity. Texts become more complex as the ideas they communicate become more abstract and the content more technical and specialised. Importantly, as Fang (2012) notes, these complexities are not there to trip up or exclude others (although this may indeed be what happens) but "have evolved to meet the needs of particular disciplines" (p. 30).

Grammatical and cohesive devices are key factors in determining text complexity. Transparent cohesion aids struggling readers (Hiebert, 2010), but cohesive devices become more opaque and sophisticated as texts grow in complexity. Grammatical intricacy also increases with increasing numbers of multiclause sentences which are harder to read and place a burden on working memory (Fang & Pace, 2013), and with which struggling readers classically struggle.

Lexically dense texts – those with a higher number of content words per clause – also present more challenges for the reader, and studies clearly indicate that texts become more lexically dense as students move through the schooling years (Christie & Derewianka, 2008). Alongside lexical density is the nature of the words. As topics become more specialised and abstract, vocabulary begins to appear in specialist forms or in unexpected metaphoric ways. For example, "*Find* the value of x" does not require the learner to simply look for something but to complete an algorithm. *Table* can mean *times table*, or a *table of values* in Mathematics whilst having other meanings outside the classroom and in the other discipline areas, for example, *timetable, water table, table and chair*, to *table a report* (Adoniou, 2014a).

Categories of vocabulary complexity

Tier 1 – basic vocabulary usually found in everyday spoken language

Tier 2 – high frequency words but more likely to occur in written texts

Tier 3 – low frequency words which are context specific; associated with the disciplines.

Typically children from additional language backgrounds, as well as first language speakers from low socio-economic backgrounds, enter school with smaller vocabularies (Konishi et al., 2014). Attention to vocabulary development in the language of instruction becomes crucial, as vocabulary is key to both comprehension and the production of literate texts (Carney & Indrisano, 2013). This becomes increasingly important the more specialised the literacy and the content become, as students have to learn both the words and the concepts they represent. Researchers have categorised vocabulary into three tiers: tier 1, which is basic vocabulary used in everyday speech; tier 2, which uses high-frequency words mostly encountered in written texts; and tier 3, which uses low-frequency context-specific words. Tier 3 words are associated with the disciplines and success in the later years of schooling (Bintz, 2011).

Measuring text complexity

Quantitative measures – algorithmic measures of sentence length and word decodability

Qualitative measures – collation of structural features (e.g., genre traits) and language conventions (e.g., figurative, colloquial, or technical language) with reference to the background knowledge of

3.5.2.4.4 Quantitative measures of text complexity Deciding the complexity of a text has traditionally been achieved through quantitative measures of the rarity of the words used and the lengths of the sentences used. These algorithmic approaches, used for many decades (Wray & Janan, 2013), permeate early reading material in schools in many countries to produce levelled readers. Quantitative measures such as

> Lexile Scales (Fisher & Frey, 2014) guide students towards the books they should be able to read. Their influence remains strong and is indicative in any classroom using a published reading scheme which levels readers, for example, the extremely popular PM Reading Scheme, and Fountas and Pinnell's Guided Reading scheme. However, it has been observed that a decade of levelled reading lists has not increased reading levels (Hill, 2011), so identification of text complexity in and of itself does not equate to improved instruction and student learning outcomes.

Three key reasons are proffered in the literature as to why the levelling of texts has not supported improved levels of literacy in schools.

First, guiding children to what they can read does not push them (Fisher & Frey, 2014) or their teachers. Fang and Pace (2013) suggest that when books are levelled in this way teachers unnecessarily narrow their choices of texts to work with students, forgoing pedagogies that will scaffold students into more complex texts and inhibiting them from using "more relevant and timely resources" (p. 104). We learn when we are working with texts a little beyond our capability, as described by Vygotsky and his ZPD. Measures of text complexity simply assign numbers to a book. The matter of deciding "optimal difficulty" for each student remains (Fisher & Frey, 2014, p. 389).

Second, quantitative measures take account of the book, not the reader and the experiences, knowledge, and motivation they bring to the task of reading the book (Williamson et al., 2013). The literature roundly criticises the capacity of quantitative algorithms to accurately predict complexity (Hiebert, 2010). For example, words in narrative tend to be frequently repeated, whilst grammatical structures may be challenging. Or, in a narrative with a lot of dialogue, internal or external, sentences may be short but require

inference. For example, Hemingway's use of short sentences in *The Old Man and the Sea* gives it a Lexile scale suitable for primary students; however, its themes and rhetoric structures beyond the sentence level mean it would be difficult for primary students to read with comprehension.

Overall, narratives tend to be underestimated by quantitative readability measures, and non-narratives tend to be overestimated because of their rare vocabulary (Wray & Janan, 2013) – vocabulary which is often pre-taught or connected to context and therefore not as challenging as the measures imply. In addition, readability formulas are applied to excerpts of text and do not account for the wide variability in any given text (Hiebert, 2010).

Third, an overemphasis on algorithms to determine text suitability may hinder students in their reading rather than help them, because it can reduce engagement and motivation to read, as publishers produce texts that manipulate language to meet readability formula rather than focus on the text and the reader. Levels also dissuade teachers from allowing students to choose books of interest to them (Gamson, Lu, & Eckert, 2013).

The research suggests that teachers rely on these limited views of what constitutes text complexity, referencing the quantifiable measures of decodable vocabulary and short sentences which predominate in commercial reading schemes (Fitzgerald et al., 2015). Fitzgerald et al. (2015) found in their recent study of 90 primary school teachers across 33 U.S. states that their estimations of text complexity did not include text-level or discourse-level markers, nor did they rate the students' own background knowledge as a significant contributor to text complexity.

Williamson et al. (2013) argue that describing the growing language demands through quantitative measures of text complexity are inadequate for responding to the variety of

contexts that schools operate in, and individual development patterns within students themselves. As a consequence, research in the past several years has focused on developing more nuanced measures of text complexity which ameliorate the three criticisms described above.

3.5.2.4.5 Qualitative measures of text complexity The research around qualitative measures of text complexity begin with the premise that text complexity is a function of the reader, the context, and the text itself (Wray & Janan, 2013) and so measures must take into account all of these factors. This approach is reflected in the Common Core State Standards recommendations on measuring texts complexity. They recommend that text complexity be measured in a tripartite manner: quantitative measures, qualitative measures, and matching the reader to the task (Hiebert, 2010).

Qualitative measures are further divided into:

a. levels of meaning (literal, implied and inferred);
b. structural features (genre traits);
c. language conventionality (for example, ambiguities, figurative language, technical, colloquial or regional or archaic language); and
d. knowledge domains – the cultural, technical or background knowledge required for the text (Glaus, 2014).

See **Appendix B** for a table describing qualitative measures of text complexity.

Common Core State Standards recommends that more weighting be given to qualitative measures over quantitative ones. These expanded markers of text complexity open space for doing more with text than simply decoding them – as Glaus (2014) suggests , it creates “space for new and exciting conversations about texts” (p. 408).

3.5.2.5 Language and literacy continua

Concern over declining literacy standards in countries throughout the OECD has resulted in governments in many countries reviewing the ways in which literacy is taught in schools (Collin, 2014; Wray & Janan, 2013) but also prompted governments to redesign or implement national standards or curriculums for the teaching of literacy. In particular, countries like Australia, the U.K., and the U.S. have developed new national curriculums or core standards which have been designed to describe more explicitly what should be taught in literacy programmes. These curriculums and standards are nations' efforts to describe what their youth should know and be able to do.

Language and literacy continua not only provide a guide for instruction but also set benchmarks for achievement. They give teachers and students a description of what is expected at a particular year level or stage in learning. They are particularly useful for checking for achievement on either side of transition points, where student progress is typically vulnerable.

3.5.2.5.1 Case study of a new national curriculum – Australia

Australia has recently released its first national curriculum, and it is reviewed here as an example of how nations are currently approaching the task of describing a scope and sequence of how language and literacy is taught and assessed.

Description of the development of the target language

In the Australian curriculum, language and literacy presents itself in several places. The English curriculum is divided into three strands – language, literacy, and literature – reflecting the important difference between language and literacy. However, literacy is also

presented as a general capability that runs across all disciplines – this is a continuum that describes literacy as incorporating two overarching processes:

- comprehending texts through listening, reading, and viewing; and
- composing texts through speaking, writing and creating.

Both processes are then described according to four language knowledge categories:

- text knowledge;
- grammar knowledge;
- word knowledge; and
- visual knowledge.

Description of the development of additional language skills

Significantly, the Australian curriculum also provides a description of the language learning progression of English as an Additional Language or Dialect (EAL/D) students across four phases: Beginning, Emerging, Developing, and Consolidating (ACARA, 2014).

Students who have come to Australia having attended school in their home country, and with literacy skills in another language, will move more quickly through the beginning phases of English language learning. However, those who come to Australia with disrupted schooling or no schooling at all, and with limited literacy skills in their first language, will learn English in the upper range of time required to learn English. This linking of a description of language learning progress to a description of curriculum content progress is unique in anglophone countries – and possibly other countries – and is worth highlighting in

this Literature Review as a potential resource for IB educators working with additional language speakers.

Descriptions of student achievement to support curriculum development

Exemplars or illustrations of practice of typical literacy practice at any particular year level – see the Scottish and Australian curriculum websites for examples of annotated work samples – are increasingly used by education systems as supports for teachers in their assessment of student learning. Importantly however, these exemplars are usually examples of achievement of mother tongue speakers, and so, whilst they often illustrate content knowledge, they usually also illustrate an assumed knowledge of the language of instruction.

Examples of achievement standards that account for both content and language knowledge are rare. Usually, two sets of achievement standards operate for students whose mother tongue is not the language of instruction. Firstly, they must perform against the content-focused standards their mother tongue peers are also working against. Secondly, they are sometimes required to perform against language proficiency tests. In the U.S. data from both these sources combine to decide what constitutes a typical level of English proficiency. That is when English language proficiency levels reach the point where 50% of that cohort are also achieving in the content assessments (Cook et al., 2011).

In Australia attempts have been made to provide illustrations of student work that account for both content development, as described in the national mainstream curriculum, and additional language development, as described in the national English language learning progression. See this link (ACARA, 2014) for video examples of classroom practice that are annotated both for the age-appropriate curriculum content they illustrate and for the stage of language learning the child demonstrates.

3.6 Section 3 – Pedagogical Perspectives in Literacy Teaching and Learning

3.6.1 Overview – matching pedagogies to theories

Behaviourist theories of language acquisition provide the foundation for bottom up approaches to literacy teaching. These approaches focus on the learning of the smallest parts of language – speech sounds, symbols, and words – through imitative and repetitive instruction.

Nativist theories can be seen in top down approaches to literacy teaching, where attention is given to the whole meaning of texts, spoken or written, with the expectation that the learner will naturally attend to the smaller parts of language through multiple exposures to meaningful text.

Social interactionist approaches recognise that a dichotomous view of literacy teaching as being top down or bottom up is a false representation of how most learn to be literate (Cope & Kalantzis, 2009; Merchant, 2008). Readers and writers access both meaning and context, as well as attend to detail when they engage in literacy practices. Sometimes they can make meaning and inferences for themselves and sometimes they require explicit instruction.

Luke and Freebody's Four Resources Model

Text decoder – understands the components of language and how they work

Text participant – understands the meaning of the text

Text user – understands that text structures differ according to audience and purpose

Text analyst – understands that texts are written with intention and can analyse that intention

Luke and Freebody (1999) offer a pedagogical framework that encapsulates an interactionist approach to teaching literacy – **the four resources model**.

They describe four roles that a literate person inhabits as they read and write: text decoder, text participant, text user, and text analyst. *Text decoders* understand the components of language and how they work, for example, spelling and syntax. *Text participants* understand the meaning of what they read. *Text users* are able to use texts for different purposes. And *text analysts* understand that texts are written with intention and they are able to interrogate those intentions.

Luke and Freebody claim that the four roles, or resources, are neither hierarchical nor isolated – that is, they operate in interrelated ways and are within the capacities of all language learners, even beginning readers and writers.

The four resources model has been adopted by those wishing to pursue a balanced approach to reading and writing – with a recognition of both student experience and interpretation and explicit or overt instruction from others (Cope & Kalantzis, 2009, 2000).

Serafini (2012) has further innovated on the model to describe parallel roles for students working with visual and digital texts rather than traditional print texts: navigator, interpreter, designer, and interrogator (Serafini, 2012).

3.6.2 Pedagogical principles

As noted in Section 2 of this Literature Review, increasing text complexity in schools has been identified by the Common Core State Standards as key to improving educational outcomes for students. The targets set for Year 3 children in U.S. schools as a result of the implementation of the Common Core State Standards across 47 states require students to read and produce texts a full year beyond what previous targets have recommended. This demand for higher achievement comes at a time when two-thirds of Year 3 students in the U.S. fail to attain the current "lower" standards (Hiebert, 2011), and similar rates of achievement have been noted in Year 8 (Williamson et al., 2013). Clearly, simply assigning more complex texts will not improve achievement standards. Instructional practices must also change.

Although numerous social factors have been associated with low achievement in literacy at school – most notably socio-economic status – repeated studies have found that in-school factors have primacy in the achievement of students at school. Hattie (2009) in his well-known meta-analysis of research investigating school effectiveness on student learning summarises those impacts as:

- Students and their own abilities and dispositions account for about 50% of the variance of achievement.
- Teachers' knowledge and interventions account for about 30% of the variance.

- Homes, schools, and peers combine to make up the remaining 20% of variance in achievement (Hattie, 2009).

Hattie's work highlights the importance of teachers in the learning equation, and their capacity to respond effectively to what each student brings to learning. Indeed, studies find that effective literacy and learning experiences in school "can act as a protective factor that has a positive influence upon the cognitive and social development of young children" (Hay & Fielding-Barnsley, 2009, p. 149).

With this in mind, Carney's (2013) broad pedagogical principles provide a sound foundation for the teaching of literacy. These are to:

- recognise and utilise existing student knowledge;
- explicitly teach language and metalanguage; and
- utilise creative and critical approaches.

This can be achieved through the application of multiple focuses:

- focus on skills and strategies;
- focus on self-actualisation;
- focus on specialist community discourses (genre);
- focus on students' funds of knowledge – bringing the outside in; and
- focus on critical analysis – questioning privilege and power.

These pedagogical focuses align with Luke and Freebody's description of the resources all literate citizens draw upon, as described earlier.

3.6.2.1 Implementing pedagogies Whilst these principles provide some guidance on the content of a literacy curriculum, there still remains the question of implementation. How do we understand when implementation of content is most effective? Italian educator Mariani (1997) provides a useful lens through which to view implementation of a curriculum, as captured in Figure 5 (Mariani, 1997).

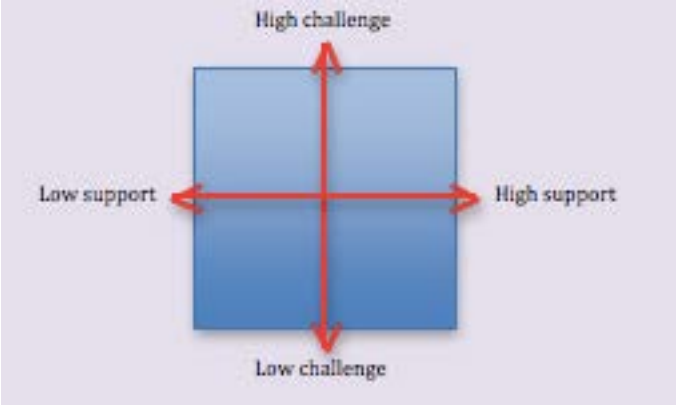


Figure 5 Mariani's framework for support for language learners (Mariani, 1997).

If mainstream classroom and assessment activities are presented to additional language learners without differentiation or support – that is, they fall into the high challenge, low support quadrant – then learning is minimal. Likewise, if additional language learners are given classroom activities that simply keep them occupied whilst the teacher manages the mainstream learners – that is, the low support, low challenge quadrant – learning will not occur.

Using Mariani's framework, Gibbons (2006) describes three implementation principles that align with social interactionist approaches and fit well with transdisciplinary and integrated approaches to teaching and learning:

a. use authentic curriculum contexts to ensure learning is purposeful;
b. ensure tasks are intellectually challenging; and
c. provide support to meet the challenge.

3.6.2.1.1 Professional development for teachers in pedagogical practices

Educators observe the paradox that the more complex literacy becomes in schools, the less instructional support is available (Hill, 2011; Shanahan & Shanahan, 2008). In secondary schools, teachers are less likely to be required to have certification in literacy, or even cover it at all in their teacher preparation. As Fang and Pace (2013) observe, "Simply reading a text multiple times and asking more questions does little to help students who are already struggling" (p. 107).

Government funding of literacy support is geared towards primary schools, with far fewer instructional materials in literacy specific to the disciplines. Fenwick (2010) observes that although resources have been developed to support generic literacy instruction, and even basic text types or genres, this material is too simplistic for secondary contexts. She observes, "Much more work is required to involve secondary school teachers within processes that help to identify the more complex genres associated with their subjects" (p. 282).

3.6.2.2 Focus on sociocultural pedagogies for literacy teaching and learning

Pedagogies for students learning in multilingual contexts should be flexible enough to recognise children's sociocultural literacy histories, respond to their present history as literacy learners, and prepare for their future histories as literacy users. This requires teachers to deliberately orchestrate classroom learning, carefully constructing episodes that will give children the shared experiences from which to take meaning and which will make productive use of a variety of symbolic repertoires.

In doing so, teachers utilise children's capacities to work multimodally, and they are able to carefully construct follow-up learning that allows children to make meaning. In order to identify starting places for the co-construction of knowledge in the classroom, the teacher must find out what each child's starting point is and what experiences and understandings they bring with them to the classroom. This active role for the teacher, and the interdependence of adult and child, is the core of social constructivism the teaching pedagogy which accompanies the social interactionist approach to language teaching which this Literature Review has focused upon.

What follows are accounts of pedagogical approaches which take account of these social interactionist approaches. They have been categorised under the following headings:

- Multilingual Pedagogies;
- Multiliteracies Pedagogies; and
- Language-focused Disciplinary Literacy Pedagogies.

However, their description under these categories does not imply that they are exclusive of each other. Importantly, in this section the aim is to draw together a range of

pedagogical practices as they are described in both first language and additional language literature and to draw parallels between the two.

3.6.2.3 Multilingual pedagogies

A fundamental pedagogical principle is to find out what students know and build upon that. When teaching bilingual or multilingual students, this includes both their proficiency in the language of school instruction as well as their first or additional languages. Teachers themselves may not have the multilingual resources of the many children in their classes. However, by not acknowledging the existence of these other languages, we reduce any chance at all of students drawing upon that other knowledge repertoire (Hornberger & Link, 2012). Given our understandings from neuroscience of the ways in which languages work together to support each other (Kroll et al., 2015), this is to the detriment of the students. To ignore the cross-interaction between languages, or to actively seek instructional methods that discourage interaction between languages, is to disadvantage students' school language learning as well as their mother tongue maintenance (Cummins, 2015).

3.6.2.3.1 Validating the use of L1

The ignoring of children's languages is often benign. Teachers may not actively tell children not to speak their home language, but children, even very young ones, read the school context quickly and understand "the status differential between the home languages and English" (Cummins, 2005, p. 586), and as a result they stop using their home language: "Children understand very quickly that the school is an English-only zone and they often internalise ambivalence and even shame in relation to their linguistic and cultural heritage" (Cummins, 2005, p. 590).

The aim of educators employing multilingual pedagogies should thus be to change the status differential, to value and nurture the languages of all students, and not to view students' mother tongues as a hindrance to learning the language of the classroom. Doing so, it is claimed, will positively affect learning outcomes in the school language as well as the home language (White, Mammone, & Caldwell, 2015).

Typically, the multilingual resources of students do not often find their way into mainstream curriculum documents (Blackledge, 2000; Coleman, 2012; Cross, 2011). This is despite scholars such as the New London Group (Cope & Kalantzis, 2000; Lo Bianco, 2000) providing a convincing argument that a multilingual and multiliterate world is the present and the future we are preparing children for. Indeed, student populations are reflections of the linguistically diverse communities we live in – Møller et al. (2014) describe schools in many contexts as being "linguistically superdiverse" (p. 51), and in their research involving Turkish mother tongue speakers in Danish schools they recount the likelihood of encountering "linguistic features associated with at least the 'languages' called Danish, French, German, English, Arabic, Turkish" (p. 51). Any account of language and literacy teaching must take account of this broad linguistic landscape that students operate within.

The validation of L1 by its active use in the classroom "affirms students' identities (Cummins, 2009, p. 320) and provides a space "where students can draw upon sameness and difference without inhibition"(Kiernan, 2011, p. 31). As such, multilingual pedagogies enact the IB value of international mindedness.

3.6.2.3.2 Multilingual teaching strategies Teacher professional learning is important place in building professional understanding of how languages are learned, and how to utilise L1 in the classroom alongside more dominant school and system

policy discourses around literacy and achievement in the language of school instruction.

Teachers need not speak the languages of multilingual students to promote their home language in the classroom. Successful multilingual strategies include:

- allowing students to use their home language to participate in discussions about content with other peers in order to build conceptual understanding of the topic;
- writing in the home language and then working with others to translate into English, which builds higher order thinking skills; and
- comparing and contrasting language structures across languages, which builds metalinguistic awareness, which has benefits in English language learning as well as vocabulary development and comprehension across other discipline areas.

A bilingual friendly classroom values and incorporates the skills of all its learners. It aims to:

- use the EAL/D learner's home linguistic and cultural experiences;
- build positive attitudes and awareness of languages among all the learners in the classroom; and
- affirm the personal identity of each learner in order to build self-esteem and self-confidence.

It can achieve this through:

- displays of books in different languages, all the time, and not just once a year for special events;

- examples of print in the students' languages around the room, for example, labels for classroom objects and greetings; and
- learning activities that activate the students' home languages, for example, in early childhood classrooms, sending home a soft toy which speaks and writes all the languages of the world and which brings back letters from the children's homes in the languages of the children (Adoniou, 2015).

Konishi et al. (2014) offer a summary of six pedagogical principles for the development of the additional language in the classroom, which can run parallel to the suggested home language supports provided above. They are:

a. children learn what they hear most;
b. children learn words for things and events that interest them;
c. interactive and responsive, rather than passive, contexts promote language learning;
d. children learn words best in meaningful contexts;
e. children need to hear diverse examples of words and language structures; and
f. vocabulary and grammatical development are reciprocal processes (Konishi et al., 2014).

The first five principles describe a particular pedagogical environment situated in social interactionist theories of learning, that is, that learning is socially mediated and best done in context. The last principle offers some guidance on the manner in which explicit instruction of language can occur. The authors describe the notion of semantic and syntactic "bootstrapping" (Konishi et al., 2014, p. 412), that is, children learn grammar structures through their pursuit of meaning, and they learn meaning and vocabulary through their attention to the grammar.

3.6.2.4 Multiliteracies pedagogies Since their initial theorising around multiliteracies (see Section 1 of the Literature Review), Cope and Kalantzis have continued to work on developing an accessible pedagogical framework through which to apply multiliteracies theory. Specifically, they have developed the Designs for Learning or Learning by Design framework (Cope & Kalantzis, 2003), which they continue to progress in consort with teachers around the globe (Cope & Kalantzis, 2009). That work in classrooms has informed the continuing evolution of the theory itself. As Cope says, "we were all learning the whole time together, and the theory has developed in parallel with the practice" (Cope, in Cloonan, 2005, p. 14).

Multiliteracies in practice

Experiencing – "doing" the learning

Conceptualising – understanding the learning

Analysing – critiquing the learning

Applying – using the learning

The Learning by Design framework originally described situated practice, overt instruction, critical framing, and transformed practice as the keystones of the pedagogy (Cope & Kalantzis, 2000). More latterly, they have renamed these events in teaching and learning as experiencing, conceptualising, analysing, and applying (Cope & Kalantzis, 2009). Each of these has been further nuanced to describe aspects within each stage, as shown in Table 2.

Table 2
The "How" of multiliteracies – the microdynamics of pedagogy

Pedagogical orientations—1996 formulation	*Knowledge processes—2006 reformulation*
Situated practice	Experiencing . . . the Known . . . the New
Overt instruction	Conceptualizing . . . by Naming . . . with Theory
Critical framing	Analysing . . . Functionally . . . Critically
Transformed practice	Applying . . . Appropriately . . . Creatively

Source: Cope and Kalantzis, 2009, p. 187

Key to the multiliteracies theory and accompanying pedagogy is the understanding that learning may occur through a variety of modes (see Section 1 of the Literature Review), that is, literacy is not confined to print literacy. Indeed, Cope and Kalantzis (2009) contend that the modes rarely work in isolation to one another and that multimodal learning is more than an acknowledgement of the different modes. It involves "processes of integration and moving the emphasis backwards and forwards between the various modes" (Cope & Kalantzis, 2000, p. 211).

A tick-a-box approach may result in curricular and classroom practices that simply acknowledge the existence of different modes of meaning-making, rather than practices that work in a meaningful way with the complex connectedness of these modes. Indeed, Cope and Kalantzis (2009) claim a tick-a-box curriculum approach to multimodal learning would be another incarnation of the separatism the mulitliteracies pedagogy seeks to break down. As Cope and Kalantzis (2009) observe, "Children have natural synaesthetic capacities, and

rather than build upon and extend these, over a period of time school literacy attempts to separate them to the extent even of creating different subjects or disciplines" (p. 180).

3.6.2.4.1 Implementing multiliteracies approaches – challenges Teachers find it difficult to walk the line between a call for transformative multimodal practice from academics and a directive to engage in reductionist pedagogy from education authorities, with a focus on achievement in traditional print literacies (see for example the international testing regimes of PISA and PIRLS).

Although there are numerous projects (Cloonan, 2005; Cope & Kalantzis, 2009) that seek to find applications for multiliteracies theory, they do so in the face of calls for national curriculums to privilege isolationist teaching in History, Science, Mathematics, and English, for example. And, as Unsworth (2002) notes, conventional literacies, like writing, will continue to be important to learning, existing in the traditional "monoliteracy" sense but also within multiliteracies. Conventional literacy has not been replaced but rather co-opted into service in more multimodal communicative texts (Unsworth, 2002).

3.6.2.5 Language-focused, discipline-based pedagogies As research in recent decades suggests, literacy skills are more complex than an inoculation received in the early years of school that prepares students for all their learning. Literacy skills build in complexity over the years of schooling but also across the disciplines of schooling, as discussed in Section 2 of the Literature Review.

The Common Core State Standards in the U.S. note the following in their preamble:

Each discipline has its own specific vocabulary, text types, and ways of communicating. Students who are literate in a particular discipline are able to successfully read, write, and speak about that discipline and can listen to and

> think critically as others communicate in that community. (Common Core State Standards Initiative, 2015)

In stating this they are responding to the research, outlined earlier in this review, that finds the literacy practices of each discipline are identifiably different, as are the language resources drawn upon to enact those literacy practices.

3.6.2.5.1 The differences between content-based literacy teaching and language – focused disciplinary literacy approaches Hynd-Shanahan (2013) suggests that the key difference in disciplinary literacy pedagogies with generic content embedded literacy approaches is that the latter leads with "a strategy and imposes it on a text" whilst the former starts with "the text and the disciplinary purpose for reading" (p. 95). This has been described as an "inside out" approach "because the text itself and the goals for reading the text dictate the reading processes" (Brozo et al., 2013, p. 354). Gillis (2014) recommends the **adaptation** of general literacy strategies by content area teachers rather than the **adoption** of them and provides detailed examples of how a general literacy strategy can be adapted for Science, History, Mathematics, and English.

Schleppergrell and O'Halloran (2011) conclude that strategies need to be "embedded in a rich curricular context in order to adequately address the complexities of language learning and teaching" (p. 14). Goldman (2012) observes that generic literacy strategies are often simply not applicable to "the authentic texts" (p. 97) that discipline teachers would like their students to engage with, for example, newspaper articles, historical documents, and research reports.

3.6.2.5.2 Explicit teaching Shanahan and Shanahan (2008) note the non-intuitiveness of advanced literacy practices, observing, "Most students need explicit teaching of sophisticated genres, specialised language conventions, disciplinary norms of precision and accuracy" (p. 43). This is in contrast to nativist pedagogical approaches, which suggest that exposure to new language patterns is sufficient. Fang and Schleppergrell emphasise the importance of external intervention for many students who struggle to notice and use these new language patterns for themselves: "By making discipline-specific ways of using language explicit, teachers can help adolescents, especially those who have little access to these ways of making meaning outside the school, better engage with school knowledge" (Fang & Schleppegrell, 2010b, p. 596).

Specialist discipline literacies appear harder to learn, but Shanahan and Shanahan (2008) observe they may be harder to learn simply because they are not taught: "By the time adolescent students are being challenged by disciplinary texts, literacy instruction often has evaporated altogether or has degenerated into a reiteration of general reading strategies most likely to benefit only the lowest functioning students" (Shanahan & Shanahan, p.45).

3.6.2.5.3 Discipline teacher attitudes to literacy teaching A survey in a recent U.K. parliamentary report into literacy found that although 57% of secondary teachers reported concerns about the literacy levels of their pupils only 6% felt that they should contribute to changing that situation (Wray & Janan, 2013).

Discipline or subject area teachers have traditionally resisted calls for them to teach literacy within their discipline areas, usually claiming time constraints and a need to attend to content (Hill, 2011). Secondary teachers themselves report that the traditional structure of

the high school timetable of 40-minute lessons precludes the possibility of them doing any substantive work in their teaching time (Wray & Janan, 2013).

Other research suggests they resist because the literacy strategies they are provided with are unsuitable or irrelevant to their subject area (Shanahan & Shanahan, 2008). Gillis (2014) observes that many content area teachers see the request to incorporate literacy into their teaching as something added to their load and "divorced from their content" (p. 615). Content area or discipline teachers have also resisted on more cultural grounds, claiming literacy is not their job but rather the task of the Language Arts teacher (Gillis, 2014; Moje, 2008; Schleppegrell & O'Hallaron, 2011) or a belief that students who arrive in secondary school should already have literacy competencies in place (Fenwick, 2010).

Wray and Janan (2013) suggest it may simply be beyond these teachers' capacity, as they have not had the training to engage in literacy instruction.

However, in the face of a generalised resistance or reluctance to engage with literacy instruction beyond the primary years, statistics indicate that students are failing in secondary school, and their literacy scores are slipping backwards on the transition into secondary school. Pedagogies are required to address this, and these need to be pedagogies that secondary teachers see value in.

3.6.2.5.4 Thinking, reading, and writing like a discipline expert Moje (2008) suggests that if we were to reconceptualise subject area learning as more than content learning, and to include learning about discipline-specific ways of knowing, doing, and communicating, then literacy teaching would not only be more acceptable to discipline area teachers but also normalise literacy teaching within the disciplines. Reflecting Gee's notion of Discourse identities within communities (see Section 1),

> the purpose of disciplinary literacy approaches is to be apprenticed into the ways of thinking and communicating in the discipline communities, that is, to think and write like a scientist, a historian, or a poet.

Shanahan (2008) emphasises that disciplinary literacy approaches are not just about being able to read or produce the target text; they are also about understanding what it means to think like a scientist or a historian (Shanahan & Shanahan, 2008) . Fang and Schleppergrell (2010) observe that it is the "subject specialists are best positioned to apprentice students into meaning-making in their disciplines" (p. 591).

When literacy instruction is conceived in this manner, it reduces the argument that "add-on" literacy strategies common in content-based literacy approaches take too much time from the content curriculum. It also places agency in the hands of the discipline teacher.

3.6.2.5.5 Collaboration between literacy and discipline specialists Brozo et al. (2013) claim that teacher agency is key to the successful implementation of new curriculums and teaching approaches, and this is reflected in the recommendations of numerous researchers that literacy instruction in middle and high school must be a collaboration between discipline and literacy specialists (Brozo et al., 2013; Collin, 2014; Fang, 2014; Hynd-Shanahan, 2013; Moje, 2008). The importance of collaboration between these teachers is emphasised throughout the literature, and the role of the expert knowledge of the discipline teacher is key. The pre-eminence of disciplinary knowledge is supported by Herber's work on content area literacy (cited in Gillis, 2014), which called for process to follow content, that is, for content to determine process.

3.6.2.5.6 Pedagogical principles for disciplinary literacy From a survey of all recent research into effective pedagogical practices for teaching academic or disciplinary literacy in secondary settings, Schleppegrell and O'Halloran (2011) make a series of recommendations, summarised in Table 3.

Table 3
Recommendations from recent research syntheses on instruction in academic language at the secondary level

Instructional recommendation	Sources
Knowledge about academic language in the content areas—Support learning about academic language in all subjects: Incorporate language development in the content area; organize content thematically; provide explicit instruction in academic language, including vocabulary, text structures and discourse features; develop metalinguistic knowledge; develop critical literacy.	Anstrom et al. (2010); Francis et al. (2006); Jiménez & Teague (2009); Lindholm-Leary & Borsato (2006); Meltzer & Hamann (2005); Roessingh (2004); Short & Fitzsimmons (2007)
Macro-scaffolding—Plan challenging work that develops language and content over time and involves students in learning: Set high expectations; offer challenging and motivating contexts; have clear goals and learning objectives; share language objectives with students; teach learning strategies and have students reflect on their own learning; use a 'balanced approach" to literacy, teaching all four skills from the beginning; use multiple forms of assessment; provide opportunities to apply new knowledge; review and practice.	Cumming (2008); Francis et al. (2006); Goldenberg & Coleman (2010); Jiménez & Teague (2009); Meltzer & Hamann (2005); Roessingh (2004); Short & Fitzsimmons (2007)
Micro-scaffolding—Support students' engagement with language and content: Create an atmosphere for trust and risk-taking within a small community of learners; support group/collaborative work; engage students in protracted language events and authentic communication tasks that motivate them and give them choices; ask high-level questions that enable students to apply new knowledge; encourage participation; provide clear instructions, modeling, and presentation of new information; use visual/multiple/multimodal representations; use appropriate technology; build on prior knowledge; bridge between everyday and academic language; use slower, flexible pacing; give effective feedback.	Anstrom et al. (2010); Cumming (2008); Goldenberg & Coleman (2010); Jiménez & Teague (2009); Lindholm-Leary & Borsato (2006); Meltzer & Hamann (2005); Roessingh (2004); Short & Fitzsimmons (2007); Téllez & Waxman (2006)

Source: Schleppegrell and O'Halloran, 2011, p. 6

Essentially Schleppegrell and O'Halloran find teachers need to know how language is working in their discipline, how to incorporate this knowledge into a long-term developmental plan, and how to address it in their everyday teaching.

The principle of long-term planning of language and literacy development is important and far more likely to be found in the curriculums of primary schools than secondary schools. However, it is crucial that middle years and secondary schools take a "longer term view of literacy learning and the development of skills that build layers of understanding through practice and revisiting of core skill" (Morgan, 2012, p. 50).

Billman and Pearson (2013) offer five pedagogical principles to support the development of curriculum practice that consider the concerns outlined above. The principles are:

a. the acquisition of literacy skills should occur concurrently with the pursuit of disciplinary knowledge and "habits of mind";
b. disciplinary literacy can be pursued at all grade levels and can be achieved by accessing the knowledge that they bring with them into the school;
c. literacy is the tool, not the goal, of disciplinary literacy approaches;
d. texts are not the only means for communication knowledge; we are not apprenticed into a discipline by simply reading and reproducing the texts of the discipline; and
e. we need to participate in all the activities of the discipline in order to think, act, and behave like scientists, historians, and poets. (Billman and Pearson, 2013, p. 26).

Fundamental to each of these is their basic premise that knowledge is both the cause and the consequence of literacy in the disciplines. The implementation of Billman and Pearson's principles result in experiential and integrated inquiry approaches to learning, where literacy is embedded but also made explicit to students. They recommend open-ended tasks that will allow students to bring their own knowledge and motivation to the tasks, alongside explicit attention to the kinds of literacy required for the tasks. They recommend a

range of literacy activities that are typical of a disciplinary community, for example, doing science, talking science, and reading and writing science. Their descriptions of literacy instruction allow us to see through the dichotomous "back-to-basics" and "new literacies for new times" debates which opened this Literature Review. It is possible to focus on basic literacy instruction whilst also delivering opportunities for the development of transformative literacy experiences.

This approach is supported by Carney and Indrisano (2013, p. 43), who say effective teachers of literacy:

a. are knowledgeable about the wide range of sources of applicable knowledge;
b. invite students to share their funds of knowledge; and
c. understand how to integrate these two in the teaching of disciplinary content and literacy.

3.6.2.6 Close reading and extended reading

3.6.2.6.1 Close reading Close reading is described as one way of providing scaffolded support so that students not only comprehend the text but also understand how it makes meanings. This not only builds their critical thinking skills and metacognitive skills but also provides them with tools to apply in their own writing.

The ways we teach children impacts upon what they see as being the purpose of the task. When we teach children to read through schemes that tally their books, we teach them that reading is about quantity. Close reading counters the mentality of "I read it and I'm done" (Hill, 2011) and instead encourages a focus on "sophisticated, nuanced, and rich meaning" (Williamson et al., 2013, p. 61). Fang (2012) reminds us that because disciplinary reading is complex success should not be measured in fluency or speed: "Comprehending

disciplinary texts requires that readers pause periodically to analyse language patterns in the text, sort out potential linguistic issues, and carry out deliberate conversations with the author" (Fang, 2012, p. 31).

3.6.2.6.2 Case study of one close reading methodology Scaffolding Literacy, also known as Accelerated Literacy, is one such approach to literacy instruction. Scaffolding Literacy teaches literacy and language through authentic texts that are exemplary for the discipline (Adoniou & Macken-Horarik, 2007). These are not prescribed texts; they could be any text used in an inquiry unit or classroom teaching, for example, a novel, a primary source, a historical document et cetera. The selected texts are characterised by their authentic use of language, which is appropriate to the discipline. This is in contrast, for example, to the use of modified classics or reading scheme books. As such, Scaffolding Literacy provides opportunities for engagement with subtle aspects of language in the text (e.g., layers of meaning, technical language, and metaphor).

Teachers apprentice students into this language through close attention to the ways language has been used to achieve meanings. For example, teacher talk around the opening sentence from the narrative *The Fox* by Margaret Wild may sound like this:

Preparation or pre-formulation: "The first sentence of the story gives a lot of information about the characters in the story and where the story is set. The sentence starts not by telling us who the characters are but by describing the setting for the story 'Through the charred forest'. Can you find those words in the text?"

Identification: Students underline the words in the text, and a student may demonstrate on an interactive whiteboard.

Elaboration or reconceptualisation: "The word 'charred' means 'burnt', so what do we know has happened to the forest? [Students respond 'bushfire'.] This gives us an important clue as to how these characters find themselves together at the beginning of this story."

Close reading and the Scaffolded Literacy methodology described require the teacher to be familiar with the texts under examination and to have completed an analysis of the features to ensure "they are aware of the specific factors that contribute to the difficulty of the text and can plan for instruction related to those factors" (Fisher & Frey, 2014, p. 310).

3.6.2.6.3 Extended reading Extended reading is also necessary to teach students the purpose of reading (Wray & Janan, 2013) and expose them to the wide range of possible text types and genres prevalent in the discipline. As Glaus (2014) observes, if the aim of school is to have students reading increasingly complex texts, "to get there, students must actually be reading" (p. 414).

Extended reading has also been linked to increased vocabulary growth (Goodwin, 2011), which in turn has been identified as a key predictor of school success in literacy. For example, the well-known Thirty Million Word Gap study in the U.S. found 3-year-olds from disadvantaged backgrounds had almost one-third of the vocabulary of children from economically advantaged backgrounds. The research suggests this gap can be reduced, but it will require quality and purposeful interactions with adults where vocabulary is extended (Weisleder & Fernald, 2013) and exposure to a wide range of texts where that vocabulary is found.

3.6.2.7 Genre pedagogies

The kinds of texts found in each of the discipline areas are often specific to that discipline. If teachers and students are to closely read these texts, and accurately produce them in their writing, they require an understanding of how they are structured. Work undertaken in the late 1980s identifies the various written genres that are privileged in schools and prevalent in the discipline areas, and therefore the ones which students need to have control over if they are to perform well in schools (Christie, 1991; Collerson, 1988; Derewianka, 1990; Macken et al., 1989). These are known as genre pedagogies and are often referred to in the literature as being part of the Sydney school.

Genre pedagogy, developed principally as a mainstream literacy pedagogy, shares a fundamental ideology with bilingual and multilingual approaches to language and literacy instruction – they seek to tackle educational inequity, the source of which can be found in students' access to the language patterns of formal schooling (White et al., 2015).

3.6.2.7.1 Genres in the school curriculum

The Sydney school observed the kinds of texts school students are required to read and write across school subjects, and produced a list of what they called typical school genres. This early list included recounts, instructions, narratives, information reports, explanations, and arguments (Derewianka, 1990). The list has expanded over the years to acknowledge a broader range of valued genres in the school curriculum, most particularly by identifying subtypes within previously identified genres, including literary recount, observation, literary description, personal response, review, factual description, procedural recount, and discussion.

The premise of genre pedagogy approaches is that, in order to succeed at school, students must be able to read and write in these privileged school genres and, as these genres are social constructs rather than innate knowledge, must receive explicit instruction in them. Understanding how genres are organised at text level and then how language is selected and organised within the text at sentence and word level is an important part of writing successfully and achieving at school (White et al., 2015).

Unsworth (2001, p. 127) distils the following as genre knowledge which all students must be taught:

- different genres exist;
- genres are a means of achieving particular social purposes;
- genres have identifiable structures; and
- genres have characteristic grammatical features.

Narrative genres have traditionally predominated in the primary years, whilst non-narrative texts are most prevalent in secondary schooling (Fitzgerald et al., 2015). The increased use of non-narrative texts from the early years is one of the core principles behind the Common Core State Standards (Fitzgerald et al., 2015). Fifty per cent of texts studied in elementary school are now required to be informational texts, whilst in the Australian curriculum from Year 1 students are to be introduced to information texts and understand the difference between these and narrative texts. This increased focus on non-narrative texts in the primary years inevitably increases the focus on instruction of discipline-specific language features (Carney & Indrisano, 2013; Shanahan & Shanahan, 2014). Genres also become longer, more analytical, and complex as the learner moves through the school years (DECS,

2006). Therefore, it is not possible to "do" particular genres in the primary years and expect that students in the secondary years will not require further support and instruction.

Unsworth (2001) also reminds us that genres are connected to their social and historical context and are therefore not static. Language is flexible, and it is likely that genre features will change as societal needs change and technology supports that change or indeed dictates that change (Christie, 1991). Indeed, genre theorists suggest that the idea of teaching social norm genres is to give students the skills to challenge those genres: "They should be used to provide guidance to language learners and not as constricting recipes. It is always open to writers to innovate, to defy established conventions or to invent new genre forms" (White et al., 2015, p. 5).

3.6.2.7.2 Pedagogical principles for genre approaches The development of a teaching and learning cycle (see Figure 6 below) has arisen from the genre work. The cycle provides a pedagogical framework for teaching genres but can also be applied as an explicit pedagogy for any teaching.

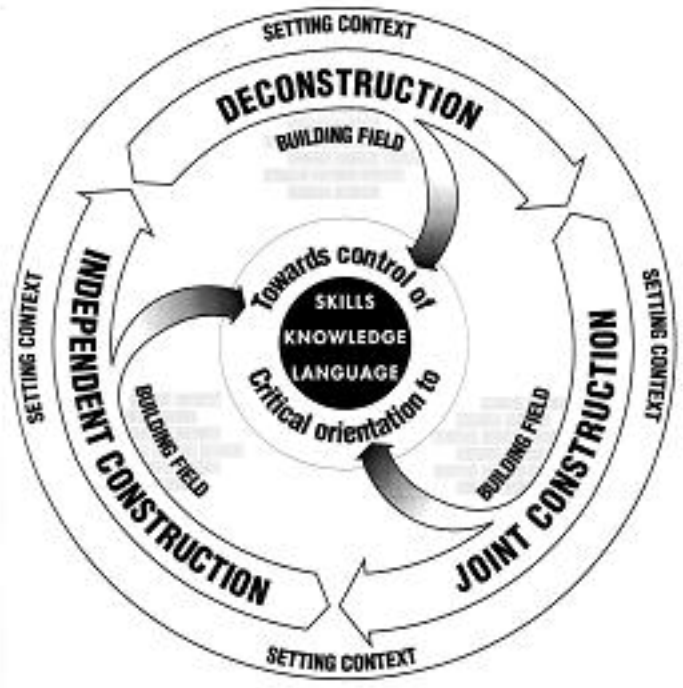


Figure 6 The teaching and writing cycle (Gibbons, 2002).

Fundamental to the teaching and learning cycle is a recognition of students' prior experiences, as characterised by the outer circle of setting and context. From this understanding, the teacher can "build the field" – that is, they can utilise students' background knowledge and experiences, as well as fill gaps, to enable them to produce the written genre. This is where "content" is taught. With these fundamentals providing the "background", literacy instruction is then scaffolded as follows:

- **modelling –** first the genre is modelled for students, or models of the genre under instruction are provided;
- **text deconstruction–** the model text is then deconstructed in order to understand the constituent parts and how the genre coheres;

- **joint construction –** the teacher works together with students to create some writing in the target genre; and
- **independent construction –** the students work on their own production of the target genre.

This scaffolding apprentices students into the construction of the genre. The same scaffolding process can be applied to reading or any other learned task and also to apprentice students into the discipline thinking or "habits of mind" of the discipline expert (Fang & Schleppegrell, 2010b). The process allows work to start from the broader context, experience, or question and to focus on meaning – and then move into the specific language features that allow those meanings to happen. The principle is to start from what is known and scaffold into new knowledge (Schleppegrell & O'Hallaron, 2011). The aim is to teach language "through meaningful tasks that engage students in content and language learning simultaneously" (Schleppegrell & O'Hallaron, 2011, p. 13).

The focus on explicit instruction inherent in genre pedagogies has been identified as "an excellent fit" for bilingual or multilingual programmes (White et al., 2015, p. 3). In a longitudinal study of high school students across a range of schools in an Australian city, White et al. (2015) found that students in a low-socio-economic schools who had received explicit genre-based teaching outscored not only students in similar schools but the mean score in their state and across Australia.

3.6.2.8 Content and language integrated learning

Whilst the genre pedagogies pay explicit attention to the language features of texts as they appear in the different discipline areas, they do not explicitly state where in the curriculum genre instruction might occur. The CLIL approach clearly makes the claim that the language teaching so apparent in the genre pedagogies should take place within the content areas. That is, in order to write a genre successfully, students not only need to know its language features but also understand the content they are reading or writing about (Hynd-Shanahan, 2013; Moje, 2008). This is the thrust of the disciplinary literacy approaches described earlier in this section, and it is the key principle to their manifestation in the foreign language learning classroom – CLIL.

3.6.2.8.1 The origins of CLIL

CLIL is a term which was introduced in the mid 1990s essentially to describe a "Euro" situated vision of the immersion-language programmes more prevalent in North America (Cenoz, Genesee, & Gorter, 2014; Pérez-Cañado, 2012). CLIL is a "foreign" language adaptation of immersion programmes which typically involve a 50/50 use of two languages (Cenoz et al., 2014), both of which typically have some social and cultural relevance in the contexts they are taught in, for example, French immersion programmes in Canada or Spanish immersion programmes in the U.S. CLIL programmes, however, make no stipulation of the time split between the additional language instruction and the school's dominant language (Cenoz et al., 2014).

Bilingual immersion programmes are typically focused on instruction in an additional language that has some immediate cultural and academic cache; usually the language is spoken locally or by groups of locals. CLIL is focused on foreign languages which may have instrumental value for career development – English in Europe, for example – but are not

typically local languages. The aim of CLIL is to teach a language other than the school instructional language, through content. This was and is an innovative approach to foreign language teaching (Cenoz et al., 2014), where typically the foreign language has been the subject of study in and of itself. CLIL has been described as the European foreign language version of the U.S. second language approach, described earlier as content-based instruction (Cenoz et al., 2014).

CLIL can take many complex permutations. For example, it may involve the teaching of German through Mathematics in a Dutch school, or English through History in a Spanish school. In English-medium schools it may, for example, involve the teaching of French through Geography.

3.6.2.8.2 The aims of CLIL Bilingual immersion and CLIL approaches share the same desire to make language meaningful through its use for real purposes (Bruton, 2013) in the pursuit of attaining new content knowledge. CLIL is an evolution of other communicative and content-focused approaches to foreign language teaching (Pérez-Cañado, 2012), for example, task-based learning, where the hypothesis is that more language learning happens when students are engaged in tasks that prompt language rather than simply focusing on the decontextualised teaching of language forms (Bruton, 2013).

Significantly, the introduction of CLIL in Europe represented a shift from languages being conceived as a subject of "foreign language study" by monolingual learners, to bilingualism being a capability, and a natural condition, through which content can be understood. CLIL approaches have been praised for putting content on the foreign language learning agenda, increasing interest and motivation in language learning (Pérez-Cañado,

2012) and in particular the ways this integration has resulted in more teacher collaboration across the discipline areas (Bruton, 2013; Cenoz et al., 2014; Pérez-Cañado, 2012).

CLIL has been idealised as an approach that delivers two outcomes for the price of one – both content and language development (Bruton, 2013) – and there have been numerous studies in Europe identifying the benefits of CLIL as a motivating approach for language learners, and in Canada, where immersion programmes have been shown to produce numerous learning benefits to students.

3.6.2.8.3 Challenges for CLIL implementation CLIL and bilingual immersion programmes have both been criticised for their attention to function over form (Cenoz et al., 2014; Pérez-Cañado, 2012). CLIL approaches may provide little or limited feedback on language accuracy, and language drills are discouraged as they are contrary to the fundamental principle that the content itself will encourage genuine language use (Bruton, 2013).

Critics recommend that "experiential learning approaches need to be balanced with more analytical approaches that focus on form" (Pérez-Cañado, 2012, p. 317). To do otherwise, the critics suggest, may actually hinder content development (Bruton, 2013, p. 593) due to inattention to the specifics of content language. The calls for increased attention to language form and structure in CLIL in foreign language contexts replicate the calls for attention to discipline language in content-based instruction in second language contexts.

Whilst critics say there is some way to go before the CLIL approach can be said to be universally beneficial for all students (Bruton, 2013), there is ample evidence that delivering language through content is preferable to delivering language devoid of content (Pérez-

Cañado, 2012). An additional benefit of CLIL approaches is their apparent negation of the gender bias often found in traditional foreign language approaches where girls typically outachieve boys. In CLIL approaches, research has found no gender difference in performance (Pérez-Cañado, 2012).

More than 30 European school systems have been sufficiently convinced by the existing evidence in favour of CLIL approaches to employ them in their school systems to some degree. English is the most common foreign language taught in this manner, although trilingual CLIL instruction also occurs in Latvia, Estonia, the Netherlands, and Austria (Pérez-Cañado, 2012). Interestingly, CLIL approaches are not evident in Britain, where foreign language study is already minimal and bilingual programmes almost non-existent.

However, further research is required into the ways CLIL approaches impact students who already have complex personal linguistic histories. For example, in a CLIL programme in the Netherlands where English is used to deliver content knowledge in History, Dutch-speaking children learn English through the study of History for several hours per week. In the same school, Turkish-speaking children learn English through History whilst also learning Dutch through the other subject areas of the day. The linguistic landscape of their day remains much more complex than those of dominant-language speakers, and this must be taken into account when considering the implementation of CLIL approaches.

3.6.2.9 Assessment in literacy

Assessment

Formative – assessment **for** learning, conducted during the learning cycle to inform teaching and improve learning

Summative – assessment **of** learning, conducted at the end of the learning cycle to describe achievement

Assessment has traditionally been described in two ways: formative and summative. **Formative** assessment occurs through the teaching and learning process, essentially to inform the process, whilst **summative** assessment occurs at the end of the process, essentially to provide an account of the extent of the learning engendered by the process. Formative assessment could be described as having the primary purpose of improving student learning, whilst summative assessment's purpose could be summarised as providing a measure of competence (Wiliam, 2011).

Many educators warn that externally delivered summative assessments may produce reductionist pedagogies focused solely on achievement in these assessments because of their high-stakes status (Hutchinson & Young, 2011; Klenowski, 2011), and some studies find evidence of this (e.g., Adoniou, 2012). As summative assessments become increasingly standardised, nationalised, and even internationalised (e.g., PISA, PIRLS), researchers have become concerned that formative assessments, or assessment for learning, may become marginalised as teachers focus instructional activity upon tasks specific to achievement in high-stakes standardised tests, for example, practice tests (Klenowski, 2011). These concerns are compounded by evidence that teachers have varying skills and knowledge in conducting

valid and reliable formative assessments (Edwards, Turner, & Mokhtari, 2008; Hutchinson & Young, 2011; Klenowski, 2011). This feeds a popular perception that external summative assessments are more valid than internal formative assessments, furthering marginalising teacher-based assessments. However, others suggest that these external assessments can be tempered by attention to "intelligent accountability" where accountability measures "do not distort the purposes of schooling: and measures that encourage the fullest development of every pupil" (Cowie & Croxford, 2007, in Hutchinson, 2011, p. 63).

3.6.2.9.1 Assessment for learning, assessment of learning In recent years, the terms "formative" and "summative" have been increasingly replaced by the terminology "assessment for learning" and "assessment of learning".

The following have been identified as characteristics of effective assessment for learning:

- embedded within a view of teaching and learning;
- students know and understand the learning goals;
- students participate in the assessment;
- feedback points to next steps and explains how to take them; and
- premised on high expectations for all students (adapted from Wiliam, 2011, p. 10).

"Assessment for learning" prompts questions of what is to be assessed and how it is assessed. It may involve the construction of "fit for purpose" assessment items, or the use of "authentic", or the term used by the New Zealand education authorities, "naturally occurring evidence" (Hipkins, 2012). According to the New Zealand Qualifications Authority (2011),

"Naturally occurring evidence is collected from a range of real contexts and obtained over a period of time" (in Hipkins, 2012, p. 98). What differentiates this from teacher-constructed formative assessments is the explicit intent that they are not constructed assessments, rather, that assessment occurs of authentic communicative or literate events – and that this occurs over time, rather than at a point in time. Hipkins argues that using naturally occurring evidence allows for a more valid assessment. She says that language and literacy competence is "complex and contextually situated" and therefore must be observed and assessed in the service of situated tasks in a range of contexts and across time. This is an approach also recommended by Edwards et al. (2008), who also suggest that the collection of data longitudinally and across contexts not only provides a more valid dataset for analysis but also serves to focus teachers' own reflective processes on the task of assessment.

Researchers report a tension between assessment for learning and assessment of learning, describing an "unfortunate imbalance between the call to account for what students learn, and the need to create the classroom conditions under which they can and should learn" (Edwards, 2008, p. 682). As such, assessment of learning via external standardised tests can negatively impact upon student learning. Numerous meta studies have found a positive correlation between effective teacher assessment **for** learning and improved student outcomes (Hattie, 2009; Wiliam, Lee, Harrison, & Black, 2004).

However, Hutchinson and Young (2011) find that it is possible to align the potentially conflicting interests of teacher-based formative assessments with externally mandated summative assessments. They describe the ways this has been achieved in the Scottish context. The Scottish government has described the following principles for assessment in school. Assessment should:

- be fair and inclusive;
- allow students to demonstrate what they have achieved;
- show depth as well as breadth of learning;
- be interactive; and
- be motivating (The Scottish Government, 2010).

Scotland has been implementing an assessment for learning approach in its schools since 2005. Figure 7 below illustrates their integration of assessment for learning, assessment as learning, and assessment of learning. In their conceptualisation of assessment, there is the third dimension of assessment as learning which represents a meta-awareness and cognition of assessment.

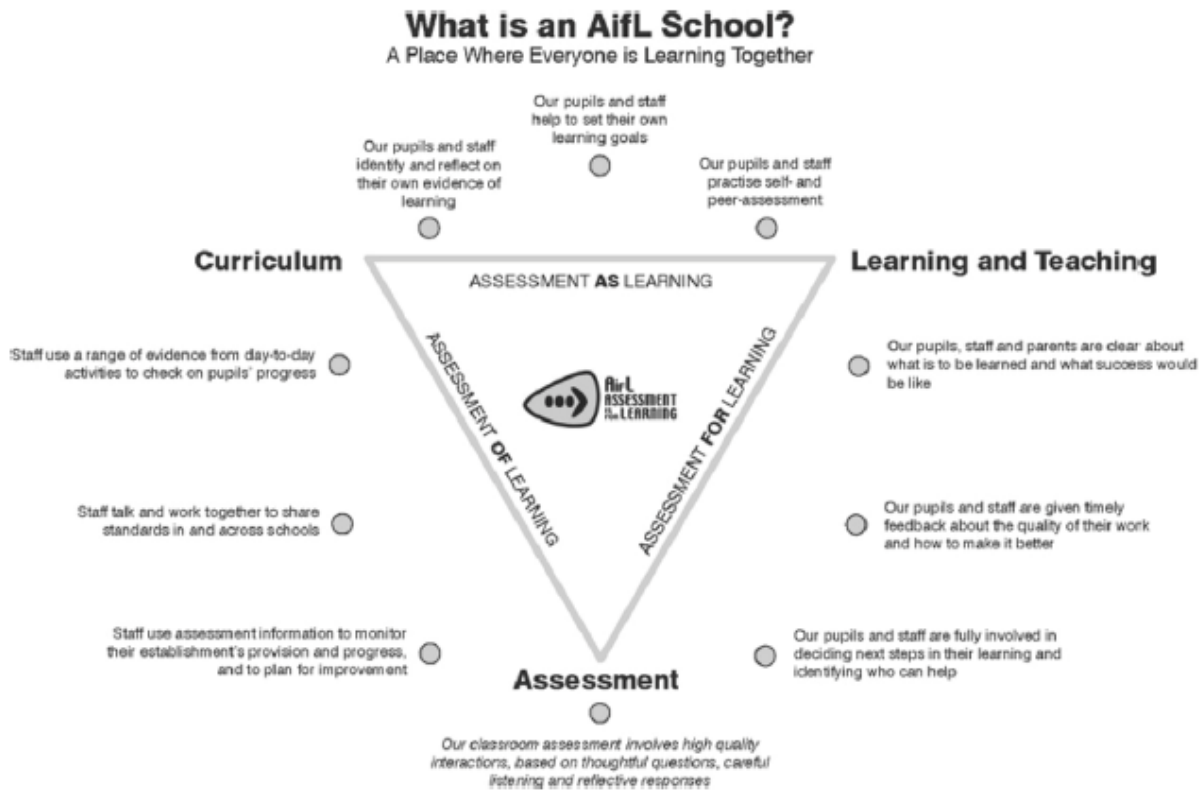


Figure 7 The Scottish Government's assessment for learning framework (The Scottish Government, 2010)

3.6.2.9.2 Feedback in assessment In recent years, the role of feedback in assessment has been highlighted as crucial to its effectiveness, particularly in relation to the development of student agency (Wiliam, 2011; Willis, 2010). Assessment for learning not only involves the teacher in providing feedback to improve student performance but "also requires the learner to become active in managing the process" (Wiliam, 2011, p. 5).

Kluger and DeNisi (1996) in Wiliam (2011, p. 6) provide a useful table of possible student behaviours, differentiated against the kind of feedback they receive.

Table 4
Possible responses to feedback interventions

Response type	**Feedback indicates performance exceeds goal**	**Feedback indicates performance falls short of goal**
Change behaviour	Exert less effort	**Increase effort**
Change goal	**Increase aspiration**	Reduce aspiration
Abandon goal	Decide goal is too easy	Decide goal is too hard
Reject feedback	Feedback is ignored	Feedback is ignored

Source: Kluger and DeNisi, 1996 in Wiliam, 2011, p. 6.

The variability of possibilities in student responses serves as an important reminder that student autonomy and agency are crucial components of effective assessment (Edwards et al., 2008; Wiliam, 2011).

Timing of feedback within assessment is also important, with the research suggesting that immediate feedback is required for students who are learning new concepts, whilst delayed feedback can be beneficial for students who are applying knowledge to new contexts (Wiliam, 2011).

3.6.2.9.3 Teacher knowledge of assessment Klenowski (2011) has described essential teacher assessment knowledge as: knowledge of fundamental assessment design, assessment as "fit for purpose", and assessment as positively geared towards teaching and learning. As such, teachers require a repertoire of assessments for use in the classroom. In Hallinger, Walker, and Lee's 2010 evaluation of effective practices in the IB, they found that a majority of MYP coordinators would find it helpful to have additional internal standardised assessments both of and for learning (Hallinger,

Walker, & Lee, 2010). They identified that such assessments would aid the transition from the MYP.

4. Document Analysis

4.1 Introduction

In this section of the report we provide a discussion of the document analyses. The analyses were conducted with direct reference to the key themes arising from the preceding Literature Review. The discussion is divided into the following sections:

- methodology used for the document analysis;
- an overview of commonalities found in the analyses;
- a discussion of the PYP document analysis; and
- a discussion of the MYP document analysis.

The analysis of continuum documents has been incorporated into both the PYP and the MYP discussions.

The matrices which contain the raw data for the analysis discussion are provided in the Appendices of this report. The discussion of the findings recorded in the matrices describes the strengths, gaps and opportunities for curriculum, approaches to teaching and learning, and assessment in the primary and middle years programmes in relation to the five literacy themes identified from the Literature Review.

4.2 Methodology

The document analysis used an inductive thematic analysis methodology (Guest et al, 2012). This involved the identification, in consultation with the IB, of five key themes arising from the Literature Review, a first reader reading through and coding identified themes within all documents provided by the IB line by line. This was synthesised into a series of matrices (at Appendices E to H) and verified by a second reader.

Two basic coding matrices were developed for interrogating and coding IB documents in relation to:

a. language and literacy objectives and goals in the curriculum; and
b. approaches to teaching and assessing language and literacy.

Each matrix used a similar coding structure, with some variations depending on document source, that is, whether they were PYP, MYP, or continuum documents, and whether language and literacy goals and objective or teaching and assessment issues were the focus of the analysis. The vertical dimension of all matrices remained constant, consisting of the set of literacy themes derived from the literature review. The five literacy themes follow.

4.2.1 Literacy themes

4.2.1.1. Theoretical perspectives Using this code, documents were examined for reference to a theoretical perspective. References to theoretical perspectives are considered in the light of the linguistic, psychological and neurological research traditions that inform theories of first and second language acquisition identified in the Literature Review, notably, behaviourism, nativism, and social interactionism. Consideration was given to the principal literacy pedagogies – didactic, authentic, functional, and critical literacy, also discussed within the Literature Review.

This code identified references to language and literacy learning approaches that arise from particular theoretical perspectives – for example, in the way language and literacy development is conceptualised and represented. Whilst the code simply required mention of a theoretical perspective, the extent to which documents set out a coherent and consistent theoretical position on language and literacy is discussed in accompanying commentary. The theoretical perspective code also provides an overview of key programme approaches.

4.2.1.2. Basic literacy skills Using this code, documents were examined for reference to listening, speaking, reading, and writing skills, as they were developed and applied in the language of instruction. The code also identified references to foundational literacy skills such as coding (encoding and decoding) practices, text meaning practices (text participant), and pragmatic practices (text user). This included references to text types and genre.

Whilst the code simply required mention of basic literacy skills, accompanying commentary will discuss whether the documents provide a level of detail useful for teaching and assessment. Commentary also addresses how these literacy skills are developed over the continuum, with particular attention to key transition points.

4.2.1.3. Disciplinary literacy Using this code, documents were examined for reference to the specialised nature of literacy within the disciplines, that is, the social, semiotic, and cognitive practices particular to individual disciplines, the nuanced development of CALP, (as discussed Section 1 of the Literature Review) and literacy tasks specific to individual discipline areas. This code also identified references to practices and strategies that support the development of disciplinary literacy and the shift in language demands across the continuum over the years of schooling, with particular reference to key transition points.

4.2.1.4. New literacies Using this code, documents were examined for reference to multiliteracies, that is, multiple communication modes, including linguistic, visual, audio, gestural, spatial, and multimodal systems, and the multiple cultural and linguistic differences that exist within and between groups that influence the kind of language we use and when and where we use it.

This code also identified references to critical practices (text analyst) and the transformative potential of literacy learning, that is, its potential to empower citizens who make language rather than simply use it. The accompanying commentary addresses the extent to which IB documents reflect and/or pre-empt the demands of new literacies in new times.

4.2.1.5. Multilingualism Using this code, documents were examined for reference to additional language acquisition, the acknowledgement and use of students' mother tongue and the complexity of their linguistic profiles, and multilingual instructional practices that take account of students' linguistic resources. Given the role multilingualism plays in the development of intercultural understanding, this code also connected literacy development to the promotion of international mindedness.

The headings for the horizontal dimension of the matrices differed according to document source, that is, whether they were PYP, MYP, or continuum documents and whether language and literacy goals and objective or teaching and assessment issues were the focus of the analysis. PYP, MYP and continuum documents were coded using separate matrices.

4.2.1 Coding literacy objectives and goals

The curriculum documents provided by the IB were examined to determine the ways and extent to which the IB and in particular the PYP and MYP reflect the research base in how they describe literacy objectives and goals. Analysis included whether identified themes are referred to in relation to objectives and goals, and, if so, the depth and level of detail with which they were described at different levels of documentation. For the PYP and MYP matrices, horizontal codes covered the general documents (principles and guidelines) through to more targeted documents (unit planners). Because continuum documents do not provide the same level of specificity, the two headers Subject Group Overview/Units of Inquiry and Planning for Learning were combined.

Curriculum: literacy objectives and goals for PYP and MYP (coding matrix 1)

Literacy theme	General guidelines	At subject level	Approaches to learning (trans skills) concepts	Subject group overview/units of inquiry	Planning for learning (planners)

		Transdisciplinary themes			
Theoretical perspective					
Basic literacy skills					
Disciplinary literacy					
New literacies					
Multilingualism					

Figure 8 Literacy objectives and goals for PYP and MYP

Curriculum: literacy objectives and goals across the continuum (coding matrix 1)

Literacy theme	**General guidelines**	**At subject level, transdisciplinary themes**	**Approaches to learning/ concepts**	**Planning for learning**
Theoretical perspective				
Basic literacy skills				
Disciplinary literacy				
New literacies				
Multilingualism				

Figure 9 Literacy objectives and goals across the continuum

4.2.2 Coding approaches to teaching and assessing literacy

The documents provided by the IB were also examined to determine the ways and extent to which the IB, and in particular the PYP and MYP, reflect the research base in how they describe approaches to teaching and assessment. The horizontal axis headers remained constant for all three levels (PYP, MYP, and continuum) looking for evidence of the principles and practices that underpin the IB's approaches to teaching language learning at a broad level as well as explicit literacy teaching methods and strategies. Coding matrix 2 also covered the ways literacy development was addressed in each of the programmes and across the continuum as well as the attention paid to key transitions (from early to primary years and from primary to middle years). This matrix also focused on the ways the PYP and MYP assess literacy and the extent to which this is done explicitly or implicitly as part of other assessments.

Pedagogy and assessment: approaches to teaching and assessing literacy (coding matrix 2)

Literacy theme	General guidelines	Pedagogical approach to language learning	Evidence of explicit literacy teaching methods & strategies	Attention to literacy development - transitions	Assessment of literacy: assessment criteria
Theoretical perspective					
Basic literacy skills					
Disciplinary literacy					
New literacies					
Multilingualism					

Figure 10 Pedagogy and assessment: approaches to teaching and assessing literacy

The commentary accompanying the findings recorded in the matrices describes the strengths, gaps, and opportunities for curriculum, approaches to teaching and learning, and

assessment in the primary and middle years programmes in relation to the five literacy themes. Findings from the analysis of continuum documents have been incorporated into PYP and MYP commentaries, to demonstrate how IB policies and principles play out at a programme level. This analysis, in conjunction with the Literature Review, has formed the basis for the recommendations we make in the final section of the report.

4.2.3 Documents consulted for the analysis

The IB provided three sets of documents for analysis against the identified literacy themes. The following documents were consulted:

4.2.3.1 IB continuum documents and codes

Language and Learning in IB Programmes (C1)

Learning in a Language Other than Mother Tongue in IB Programmes (C2)

Guidelines for Schools on Language Policy (C3)

Developing Academic Literacy in IB Programmes (C4)

The Role of Technology in IB Programmes (C5)

4.2.3.2 PYP documents and codes

Making the PYP Happen (PYP1)

Introduction to PYP Scope and Sequence (PYP2)

Language Scope and Sequence (PYP3)

Developing a Transdisciplinary Programme of Inquiry (PYP4)

A Model of Transdisciplinary Learning (PYP5)

Language Scope and Sequence Case Studies (PYP6)

4.2.3.3 MYP documents and codes

MYP: From Principles into Practice (MYP1)

Language Acquisition Guide (MYP2)

Language and Literature Guide (MYP3)

Sciences Guide (MYP4)

MYP Subject Area Guides – Learning Objectives (MYP5)

TSM[1] MYP1 Language and Literature Overview – Example 1 (MYP7)

TSM MYP1 – Language and Literature Tiered Overview – Example 3 (MYP8)

TSM MYP1 or 2 – Unit Plan (2_e) (MYP9)

TSM MYP5 – Unit Plan (7_e) (MYP10)

4.3 Overview of commonalities in the document analysis

The IB's key language policy document, *Language and Learning in IB Programmes*, sets out a framework of language learning domains, grouped under three strands.

a. learning language – discrete skills, BICS, literacy and the art of language;
b. learning through language – CALP; and
c. learning about language – literary analysis, critical literacy.

Figure 11 illustrates the ways the language domains correlate with the themes identified in the Literature Review, which then provided a frame for the document analysis in this section of the report.

[1] Teacher support material

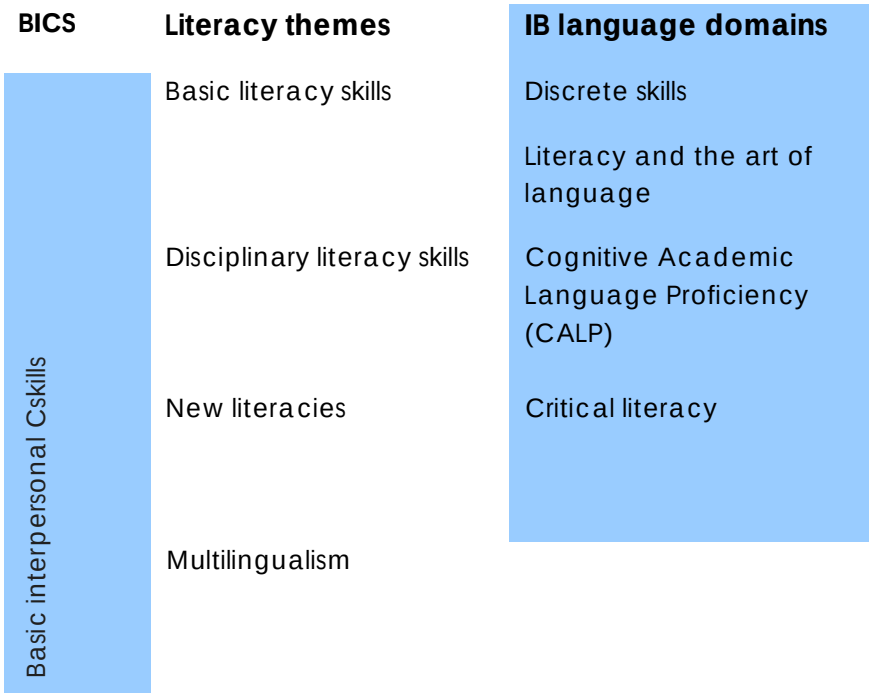


Figure 11 Relationship between the IB language domains and project analysis themes

4.3.1 Constructivism versus social constructivism

Theories of learning

Constructivism – learning is an innate capacity, facilitated by others; closely aligned with nativist theories of language acquisition

Social constructivism – learning is a socially mediated event, guided explicitly by others; closely aligned with social interactionist theories of language acquisition

The IB commitment to a constructivist theoretical frame is clearly evident throughout the documentation, from the broad principles continuum documents which run across the programmes to the planning documents in the individual programmes.

However, there is a disjuncture between the strong commitment to constructivist learning ideologies and the IB's description of language as a socially mediated construct, as provided in the overview documents, where language is defined as a social act and a vehicle to engage with the world. That is, there is a tension between a description of **learning** as constructed from within, and a description of **language** as constructed with others.

The consequence of this disjuncture is that the pedagogy, planning, and assessment documents do not explicitly describe the ways in which languages are used but instead simply offer the opportunities for the language to be used. There are generalised observations that students who read extensively and who are exposed to academic language will develop skills in that academic language. This stands in contrast to the social constructivist description of language to be found in the language policy document *Language and Learning in the IB Programme*, where functional descriptions of language learning are prominent, for example, in the descriptions of the language and text features that characterise various genres, such as a report, an explanation or a persuasive essay.

Genres are social constructions rather than texts that come naturally to a writer or a reader. As such, students require induction into their language and structure. This induction is particularly crucial for students for whom the language of school instruction is not their mother tongue. As their interactions with the language of the school are often limited to their interactions within the school, they require more explicit scaffolding and support into the language of instruction.

4.3.2 Language versus literacy

Language – the set of tools we draw upon to communicate

Literacy – the manifestation of our communication, i.e. the texts we produce

The importance of language and literacy, and their fundamental role in learning, is clearly evident throughout the IB documentation in both the PYP and MYP. There are many references to the broad literacy processes that are integral to the IB's inquiry approach. However, apart from a reasonably thorough description of the basic skills in the PYP *Language Scope and Sequence*, there is no detailed description of the precise **ways** language demands increase in complexity over the years of schooling, nor **how** language differs in fundamental ways across the different subject areas in order to produce the necessary literacy texts. General frameworks for describing these shifts in language exist via the BICS and CALP framework, but there is no guidance on what the language would look like within this framework, particularly as students move into the realms of academic literacies.

Language and Learning in IB Programmes notes that as students progress through school they are required to read and write increasingly academic texts in the subject areas. The document provides some very brief examples of the kinds of language that appears in such texts as follows:

- the increased density of low-frequency and technical vocabulary – much of which, in the case of English, comes from Latin and Greek sources (for example, photosynthesis, revolution); and
- increasingly sophisticated grammatical constructions (for example, the passive voice).

However, these brief examples are not further elaborated elsewhere in the documentation, for example, in the subject overviews or unit planners, which is where teachers are most likely to encounter the need to understand the language specificity of the content area.

4.3.3 Grammar There is clearly a theoretical space within the IB for more attention to a description of language features across disciplines and across the years of schooling. In *Language and Learning in IB Programmes*, a clear case is made for the relevance of such grammatical features.

The document acknowledges that traditional grammar pedagogies which have presented language as devoid of context have been supplanted by the development of functional grammar pedagogies which focus on teaching how language works through the examination of language in use. Such grammar pedagogies are ideally suited to an IB inquiry approach. As *Language and Learning in IB Programmes* states, "Since language has a central role in the construction of meaning and knowledge, the potential of functional and other modern approaches to grammar as a way to better understand how academic language can be learned is particularly relevant."

4.3.4 Multilingualism Finally, the IB's commitment to multilingual approaches to curriculum planning and learning is exemplary. The IB is quite obviously at the leading edge of understanding the ways language is learned, and the complex linguistic profiles students possess. However, this strong description of multilingualism as a resource and an asset is let down by an apparent lack of explanation and guidance on how these principles can be achieved in the everyday practice of planning and assessment within the IB programmes. This observation is explored in detail in each of the programme-specific discussions which follow.

4.4 PYP Document Analysis Discussion

This discussion is organised under the five themes identified from the literature review which formed the basis for the analysis of IB documents. The five themes are: theoretical perspectives, basic literacies, disciplinary literacies, new literacies, and multilingualism.

4.4.1 Theoretical perspectives

4.4.1.1 Strengths As noted above, the IB commitment to a constructivist theoretical frame is clearly evident throughout the documentation, for example, in the general statements which advocate a focus on purposeful learning that emphasises the active construction of meaning, through to the organisation of learning through programmes of inquiry.

The use of key deep concepts – *form*, *function*, *causation*, *change*, *connection*, *perspective*, *responsibility*, and *reflection* – to organise learning supports the theoretical position that deep learning is generated through inquiry learning. This theoretical coherence supports the delivery of the PYP. It aids teachers in their planning and delivery and supports students in their learning.

With respect to literacy and language learning, the commitment to constructivism is evident through the many descriptions of the importance of language for use. Language is identified as the vehicle for inquiry. The units of inquiry expect a well-balanced programme to provide meaningful and well-planned opportunities for learners to participate as listeners, speakers, readers, and writers. And this expectation is evidenced through the transdisciplinary skills and key concepts which focus on language in use. This is exemplified in the verbs attached to these skills, for example, using mathematical vocabulary and symbols, and interpreting and evaluating data gathered to draw conclusions.

4.4.1.2 Gaps However, as noted in the introduction to this document analysis, there is a disjuncture between the strong commitment to constructivist ideologies and the IB's description of language as a socially mediated construct – where language is defined as a social act and a vehicle to engage with the world. That is, there is a tension between a description of **learning** as constructed from within and a description of **language** as constructed with others.

The PYP documents are focused on descriptions of language in use (constructivism), but there is less description of what this language is and how instruction of this language may occur (social constructivism). Given the role of language as a transdisciplinary element in the PYP, the potential outcome is that students will not have the language required to enact the inquiry learning, or to make their learning visible to others.

For students for whom the language of school instruction is not their mother tongue, a constructivist approach is likely to be inadequate. When the school language is the vehicle for inquiry, they are disadvantaged by their lack of access to that vehicle.

These students benefit from a social constructivist approach to language teaching – where learning is achieved through the scaffolded interactions of teacher and student. In a social constructivist approach there is an interdependence where either party may be the expert in the interaction, scaffolding the other. For example, a student may scaffold a teacher into the language of gaming or the teacher may scaffold the learner into the language of the science report. As most of the assessed language in schools is academic language, which has been socially constructed within academia, it is most likely that teachers will often be the experts in the language demands of the school and will need to play an active role in scaffolding students into academic language.

4.4.1.3 Exemplification – Mathematics We can look at the subject Mathematics as an example. Many students will require explicit instruction in the linguistically bound Mathematics competencies of communication and using symbolic and technical vocabulary. Whilst PYP documents say students are expected to **use** mathematical vocabulary and symbols, the students may need instruction in that vocabulary and how it is used in different ways in Mathematics than it may be in other subject areas.

Pierce and Fontaine (2003, p. 239) suggest "the depth and breadth of a child's mathematical vocabulary is more likely than ever to influence a child's success in math". Words are used precisely in mathematical texts and in ways not encountered in any other learning area. They may be words used in more common-sense ways in everyday speech. As noted in the Literature Review, in English, for example, "**Find** the value of x" does not require the learner to simply look for something but to complete an algorithm. "Table" can mean "times table" whilst having other meanings outside the classroom and in the other discipline areas, for example, timetable, water table, table and chair, to table a report. And the everyday use of half, as in "I don't know what I'm doing half the time", does not carry the same precise meaning of quantity that it does in Mathematics (Adoniou, 2014).

4.4.1.4 Opportunities within the PYP The PYP documents do offer the possibilities of explicit teaching and social constructivist approaches – that is, social constructivist approaches are not precluded in the IB approach to teaching and learning. They can be seen, for example, in the PYP planner where there is provision for some subject-specific front-loading experiences prior to application within a unit of inquiry, and in the suggestion that direct teaching of the whole class is considered suitable for teaching procedural knowledge.

A variety of scaffolded learning experiences, with the teacher providing strategies for students to build on their own learning, is acknowledged in the documentation, and this pedagogical approach is described extensively in the key document *Language and Learning in the IB Programme.* However, there is little guidance at implementation level on which language and literacy skills would need to be scaffolded.

Moreover, the PYP's principle of acknowledging the prior learning of students and building upon that knowledge in order to plan learning experiences is a good match for social constructivist pedagogies which acknowledge that not all students will bring the same knowledge and experience to school and may require more explicit teaching and scaffolding. This may be foregrounded within forthcoming PYP documentation.

4.4.2 Basic literacy skills

4.4.2.1 Strengths The PYP acknowledges basic literacy skills are requisite to make the "step up to face the greater demands made in the PYP curriculum". These basic literacy skills are generally well described in the four continua contained within *Language Scope and Sequence*: listening and speaking, viewing and presenting, reading, and writing.

The documentation is clear that basic skills are to be taught within authentic contexts, for meaningful purposes, sitting well within the inquiry approach to learning which is key to all IB programmes. Importantly, the PYP documents make clear that the fundamental aim of language is to create meaning and the aim of language learning should be an appreciation of the richness of language rather than language study as an examination of grammar and syntax in a decontextualised manner.

These descriptions of language demonstrate a social constructivist perspective on language. There is recognition that different types of texts serve different purposes and the structures of texts differ according to audience and purpose. *Language and Learning in IB Programmes* describes the influence of functional grammars with the use of writing as a way of understanding how the language and text features that characterise various genres (such as a report, an explanation, or a persuasive essay) achieve their communicative purposes.

The case studies illustrating the use of the *Language Scope and Sequence* also reflect this social constructivist perspective. For example, the Language Addendum for the unit Who We Are: People Celebrate All Over the World for Many Reasons identifies that basic literacy skills, such as different types of texts, serve different purposes and the structure of different types of texts includes identifiable features.

4.4.2.2 Gaps Although PYP documents contain strong descriptions of literacy for use, and for meaningful and communicative purposes, there are very few descriptions of how we build these skills. There is an implication throughout the documents that literacy will be acquired through doing – through reading or writing, or through researching or inquiring. This ignores the explicit apprenticeship that many students will require if they are to perform in the different socially constructed registers of the school. This is explicated below through the lenses of **planning** and **assessment**.

4.4.2.2.1 Planning As has been discussed previously, literacy is a communication practice dependent upon language – "a language-based semiosis" (Kress, 1997, p. 20). The effectiveness of our literacy, or our communicative effectiveness, is dependent upon our efficacy with language – our repertoire of language tools. That is, our literate capacities are dependent upon our language resources. Whilst the planning and support documents offer some good descriptions

of basic literacy skills, there is often a conflation of *literacy* and *language* which leads to an obscuring of the kinds of language knowledge students may require to achieve identified literacy outcomes.

As an example of this observation we can look at the unit Who We Are: People Celebrate All Over the World for Many Reasons, where descriptions of assessment for a letter-writing task are provided. These criteria assess broad literacy outcomes, that is, the writing of a letter using correct voice and a socially acceptable structure to inform the reader of a celebration. However, the success of these broad communicative **literacy** outcomes is dependent upon the students' knowledge of **language**, and their ability to manipulate language to achieve those outcomes. For example, the students' success in organising their letter at a structural level with a date, address, greeting, and a body organised into paragraphs will be insufficient if they are unable to write structurally correct sentences. Their ability to recognise formality and informality in letters will be dependent not only upon the extent of their vocabulary but also upon their knowledge of how phrases and dialogue operate in both formal and informal registers.

Language Scope and Sequence does provide a good overview of basic literacy skills, and there are some more foundational language skills embedded within these. But these are presented as lists with no organising strands. So, for example, in Phase 3 writing, general literacy behaviours like "keep a log of ideas to write about" are found in the same long list of descriptors which include language skills like "use increasingly accurate grammatical constructs" (although it must be noted there is no guidance as to what these increasingly accurate grammatical constructs might be).

This conflated organisation of language and literacy skills, and the somewhat generic descriptions of those skills and knowledge, also means that the skills are not easily tracked

across the developmental phases, making it difficult for a teacher seeking to track a student's progress in a particular skill area.

For example, spelling is described as follows in *Language Scope and Sequence*:

- Phase 3 – use familiar aspects of written language with increasing confidence and accuracy, for example, spelling patterns, high-frequency words, high interest words;
- Phase 4 – use knowledge of written code patterns to accurately spell high-frequency and familiar words; and
- Phase 5 – use standard spelling for most words and use appropriate resources to check spelling.

It is difficult to see what the development in spelling looks like across the three phases – Phase 3 and 4 appear to be the same, and it is unclear what "written code patterns" might be. This lack of specificity makes it difficult to identify language outcomes to include in programme planning – but it also makes it difficult to assess the development of language skills.

4.4.2.2.2 Assessment As the PYP planning and assessment currently stands, the assessment of basic literacy and language skills (indeed all literacy skills) is dependent upon their original identification in the planning stage. Teachers explicitly assess what they have explicitly planned for. Whilst there is nothing to preclude a teacher from explicitly planning for language outcomes, there are not many places they can go to find what these language outcomes might be.

4.4.2.3 Opportunities There is an opportunity to work with *Language Scope and Sequence* to organise existing outcomes into threads of language descriptors and literacy descriptors. Work could then be done to identify gaps in the existing descriptors and to map skills across the phases to better describe the development of those skills.

For example, the existing spelling descriptors could be expanded to describe the range of knowledge required for effective spelling (for those languages with alphabetic principles). This might include:

- the ways in which the same sounds may map onto different combinations of letters, (for example, in English bl**ue**, wh**o**, thr**ough**, m**oo**);
- the ways in which words are made from base words and affixes and how this morphological knowledge can dictate spelling (for example, in English the spelling of "jumped" is morphological – "jump + ed" – rather than phonological – "jumt"); and
- the ways in which the origin of the word may affect pronunciation and spelling (for example, the origin of the word "yacht" from the Dutch "jaght").

This further development of the *Language Scope and Sequence* would allow teachers to realise the objective of the IB to ensure all students learn basic literacy skills. It would also provide a useful reference point for the identification of language outcomes to incorporate into planning and to account for in assessment criteria for inquiry units.

4.4.3 Disciplinary literacy

4.4.3.1 Strengths The IB clearly recognises a language learners' shift from BICS to CALP (Cummins, 2000). This is essentially the shift from concrete and everyday language to the technical and specialised language that is required as learners move through school. CALP incorporates disciplinary literacy.

The literacy of each discipline or each subject area is determined by differences in the ways language works in each of the disciplines. These fundamental language and literacy differences occur because each discipline has developed from specific ways of thinking about the world, and the consequent communication of those thoughts and understandings (Hynd-Shanahan, 2013).

Disciplinary literacy is alluded to throughout the PYP documents. For example, the PYP subject area annexes describe aspects of disciplinary literacy. In Mathematics it is expected students will become competent users of the language of Mathematics and begin to use it as a way of thinking, and in Science it is expected students will learn to see the world from a scientific perspective.

4.4.3.2 Gaps However, disciplinary literacy is not explicitly addressed in *Language Scope and Sequence*, which focuses on generic literacy skills. The consequence of this is that the language of the subject areas is not described, making it harder for teachers to identify and include in planning. Disciplinary literacy skills and their attendant subject-specific language features are therefore unlikely to be assessed in units of inquiry.

Without a more elaborated description of the disciplinary language and literacy skills, it is difficult to define the threshold level of basic literacy development which *Language and*

Learning in IB Programmes describes as necessary before students can successfully engage with "sophisticated understandings of language use in increasingly abstract and decontextualised settings".

This lack of attention to the specific language demands in the subject areas makes it more difficult for students to achieve against the broader conceptual outcomes, whether through transdisciplinary units of inquiry or as stand-alone subjects.

Transdisciplinary pedagogies and inquiry approaches require students to read disciplinary texts and to produce a variety of texts that draw upon foundational understanding of how knowledge is communicated in each of the disciplines.

For example, students may develop inquiry questions for a transdisciplinary inquiry around How the World Works and begin the research process. Depending upon their lines of inquiry, the research process will differ in subtle but significantly distinct ways across the disciplines.

4.4.3.3 Exemplification – Science and History Science may involve conducting experiments, interpreting the results and presenting the findings, whilst in History the research skills involve researching sources of primary and secondary information, understanding contextual perspective in relation to the sources, synthesising the results, and presenting the information. These skills, often specific to the disciplinary area, require explicit teaching. They are the enactment of the socially constructed ideas of what it means to think, talk and write like a scientist or a historian.

These literacy skills are not only dependent upon the student's induction into the disciplinary way of thinking; they are dependent upon the student's induction into the ways in which language is used in specific ways within these disciplinary literacy skills. Students

may have a basic literacy understanding that language can indicate sequence – "first", "next" et cetera. However, sequencing language looks different across the disciplines. For example, sequencing words in historical source documents are often time related, for example, "that morning", "a decade later", "in the previous millennium", whereas in scientific procedures and explanations sequencing words are often process related, for example, in Science, "first the mixture is heated", "when the temperature reaches", "then", "after", "finally".

As a further example of the ways in which language works in complex ways in the disciplines, primary Science students are expected to reflect on their scientific processes, that is, the question "What could be improved?" or "What have we learned?" may require an answer such as "It **would have worked** better if I **had put** more cotton wool in the box". This is a conditional sentence structure in the past tense. This is not a part of the everyday spoken repertoire of this age group, nor is it a sentence structure they are likely to use in the language writing of narratives, for example. It is best taught explicitly in the authentic context of conducting and reflecting upon the scientific process.

The absence of explicit attention to disciplinary literacy demands becomes more problematic as students move towards secondary education. The ability to read and write academic texts is a key marker of success in secondary education (Shanahan and Shanahan, 2014) and an expectation that secondary teachers often have of graduates from primary school.

4.4.3.4 Opportunities As *Language and Learning in IB Programmes* stresses, the ways in which the disciplines construct meaning is a reflection of their conceptions of the world, and thinking differently requires using language differently. This induction into the socially constructed worlds of the disciplines needs to happen early in

schooling – and because it is a socially constructed world it does require explicit apprenticeship.

Language and Learning in IB Programmes makes a strong statement about the importance of early opportunities for the development of the academic language of abstract conceptualiaation and associated cognitive development in later schooling. This is also reflected in the U.S. shift to Common Core State Standards and the introduction of disciplinary literacies in the early years of schooling in response to research showing that secondary students are ill prepared for the more complex texts they meet in secondary school.

The IB's strong commitment to the development of critical thinkers is the ideal platform upon which to base an articulated development of disciplinary literacy in the PYP. The development of disciplinary literacy skills is important not just for successful reading of academic texts in the subject areas but also for the development of critical thinking skills (Billman & Pearson, 2013; Fang & Schleppegrell, 2010b). Crucially, transdisciplinary pedagogies do not negate the need to pursue disciplinary literacies – rather, they provide the space to explore the disciplinary literacies in authentic learning contexts.

Disciplinary literacy skills and their foundational disciplinary language features could be articulated within *Language Scope and Sequence*. This could illustrate the shift from the everyday registers of BICS to the academic registers of CALP. Additionally, subject-specific language continua could accompany subject documents, perhaps as language addenda.

It is important to note that the inclusion of disciplinary language and literacy skills is a challenge facing curriculum developers around the globe, and key to the challenge is building teacher capacity to teach these skills. Research finds discipline area teachers are often ill-equipped to teach the literacy of their subject areas (Collin, 2014) and, equally,

generalist literacy teachers struggle with the literacy discourses of the disciplines in which they have no expertise (Carney & Indrisano, 2013; Fang, 2014; Fang & Coatoam, 2013; Fenwick, 2010; Goldman, 2012; Hillman, 2014). Thus, the elaborated description of disciplinary language and literacy within the documents would need to be accompanied by professional learning and support documents for teachers.

4.4.4 New literacies

4.4.4.1 Strengths The new literacies describe critical literacy approaches as well as the multiple semiotic or communication modes: the visual, aural, spatial, linguistic, and gestural. Technology literacy appears as one of the multiliteracies in an IB education.

The PYP is particularly strong on the development of critical thinkers and global participants and the role language plays in this. Language is identified as key to conceptual development and critical thinking. The key concepts for inquiry learning are focused around processes which require a critical thinking approach, for example, in questioning, making connections between previous and current learning, making predictions, reporting findings, clarifying existing ideas, researching and seeking information, or taking and defending a position.

The Role of Technology in IB Programmes recognises that these processes are not limited to print or oral modes and that technology not only offers alternate modes but may also prompt new thinking. The technology document also recognises not only that new modes of communication require new literacy processes, but that language will be used differently across the modes.

An explication of the different modes of communication identified in the IB continuum documents on Language and Learning and Technology occurs sporadically throughout the PYP documents. There are examples of visual literacies, for example, in the transdisciplinary skills under communication skills: interpreting and analysing visuals and multimedia; understanding the ways in which images and language interact to convey ideas, values, and beliefs; and making informed choices about personal viewing experiences. Other semiotic systems are also described within communication skills: recognising the meaning of visual and kinesthetic communication; recognising and creating signs; and interpreting and utilising symbols.

Digital literacy skills are inferred in the AID framework for information and communications technology (ICT). The information strand of this organising framework points particularly to the ways in which basic literacy skills need to be adapted when applied in ICT formats, understanding how information can be authored, compiled, or remixed in digital environments. Information also involves analysis and critical thinking. The design strand points to making effective use of the multimodal affordances of technologies. The focus on technology to communicate and research signals the need to further develop multimodal literacy skills.

4.4.4.2 Gaps Whilst there is a strong presence of the new literacies skills throughout the documents, they appear in a less cohesive and trackable manner than basic literacy skills. This is likely to make it harder for teachers to locate them and include them explicitly in their planning.

Neither do new literacies skills appear as assessable items within inquiry units but as optional implementation methods when planning an inquiry. That is, ICT may be used as a means by which to communicate learning from an inquiry unit through a digital presentation.

However, it is not clear how students have developed those multimodal skills and knowledge in order to build an effective presentation. Similarly, an assessment item may include the requirement to show evidence of a level of critical inquiry and thinking, but what is less evident is how students have been scaffolded into the literacy skills that would allow them to make critical thinking visible to others.

4.4.4.3 Exemplification – technologies The continuum technology document describes the broad principle that the use of technology should be seamlessly integrated into inquiry learning and that ICT is part of a repertoire of tools for students and educators. A number of processes are then given as illustrations of this, including the ability to incorporate design thinking into communicative products. This would require an understanding of which design features are possible and what individual design features achieve.

To achieve this, in primary school we might expect students to understand:

a. that visuals give extra information to a text;
b. that images are chosen specifically for a range of purposes, in much the same ways that written genres serve specific purposes, for example, informational and captioned diagrams of objects (e.g., science equipment), flowcharts (e.g., the water cycle), or evocative imagery to supplement information in a narrative by providing information about setting or character relationships, for example; and
c. how to select and use different visual tools for their selected purpose. This includes technical knowledge, for example, basic Photoshop skills or hand drawing skills. But, importantly, it includes understanding the grammar of the visual, for example, using size to indicate proportionality in a science report, or colour in a narrative image to send messages to the reader which complement the text.

4.4.4.4 Opportunities The PYP is strongly positioned to provide a more articulated description of the development of the range of new literacies skills and the role they play in an inquiry approach to learning in a global community. This could be considered within the PYP review and incorporated into revised PYP guides.

Crucially, multimodal literacies need to be taught as both productive and receptive processes. Just as we expect students to both read and write print literacies, we need also to teach students to both read and create multimodal texts. Therefore, students must not only learn to create a life cycle diagram in Science; they must also learn to read the multiple messages contained within a life cycle diagram. For example, they need to be able to discern action, process, and the passage of time from the two-dimensional when looking at the life cycle of the frog.

Close attention to the development of multiliteracies' skills in the PYP will support the actualisation of the PYP commitment to transdisciplinary learning, as multiliteracies lie at the heart of intersemiosis and intersubjectivity – the space where deep and robust learning occurs.

4.4.5 Multilingualism

4.4.5.1 Strengths The PYP philosophical commitment to multilingualism and its benefits is clear and well described in the guideline documents, which outline broad principles for teaching and learning. Crucially, the PYP acknowledges the role of mother tongue in cognitive development and identity maintenance (see the discussions on Multilingual Pedagogies in Section 3 of the Literature Review). The PYP clearly recognises the importance of acknowledging individual students' language profiles and to build on their first language development.

As well as advocating for mother tongue maintenance, the PYP encourages mother tongue instruction even when this is not the instructional language of the school. Additional language learning is integral to the whole programme and a requirement for all students from the age of 7, although it may be taught as a stand-alone subject.

Language and Learning in IB Programmes uses the term translanguaging to capture the idea that learners develop and integrate new language practices into a complex dynamic multilingual repertoire, reflecting the latest research understandings about how languages are learned. In summary, the IB positioning on multilingualism is cutting edge and world leading.

4.4.5.2 Gaps *Language Scope and Sequence* is positioned as a document that can be applied to the development of any language the student is using. However, as it stands it cannot adequately describe the multiple and complex linguistic profiles of students in the PYP in varying contexts around the world.

Language Scope and Sequence does provide for the understanding that students are likely to be at different phases in the various modes. However, its current organisation and detail do not allow for a nuanced description of the multiple jagged profiles of each individual student, particularly those who are very new to either the instructional language or the additional language. It is most suited as a description of mother tongue general literacy development. A more fine-grained description of the early phases of language learning would be required to adequately track progress in the early phases of language learning.

Two scenarios illustrate this. First, a French mother tongue student in an English-medium primary school in Hong Kong in Year 4 may be operating at a Phase 1 level in English, a pre-Phase 1 level in Chinese, the school's additional language, and a Phase 3 level

in French (a language not taught or assessed by the school). The *Language Scope and Sequence* does not allow for a description of the multiplicity of this linguistic profile – but most particularly it is not finely nuanced enough to track the development of the language of school instruction, when that language is not the child's mother tongue.

Second, an English mother tongue student in an English-medium primary school in Year 4 may be operating at a Phase 3 level in English. New to the school and the PYP the student is likely to be pre-Phase 1 in their learning of the school's additional language, Chinese. The current *Language Scope and Sequence* does not provide a description of the important language awareness outcomes that the student is achieving in their journey in Chinese, and it is difficult to track the student's progress in Chinese as they may stay in Phase 1 for some time. Some description of indicators of movement within the phases is important.

A more detailed description of language learning would also aid teachers in complying with the IB recommendation in *Language and Learning in IB Programmes* that teachers record information in student language profiles, mapping their progress in order to support planning for future differentiation.

There also appears to be a gap between the space multilingualism occupies as a theoretical construct and an IB principle, and the space it occupies as assessable curriculum content within PYP documents. Although there are many opportunities to develop and access the multilingual resources of the students within units of inquiry, these opportunities are dependent upon the individual teacher noticing them and using them. Planned programming for multilingual learning outcomes is crucial if the strong theoretical positioning of multilingualism in the IB is to have an equally strong presence in curriculum implementation. Ultimately, the assessment of the multilingual/intercultural dimensions of

language and literacy is highly dependent on their identification as assessable outcomes in the planning stage.

4.4.5.3 Opportunities

In addition to *Language Scope and Sequence*, which, with some adjustments as indicated above, can be used successfully for the assessment of language for mother tongue speakers of that language, there is the opportunity to develop an additional language progression which can provide a more fine-grained description of progress and learning outcomes for those students for whom the language of instruction is additional to their mother tongue.

There are also many opportunities within units of inquiry to explicitly incorporate the multilingual and intercultural dimensions of language and literacy. The articulation of multilingual outcomes or strategies would support teachers to identify and incorporate these into unit planning and assessment. For example, in Who We Are, Sharing the Planet and How We Express Ourselves a strand of language awareness outcomes could be incorporated into *Language Scope and Sequenc*e. These might include points such as:

- many languages are spoken around the world and different languages may be spoken by family, classmates, and community;
- language is used in combination with other means of communication, for example, facial expressions and gestures are used to interact with others, and these may be different for different languages;
- different languages will use different structures for different text types, for example, English uses an imperative structure for instructions (“Mix the butter and sugar”), whilst Greek uses the first person for instructions (“I mix the butter and sugar”).

4.5 MYP Document Analysis Discussion

This discussion of the MYP document analysis is organised under the five identified themes from the Literature Review: theoretical perspectives, basic literacies, disciplinary literacies, new literacies, and multilingualism.

4.5.1 Theoretical perspectives

4.5.2 Strengths As evidenced in the PYP documentation, the IB commitment to a constructivist theoretical frame is present in MYP documents. The MYP stated goal in *Principles into Practice* is "the active construction of meaning by building connections between (current understanding) and new information and experience, derived from the **inquiry** into new content." This goal is supported through the ATL, which describe skills firmly situated within a constructivist paradigm, and through the advocacy of pedagogical approaches promoting "**student inquiry** into **concepts** through content in authentic **global contexts**". Unit planners also reflect this theoretical thread, where learning is described as the interplay between asking (inquiry), doing (action), and thinking (reflection).

4.5.3 Gaps Although there is a strong and coherent constructivist thread in the description of learning, as was noted in the PYP discussion, there is a disjuncture between this theoretical positioning of learning as student driven, and the IB description of language as socially mediated.

Language and Learning in IB Programmes provides a strong description of language as communicative, purposeful, and socially mediated. This implies there will be kinds of language which require explicit apprenticeship if users are to successfully communicate with other users. In schools this will include an apprenticeship into the academic language of school, but also the differing language and literacy requirements across disciplines (see the

discussions of disciplinary literacy in the Literature Review). Strategies that support explicit apprenticeship are not immediately evident in the MYP documentation, although there are many references to such approaches, as will be described later in this analysis.

Constructivist and social constructivist positions are not mutually exclusive of one another – they sit within the same theoretical paradigm which describes learning as "constructed" in the pursuit of real and purposeful activity (see the discussion of theoretical perspectives in the Literature Review). The social element is a recognition that these activities may take place in the company of others and that those others will contribute to the learning of the individual. When the context and the language of the learning activity are distant from the existing experiences of the individual, more "others" are required to model and provide explicit instruction. This is essentially what Vygotsky has described as the ZPD, a zone which Bruner has suggested can be bridged effectively by scaffolding; both were identified as theoretical informants in *Language and Learning in IB Programmes.*

The students who are most disadvantaged by purely constructivist approaches to learning are those for whom the language of the school is least reflective of their own language. For them, the distance between what they can do with the language of the school and what the curriculum is expecting them to do is too great. They require explicit instruction in the language demands of the subject and the task. They simply do not have the school language to draw upon to be able to construct their own learning. Given the role of language as an integral element in all IB programmes, including the MYP, and the fact that all learning is mediated by language, the potential outcome is that students will not have the school language required to enact inquiry learning or to make their learning visible to others.

These issues are elaborated upon further under the remaining themes in the following sections of this MYP document analysis.

4.5.4 Exemplification – language that requires explicit instruction

The following is offered as one example of language that would require explicit instruction to most students. An inquiry skill in the MYP is to be able to take and defend a position. Besides the critical thinking skills and content knowledge this would require, students must also have control of the language features that enable them to articulate and defend that position. Different languages have different language structures to achieve this, but all languages have specific language forms for doing so. As an example, the use of evaluative language in persuasive texts is common in most languages. The choice of verbs, for example, can suggest a strength or weakness in a position, as in "He seems to be saying" as opposed to "He clearly **states**".

In English, the use of modality is particularly important for taking or defending a position – although it is much less so in other languages. For example, the differences in modality between the following sentences is managed by the use of the modal verb and accompanying adverbs:

- Climate change **may** be responsible for coral bleaching.
- Climate change **will** be responsible for coral bleaching.
- Climate change **is likely to** be responsible for coral bleaching.
- Climate change **could possibly** be responsible for coral bleaching.

An understanding of the modality of these sentences is not intuitive to students learning English as an additional language; indeed, it is not intuitive to a significant proportion of native speakers of English. Students need to be shown the ways these modal words can indicate objectivity or subjectivity and degrees of opinion and fact.

4.5.5 Opportunities The continuum document *Developing Academic Literacy in IB Programmes* provides a framework for further developing descriptions of what CALP looks like. It provides a starting point for a further elaborated document which illustrates the academic language demands of the discipline areas, as well as what the language demands of higher order skills of synthesis and evaluation are, which are particularly pertinent to inquiry-based pedagogies.

The IB's commitment to constructivist learning, whilst positioning language as a social construct, is likely to result in some slippage between theory and practice in the classroom. Both the MYP documents and professional development courses for IB teachers could make the links between inquiry learning and scaffolded language learning more evident.

4.5.2 Basic literacy skills

4.5.2.1 Strengths The MYP recognises language complexity, and aspects of basic, disciplinary, and multiliteracies can be found throughout MYP documents. Appendices C and D identify instances where different literacies are inferred or stated explicitly in subject group objectives and ATLs. From this coding, we can see MYP recognises the importance of basic literacy skills. In particular, the two dedicated language subject guides *Language and Literature Guide* and *Language Acquisition Guide* acknowledge requisite basic literacy skills. For example, students are expected to:

- use appropriate forms of writing for different purposes and audiences;
- paraphrase accurately and concisely; and
- preview and skim texts to build understanding.

However, MYP references to basic literacy skills are generally as assumed knowledge, presumably on the supposition that these will have been taught in the primary years.

The MYP documents successfully identify the literacy **processes** which accompany their broad concepts. So, for example, the concept of *perspective* recognises that different perspectives often lead to multiple representations and interpretations. The literacy processes that would be relevant to this concept are provided in the description of the interdisciplinary tenets of the MYP: "develop critical and conceptual thinking skills by gathering and evaluating relevant data, analysing alternatives, considering potential consequences, and drawing conclusions".

4.5.2.2 Gaps Whilst broad literacy processes are evident in MYP documentation, the identification of the literacy skills and the attendant language knowledge required for the enactment of those skills is less evident.

Inquiry skills, such as being able to make and test theories and research and seek information, are dependent upon pre-existent basic literacy skills as well as the development of new, context-specific basic literacy skills. So an MYP teacher might expect that a student can read well enough to do the research for an inquiry question.

However, the basic literacy demands of secondary schooling are markedly different from the primary years. Basic literacy in the primary years describes the capacity of the student to work with concrete language to describe concrete processes. Basic literacy in the middle years shifts to an expectation that students can work with abstract language in order to describe more abstract processes and understandings. Increasingly, they are required to work with "authentic" texts, including journals, newspapers, opinion pieces, and online materials.

These texts "offer new language, new knowledge, and new modes of thought" (Hill, 2011, p. 2). Grammatical intricacy increases with larger numbers of multiclause sentences, which are harder to read and place a burden on working memory, and increases in lexical density. The basic literacy of the primary school is no longer sufficient, and the secondary school must continue to develop the basic literacy of the students to meet the more abstract and technical demands of the curriculum.

For example, in the unit Fantasy Film, the statement of inquiry focuses on the ways filmmakers use film conventions "to communicate a narrative and position an audience, through an analysis of fantasy films". Although this appears to be a multimedia based assessment, ultimately the students will be required to use basic literacy skills to communicate their analysis.

It is crucial then that the MYP not assume that students have "done" basic literacy. It is not an inoculation received in the early years of school that prepares a student for all their learning. Basic literacy skills are more complex than this (see the discussion of academic literacies of the Literature Review).

To rely on an assumption that basic literacy skills have been achieved in the primary years is problematic for three key reasons:

a. there will be students in the MYP who, despite speaking the language of instruction as their mother tongue, have not achieved those pre-requisite skills, perhaps as the result of cognition issues, for example, learning difficulty, or simply of environmental issues that have impacted upon their learning, for example, moving schools or countries;

b. there will be students for whom the language of instruction is new – remembering that language acquisition is not age related, so there may be MYP students at the early phases of language acquisition in the language of instruction; and
c. basic literacy skills continue to develop through the secondary years as the basic language and cognitive demands of the curriculum become more complex and abstract.

When basic literacy skills are assumed in this way in the planning, they are similarly assumed in the assessments. It is inevitable that students will be assessed on their language knowledge and basic literacy skills, as assessments require them to use their reading and writing skills in the delivery of the unit's assessable outcomes. As a consequence, basic literacy skills appear almost as a hidden curriculum (see the discussion on Language and Literacy Development in the Literature Review). The cognitive demands of the inquiry curriculum are often described in the IB documents in terms of literacy processes, but the literacy skills and language demands of those processes are not always clearly articulated. And it is not clear in subject group guides or unit planners where they are to be planned for and assessed.

4.5.2.3 Exemplification – literacy processes, literacy skills and language knowledge

Literacy and learning **processes** are referred to throughout the MYP documentation, for example, infer, research, evaluate. These are sometimes, but not always, further broken down into an exemplification of the literacy **skills** necessary for these processes, for example, comprehension skills, sentence structure, and paragraphing. However, what remains unarticulated is the **language knowledge** that would aid these comprehension skills, for example, understanding how cohesive devices work in the language of instruction.

One example of a cohesive device is how ellipsis may work. Ellipsis is the possibility in many languages to infer from what has already been said, as in the following example where the ellipsed phrase is illustrated in parentheses: "The Olympic Games are an example of a modern phenomenon with its roots in Ancient Greece. Drama and democracy are other examples [of a modern phenomenon with its roots in Ancient Greece]."

A further example explains the various levels of language and literacy skills required to successfully complete a typical MYP process. The ATL Research skills begin with the ability to "collect, record, and verify data", which is a broad **literacy process.**

A **literacy skill** necessary to successfully complete this process could be the ability to pose questions. Posing questions is key to both conceptualising the project for which you wish to collect data and the actual collection of data.

A considerable amount of **language knowledge** is required to pose questions – in some languages more than others. In English, for example, the linguistics of question posing is complex. Whilst many languages use intonation or simple word reversals to form questions, English has a range of complex question forms, many of which are invisible to the native speaker and very opaque to the English language learner.

Other languages will have their own literacy processes that make complex language demands, but the following is provided as an example of the language demands of questions in English.

When conducting surveys or interviews for research, students need to understand that different questions prompt different kinds of answers.

In the English language those different question types require different kinds of language knowledge. For example, we might pose the following question in History: "What

societal structures **did** the Romans have?" In this question the auxiliary verb **did** is in the past, whilst the main verb "**have**" stays in the present. In the answer to that question, the main verb shifts to the past – "They **had"**.

In Mathematics, an inquiry question may be "Which computer game **is** the most popular in our class?" where the verb stays in the present. When collecting the data, the students may use "do" to form the question "Do you play computer games?" or a range of question words like "which", "where", and "how many". The question words "how" and "why" are more suited to open-ended inquiry questions. Some question forms do not require a question word but instead are formed by word reversal, for example, "Are you from another country?"

4.5.2.4 Opportunities

4.5.2.5 Planning Language and literacy intersect with critical aspects of the MYP design for teaching and learning. Inquiry learning, the concepts, and ATLs are all mediated by language and provide fertile ground for developing rich language in students, which in turn would feed into sophisticated and nuanced literacy practices. Indeed, the MYP offers the ideal framework within which to learn literacy skills and language knowledge in context, and for meaning-driven and authentic communicative purposes.

Language is key to mediating thought and critical inquiry, which is foundational to inquiry learning. The IB's commitment to these principles would be better served by building explicit links between the **literacy processes** described throughout MYP documentation, and the **literacy skills and language knowledge** that are requisite for those processes. It is likely that this will require more explicit teaching of language and literacy throughout the delivery of the interdisciplinary and stand-alone units. The MYP already

allows for this, noting that the needs of students will differ, recommending that skills are taught explicitly and students are given structured opportunities to practise them (*Principles into Practice*). However, more guidance on what constitutes basic literacy skills and language knowledge is required.

4.5.2.4.2 Assessment The assessment processes within the MYP do not preclude the assessment of basic literacies, but they need to find their way into the unit planning in order to become formally assessable.

Currently basic literacies are likely to be assessed by default – that is, a teacher will note that a student has completed an assessment task with poor sentence structures or has shown poor comprehension of inferred information. These basic literacy skills are hard to ignore when students do not have them. The absence of these skills makes it impossible for them to display their content knowledge, but also impossible for them to engage with the more complex disciplinary literacies which are absolutely necessary by the middle years of schooling.

To address this, the MYP could more clearly articulate the basic literacy skills embedded within ATL and provide a more easily identified pathway for the development of basic literacy skills and their relationship to inquiry processes.

The MYP could further unpack their ATL skills to elaborate on the kinds of pre-requisite language and literacy skills that are embedded within the broader statements. In particular, the language knowledge required for these basic literacy skills could be explained.

This could be achieved through an elaboration of the ATL skills document, or a further elaboration of the CALP framework in an attachment to *Developing Academic*

Literacy in IB Programmes. It could even be an extension of the PYP *Language Scope and Sequence*.

4.5.3 Disciplinary literacy

4.5.3.1 Strengths The MYP acknowledges that a key challenge for students transitioning into the programme will be the increased demands of academic language. It identifies the role of language in contributing to academic success and in developing the ability to reflect critically. The MYP also shows a strong commitment to disciplinary literacy at a conceptual level. The subject guide objectives indicate that the disciplines have unique perspectives on the world, and students are encouraged to think like mathematicians or scientists. For example, all subject guides identify key and related concepts, which require students to be able to understand and use significant ideas within disciplinary contexts. Unit planners also explicitly mention the disciplinary literacies. For example, in the unit planner for the unit We All Need Someone to Lean On, students are expected to acquire and use accurate, age-appropriate, academic, and domain-specific vocabulary.

4.5.3.2 Gaps Whilst the MYP advocates an interdisciplinary approach, it is not entirely clear from the documents examined how this may look across the programme. In particular, there is no guidance on how literacy may be taught across the disciplines in ways that are informative to the classroom teacher.

Although disciplinary literacies are mentioned throughout the documents, there is no clear explication of the ways:

a. disciplinary literacies are linked to basic literacy, that is, the shift from everyday common-sense language to academic and specialist language and the ways this is

achieved through language, for example the nominalising of processes. This is a feature of a number of languages, including Spanish and English, and is demonstrated in the following:

- Everyday process language – "We produced the play in the open air."
- Nominalised language – "The open-air production."

b. disciplinary literacies differ from each other, that is, the lab report is different from the historical report; and
c. the language features specific to the disciplines, that is, the imperative sentences of the procedural text compared to the passive structures of explanatory texts, as demonstrated in the following:

- "Heat the water in a test tube."
- "The water is heated in a test tube."

At a more specific level, although the subject guide for Mathematics gives a reasonable account of the importance of talking and thinking like a mathematician, it is difficult to identify:

a. the ways mathematicians use language to think and talk about their discipline; and
b. how language learning in Mathematics may inform learning in another discipline. For example, work on spheres in Mathematics could involve an explanation of the meaning of "sphere" – a circular shape. The term could then be referred to in Geography, as "the Northern hemi (half) sphere"; in Science, as "the atmo (gas) sphere" ; and in History, as "the Romans' sphere of influence".

The clear articulation of disciplinary language outcomes alongside content outcomes would allow teachers to better target supplementary instruction – more content work or more language work. When the development of disciplinary language is not planned for, its assessment also becomes random rather than systematic. As it is, the assessment of disciplinary literacies is mostly implied in unit planner assessments. Therefore, it is important they are unpacked, named, and taught rather than being covertly assessed within the assessment of other objectives. This would allow a more nuanced and informed assessment of students' skills and allow teachers to ascertain whether students have acquired content knowledge despite missing disciplinary language skills, for example, being able to tell whether students have failed a Mathematics assessment because they could not do the maths content or because they could not read the question.

Without a clear and coherent description of disciplinary language and literacy within each subject guide it is difficult to plan for the systematic development of academic language. The risk is that the academic language demands at the beginning of the MYP are the same as they are at the end. In other words, there is no clear sequence of academic language and disciplinary literacy development over the programme and no scaffolding into that language.

Additionally, the absence of a more elaborated description of how language and literacy skills develop makes it is difficult to define a threshold level literacy development which *Language and Learning in IB Programmes* describes as necessary before students can successfully engage with "sophisticated understandings of language use in increasingly abstract and decontextualised settings" (p. 23).

4.5.3.3 Exemplification – text- and sentence-level features in academic language

When the MYP does identify the language demands of the discipline, it is most likely to be in relation to vocabulary. For example, assessment criteria reflect the focus on

disciplinary terminology. It is important to focus on these word-level components of disciplinary literacy, as vocabulary is key to comprehension in the disciplines. However, it is equally important to notice and teach the ways in which sentences work in each of the disciplines, as well as the ways in which the disciplines organise knowledge and the ways texts differ (see the discussion on disciplinary literacy in the Literature Review). The following examples are provided to illustrate this point about sentence- and text-level features within the disciplines.

4.5.3.3.1 Sentence-level language features Sentence-level academic language operates in sophisticated ways with subtle but important differences across the disciplines. For example:

- the use of rhetorical questions to set up an argument, for example, “Have you ever wondered why it is that….?”
- the use of words, phrases and clauses which link the major sections of the text and provide links between claims and evidence, for example, through intensifying adverbs, like “This passage **clearly** demonstrates”, or nuanced verbs, like “They **appear to claim**”; and
- the use of subordinate clauses in the theme position, which demonstrates an understanding of alternate perspectives and evidence, for example, “Whilst some scientists disagree, the International Scientific Group has recently published”.

4.5.3.3.2 Text-level language features Text structures become very complex as students move through the MYP and begin the transition into the DP. By the end of the MYP, the inquiry units implicitly expect students to have control of complex text structures. For example, in History and Science students are expected to construct

research inquiries, formulating questions and planning the research process and adapting their methodology and question as required. This may involve introducing a claim, distinguishing the claim from alternate claims, and then presenting a range of evidence to support the claim before finishing with a closing argument. This is a substantially more complex text structure than what one would expect at the beginning of the MYP.

4.5.3.4 Opportunities The MYP's principles of developing conceptual understanding and disciplinary ways of thinking, knowing, and communicating would be supported by the development of materials for the teaching of disciplinary literacies – both within interdisciplinary units of inquiry and in stand-alone subjects. The development of case studies of how an interdisciplinary unit could work between subject groups such as Science and Language could provide examples of how language and literacy skills could be taught in authentic contexts to reflect the IB commitment to inquiry-based, holistic, and meaningful learning.

Particularly useful would be a document which provides a more articulated scope and sequence of the ways in which academic literacy develops over the course of the MYP, with elaborations on how that academic literacy looks within specific discipline or subject areas. Currently there is no developmental description of how language grows in complexity over the course of the MYP. Yet the language skills of a 12-year-old are markedly different from those of a 16-year-old, so there is an inevitable difference in the ways one would expect them to use language.

As was suggested in the discussion on basic literacy skills, such a document could be an extension of an elaborated ATL skills document, or a further elaboration of the CALP framework in *Developing Academic Literacy in IB Programmes*. It could even be an

extension of the PYP *Language Scope and Sequence* (see the PYP discussion for further commentary on how this document could be expanded).

Such a document would provide:

- a description of the ways in which basic literacy skills transform into academic literacy skills;
- a breakdown of these academic literacy skills into their language features at text, sentence, and word level; and
- further elaboration of these general academic literacy and language skills through examples of how they look when applied to the different disciplines.

The following is a simple illustration of the above:

Table 5
A more articulated scope and sequence

1. Academic literacy	**2. Language features at text, sentence, and word level.**	**3. Applied to Science**
Students write sustained and lengthy texts (spoken, written, or multimodal) which effectively explore and analyse challenging and complex issues of both local and global concern	For example, at the sentence level: control all sentence types, choosing them for effect, including embedding clauses within complex sentences	Example: clausal structures which allow a demonstration of an understanding of alternate perspectives and evidence, e.g. “Whilst some scientists disagree, the CSIRO has recently published”

4.5.4 New literacies

4.5.4.1 Strengths In the two subject groups *Language and Literature Guide* and *Language Acquisition Guide*, the development of new literacies such as multimodal and critical literacies is evident. The *Language Acquisition Guide* continua for reading comprehension and writing indicate new literacies increase in complexity as a student's language proficiency increases.

The MYP emphasises the importance of critical thinking as a means of deepening understanding and acknowledges the role language plays in students reflecting critically on their learning and identities. Throughout the MYP documentation, the foregrounding of critical processes is clear, and information and media literacy skills that highlight digital technologies are described in the ATL. *The Role of Technology in IB Programmes* also recognises that these processes are not limited to print or oral modes and that technology not only offers alternate modes but may also prompt new thinking. The technology document also identifies that new modes of communication not only require new literacy processes, but language will be used differently across the modes.

4.5.4.2 Gaps Critical thinking is a clear focus of the pedagogical approach in the MYP. However, what is less evident is an explication of the link between thinking and language – that is, the language skills required to make critical thinking visible to others. For example, terms like "analyse", "evaluate", "critique", and "synthesise" are verbs associated with higher order or critical thinking skills and are most likely to occur at high achievement levels in assessment criteria across subject groups. They also require a sophisticated grasp of the language, most particularly evaluative language. This is the language we use to persuade others or reflect critically on what it is others are saying to us. An example is the manner in which information is organised from the most significant to the least persuasive in order to emphasise key points or to foreground an analysis, or the use of language to position the reader, for example, "It is crucial to realise".

Overall, the representation of new literacies throughout MYP documentation is inconsistent, and this makes it difficult to track their scope and sequence. As a consequence, they may be developed in less systematic ways than what the MYP principles into practice and IB technology documents suggest.

4.5.4.3 Opportunities As has been described in the discussion on basic literacies and disciplinary literacies, it would be helpful if elaborations of language and literacy for critical literacies could be articulated and found in one document. This may be in an elaborated ATL skills document, a further elaboration of the CALP framework, an extension of the PYP *Language Scope and Sequence*, or as a language addendum to the subject group overviews.

However, the digital AID framework for technology offers an excellent home from which to more explicitly and systematically describe multimodal literacy skills and knowledge.

The information strand of this organising framework points particularly to the ways in which basic literacy skills need to be adapted when applied in ICT formats, understanding how information can be authored, compiled, or remixed in digital environments. Information also involves analysis and critical thinking. The design strand points to making effective use of the multimodal affordances of technologies. For example, the technology document describes the broad principle that the use of technology should be seamlessly integrated into inquiry learning and that ICT is part of a repertoire of tools for students and educators. A number of processes are then given as illustrations of this, including the ability to incorporate design thinking into communicative products. This would require an understanding of which design features are possible and what individual design features achieve.

For example, in the MYP we might expect students to be able to read the informative or persuasive messages of images in conjunction with accompanying text, like gaming magazines advertisements, and to understand that images can be literal or symbolic.

Importantly, students need to both read and produce multimodal communications and, thus, have to be shown the ways in which visual grammars work. For example, they must have an understanding that visual elements can impact upon the reader, by placement of image on the page to indicate importance or salience, choice of colour, or gaze lines to draw the viewer's attention to particular elements first.

It is also important to remember that visual grammar is not a universal grammar but linked to the cultural context in which it operates. An example is the different ways in which

arrows may be used in diagrams, to literally indicate direction or to more symbolically indicate cause and effect. The legend on a map, which represents objects symbolically, is another example of visuals which may be specific to the cultural context in which they are used.

4.5.5 Multilingualism

4.5.5.1 Strengths The attention to multilingualism in the MYP is strong and reflective of the most current thinking about additional language learning (see the discussions on Multilingual Pedagogies in the Literature Review). As well as advocating for mother tongue maintenance, the MYP encourages mother tongue instruction even when this is not the instructional language of the school. Additional language learning is an expectation in the IB. Noting the specific needs of the adolescent student, the MYP highlights the roles of language in identity affirmation, group cohesion, and inclusion.

The MYP not only recognises the need for the maintenance of mother tongue but strongly advocates the learning of additional language or languages as essential to the concept of an international education and intercultural understanding. *Language and Learning in IB Programmes* uses the term translanguaging to capture the idea that learners develop and integrate new language practices into a complex dynamic multilingual repertoire, reflecting the latest research understandings about how languages are learned (see the discussion of Additional Language Learning in the Literature Review). In summary, the IB positioning on multilingualism is cutting edge and world leading.

4.5.5.2 Gaps There does appear to be a significant gap between what is said about multilingualism in the broad principle documents and the guidance that is given to translate these theoretical principles into practice.

The *Language and Learning in IB Programmes* suggests the integration of the learning of languages within the learning in the subject groups and to integrate language learning with interdisciplinary planning. However, at the planning and implementation level it is difficult to find reminders to do this. The multilingual and intercultural dimensions of language and literacy are not explicitly addressed in subject group objectives. Neither are they evident in subject group assessment criteria.

The reason for the gap between theory and practice may be that the commitment to multilingualism in the IB is so strong that it is taken for granted as integral to planning and assessment. This is a broad assumption which may not be realised if curriculum and assessment documents do not articulate the ways in which multilingualism can be integral to all teaching and learning in the MYP.

The kind of multilingual integration which the IB advocates is complex, and teachers would need explicit support and guidelines to implement it. The IB recognises the complex multilingual profiles their students have, and it recommends the mapping of students' language profiles to see their capabilities within a BICS or CALP domain. The framework provided in *Developing Academic Literacy in IB Programmes* provides broad headings, but it would be difficult for most teachers to track student progression without some guidance on what the literacy and language behaviours might look like across the BICS–CALP continuum. This would be true of speakers who have the language of instruction as their mother tongue, but even more so for students for whom the language of instruction is a new and additional language. This makes it challenging for teachers to map language development in ways that enable them to target each student's ZPD and fulfil the IB's commitment to differentiated teaching which builds upon prior learning.

Existing IB language continua, which are designed to apply to as many language groups and language learning situations as possible, risk being of minimal use for the description of language development for those who might most require it.

4.5.5.3 Opportunities A more fine-grained description of an "additional language progression" would provide a more nuanced description of progress and learning outcomes for those students for whom the language of instruction is additional to their mother tongue. This would provide teachers with better tools to track the development of their students in their multiple languages. This is in contrast to the MYP language acquisition subject, which appears to be more suited to a description of learning an additional language that is not the language of instruction.

The multilingual and intercultural dimensions of language and literacy are evident to some extent in ATL through concepts such as perspective and global contexts such as orientations in time and space, personal and cultural expression, and fairness and development and in subject overviews. These are reflected in statements of inquiry and unit content descriptions. The unit planners address the need for differentiation, recognising students' prior learning and past knowledge and experiences as part of the learning process, opening many opportunities to both acknowledge and use the multilingual resources of the students.

Teachers would, therefore, benefit from direction in the subject overviews and planners, which could indicate the ways in which additional languages could be used to explore the topics under instruction and give some guidance on where opportunities for multilingual practices may be. For example, learning activities could activate the students' home languages or make use of the language expertise in the community. One simple illustration of this could be the examination of which language key vocabulary has come

from – for example, the French influence on English vocabulary in the difference between "ask" and "demand", or the ways in which different languages have adopted the same origin word – for example, the Aztec "xocolatl" becomes "chocolate" in English, "chocolat" in French, "cioccolato" in Italian, and "schokolade" in German.

5. Recommendations

5.1 Recommendation 1

5.1.1 How language is learned

Throughout the PYP and MYP documentations there is a tension between a description of **learning** as constructed from within – a constructivist approach – and a description of **language** as constructed with others – a social constructivist approach.

The consequence of this disjuncture is that the pedagogy, planning, and assessment documents do not explicitly describe the ways in which **language is used** but instead simply offer the opportunities for the **language to be used**. For students for whom the language of school instruction is not their mother tongue, a purely constructivist approach is likely to be inadequate. Not all students will bring the same knowledge and experience to school, and when the school language is the vehicle for inquiry they are disadvantaged by their lack of access to that vehicle. As a consequence, they are likely to require more explicit teaching and scaffolding into the language of the school.

5.1.2 Recommendation

Constructivism and social constructivism are not mutually exclusive theoretical positions. However, they do need further theoretical explication within the IB documentation to aid teachers in making the links between the inquiry learning that is foundational to the IB and the ways in which language learning can be scaffolded explicitly within that approach. The PYP and MYP documentation could foreground these theoretical links and highlight the ways in which learning is achieved through the scaffolded interactions of teacher and student.

5.2 Recommendation 2

5.2.1 Descriptions of language

The language profiles of IB students are inherently complex, and existing descriptions of language development within the IB do not adequately describe these profiles in ways that are useful for teachers. For example, *Language Scope and Sequence* is most suited as a description of mother tongue general literacy development and is not sufficiently nuanced to track the development of the language of school instruction when that language is not the child's mother tongue, or when additional languages are taught within the school. In addition, the current *Language Scope and Sequence* presents a mix of literacy and language indicators as conflated lists, with no overarching organising strands, and this makes it difficult to use the document to track progress. Existing IB language continua designed to apply to a range of language groups and language learning situations risk being of minimal use for the description of language development for those who might most require it.

5.2.2 Recommendation

A more fine-grained description of language learning is required to adequately track progress, particularly in the early phases of language learning. A more detailed description of language learning would also aid teachers in complying with the IB recommendation in *Language and Learning in IB Programmes* that teachers record information in student language profiles, mapping their progress in order to support planning for future differentiation.

Mother tongue learning and additional language learning are significantly different, and it is recommended that two different descriptions of language learning be developed to track development in mother tongue and additional languages.

This could be achieved by a reorganisation of the *Language Scope and Sequence*, which can serve as a description of mother tongue language learning, or for proficient users of the language of school instruction. It could be further developed to include:

- the addition of more detailed descriptions of language features within each phase; and
- the organisation of the scope and sequence into strands of language and literacy which would allow a closer mapping of student learning.

For additional language learning an additional language progression could be developed to provide a more fine-grained description of progress and learning outcomes for those students for whom the language of instruction is additional to their mother tongue. This would provide teachers with better tools to track the development of their students in their multiple languages. This is in contrast to the MYP language acquisition subject, which appears to be more suited to a description of learning an additional language that is not the language of instruction.

See the Australian curriculum's language learning progression as an example of what this could look like.

5.3 Recommendation 3

5.3.1 Language development across the years Although the IB recognises that learning becomes more complex across the years, and in the shift from the PYP to the MYP, there is no detailed description of the precise **ways** language demands increase in complexity. Currently, for example, there is no developmental description of how language grows in complexity over the course of the MYP. Yet the language skills of a 12-year-old are markedly different from those of a 16-year-old, so there is an inevitable difference in the ways one would expect them to use language.

Without some guidance on what the literacy and language behaviours might look like across the BICS–CALP continuum, in both the PYP and MYP, planning and assessment becomes difficult. Whilst there is nothing to preclude a teacher from explicitly planning for language outcomes, there are not many places they can go to find what these language outcomes might be, and how they develop over the years of schooling. This lack of detail of the increasing language complexity makes it difficult for teachers to both plan for and track a student's progress in a particular skill area.

Whilst this is an issue within the PYP and the MYP, it also presents a challenge for students moving from one programme to the other. As the literature notes, the transition from primary to secondary education is a particularly high risk point for students who are already underachieving, so it is important that curriculum descriptions offer as much cohesion as possible.

5.3.2 Recommendation More detailed description of language and literacy descriptors within the *Language Scope and Sequence*, as recommended above, would help address this issue. Particular attention could be paid to the ways in which language becomes more complex as schooling progresses. Work could be done to identify gaps in the existing descriptors and to map skills across the phases to better describe the development of those skills, and the shift from BICS to CALP.

It is recommended that the IB expand the scope of their language and literacy continuum to traverse the PYP and MYP. This will allow for smoother transitions from one programme to the other, and for teachers in each programme to track students' progress, in terms of language knowledge and literacy skills.

5.4 Recommendation 4

5.4.1 Basic literacy skills The PYP does an effective job of describing basic literacy skills, however the MYP assumes basic literacy skills are already in place. This will not always be the case, particularly for students who are not yet proficient in the language of instruction.

5.4.2 Recommendation The cross-programme *Language Scope and Sequence* recommended above would address this issue, as would a further elaboration of the CALP framework in an attachment to *Developing Academic Literacy in IB Programmes*. The basic literacy skills embedded within ATLs could be more clearly articulated and provide an easily identifable pathway for the development of basic literacy skills and their relationship to inquiry processes.

5.5 Recommendation 5

5.5.1 Language descriptions across the disciplines In both the PYP and the MYP there is a lack of attention to the specific language demands in the subject areas and **how** language differs in fundamental ways across the different subject areas in order to produce the necessary literacy texts.

This makes it more difficult for some students to achieve against the broader conceptual outcomes, whether in the inquiry units in the PYP, the transdisciplinary units of inquiry, or stand-alone subjects in the MYP, as they may not have the requisite language knowledge and skills to read and write effectively in the discipline areas.

There is no clear sequence of academic language and disciplinary literacy development over the programme . Without a clear and coherent description of disciplinary

language and literacy within each subject guide, it is difficult to plan for the systematic development of academic language.

5.5.2 Recommendation

Disciplinary literacy skills and their foundational disciplinary language features could be articulated within an expanded *Language Scope and Sequence*. This would also illustrate the shift from the everyday registers of BICS to the academic registers of CALP, as recommended above. The continuum document *Developing Academic Literacy in IB Programmes* also provides a framework for further developing descriptions of what CALP looks like. It provides a useful starting point for a further elaborated document which illustrates the academic language demands of the discipline areas, as well as what the language demands of the higher order thinking skills of synthesis and evaluation are, which are particularly pertinent to inquiry-based pedagogies.

Alternatively, subject-specific language continua could accompany subject documents, perhaps as language addenda. Particularly useful would be a document which provides a more articulated scope and sequence of the ways academic literacy develops, with elaborations on what academic literacy looks like within specific discipline or subject areas.

As has been recommended above, such a document could be a further elaboration of the CALP framework in *Developing Academic Literacy in IB Programmes* or an extension of the PYP *Language Scope and Sequence* or even an addendum to the ATL skills document. The document could provide:

- a description of the ways basic literacy skills transform into academic literacy skills;
- a breakdown of these academic literacy skills into their language features at text, sentence and word level; and

- further elaboration of general academic literacy and language skills through examples of how they look when applied to the different disciplines.

5.6 Recommendation 6

5.6.1 Language-focused pedagogies

Improvements to descriptions of language within the PYP and MYP have been a feature of the recommendations above. Language requires explicit apprenticeship if users are to successfully communicate with other users. This includes an apprenticeship into the academic language of school, but also the differing language and literacy requirements across disciplines.

This notion of scaffolding and support is evident in the documents, but it is not entirely clear what explicit support looks like. In particular, there is no guidance on how literacy may be taught across the disciplines in ways that are informative to the classroom teacher.

5.6.2 Recommendation

We recommend the development of guidance on language-focused pedagogies in authentic contexts, for example, **Scaffolding Literacy** as a pedagogy that combines explicit language teaching with inquiry approaches.

We also recommend the development of case studies to illustrate how language knowledge and literacy skills can be taught explicitly. These could consist of transdisciplinary unit samples in the PYP, or examples of how an interdisciplinary unit could work between subject groups such as Science and Language in the MYP. The case studies would provide examples of how language and literacy skills could be taught in authentic contexts to reflect the IB commitment to inquiry-based, holistic, and meaningful learning.

They would include examples of language and literacy demands and contribute to the development of conceptual understanding through a concept-driven approach.

5.7 Recommendation 7

5.7.1 New literacies There is a strong presence of new literacies skills throughout IB documents. However, they appear in a sporadic fashion that makes it difficult to track them. This is likely to make it harder for teachers to locate them and include them explicitly in their planning. In addition, these new literacies skills do not appear as assessable items within inquiry units.

5.7.2 Recommendation Close attention to the development of multiliteracies in the PYP and MYP would support their actualisation within transdisciplinary and interdisciplinary contexts for learning. Multiliteracies lie at the heart of intersemiosis and intersubjectivity – the space where deep and robust learning occurs. As noted with other aspects of literacy, the systematic representation of multiliteracies in support and guidance documents such as *Language Scope and Sequence*, the ATLs, or subject-specific guides could then be carried forward into learning objectives and assessment criteria. The digital framework for technology (AID) provides an ideal vehicle to make multimodal literacy skills and knowledge explicit.

5.8 Recommendation 8

5.8.1 Multilingualism The IB is at the leading edge in understanding the ways language is learned, and the complex linguistic profiles students possess. Its strong description of multilingualism as a resource and an asset would be considerably strengthened by explicit guidance on how these principles can be achieved in the everyday practice of planning and assessment within IB programmes.

The *Language and Learning in IB Programmes* suggests the integration of the learning of languages within subject group learning and to integrate language learning with interdisciplinary planning. However, at the planning and implementation level it is difficult to find reminders to do this.

5.8.2 Recommendation Teachers would benefit from guidance on how the IB principles of multilingualism can be achieved in the everyday practice of planning and assessment within IB programmes.

This could be included as indicators in subject overviews and planners, which suggest ways additional languages could be used to explore the topics under instruction and some guidance on where opportunities for multilingual practices may exist. Examples might include learning activities that activate the students' home languages or that make use of the language expertise in the community.

5.9 Recommendation 9

5.9.1 Professional development for teachers It is important to note that the inclusion of disciplinary language and literacy skills and multilingual instruction is a challenge facing curriculum developers around the globe. Building teacher capacity to teach these skills is key to meeting this challenge. Discipline area teachers are often ill-equipped to teach the literacy of their subject areas, and generalist literacy teachers struggle with the literacy discourses of disciplines in which they have no expertise. All teachers, particularly those who are monolingual themselves, struggle with how to practically implement multilingual strategies.

5.9.2 Recommendation

To assist literacy specialist, classroom, and subject group teachers in strengthening key aspects of their literacy practice within IB programmes, we recommend targeted professional development courses and professional resources. In the first instance, these should focus on the development of teacher content and pedagogical knowledge in the areas of disciplinary language and literacy skills, multiliteracies, and multilingual instruction.

5.10 Recommendation 10

5.10.1 Assessment

Although most aspects of literacy are evident throughout PYP and MYP documents, literacy outcomes are rarely made explicit either in assessment criteria or at key stages of the planning process. In the PYP, the assessment of literacy and language skills is dependent upon their original identification in the planning stage. Though there is nothing to preclude teachers from explicitly planning for language and literacy outcomes, there are not many places they can go to find what these outcomes might be. In part, this is because a clear progression of language development and literacy skills is difficult to discern in the current *Language Scope and Sequence*.

In the MYP, literacy skills (particularly basic literacy skills) are assumed both in planning and in assessment. This means that students are assessed by default on their language knowledge and basic literacy skills wherever assessments require them to use these reading and writing skills in the delivery of a unit's assessable outcomes. Although assessment processes within the MYP do not preclude the assessment of literacies, they need to find their way into subject guide objectives and unit planning if they are to become formally assessable.

5.10.2 Recommendation To ensure literacy outcomes are formally assessed in the PYP we recommend that changes to the *Language Scope and Sequence*, as outlined in previous recommendations, set out a clear progression of learning against identified literacy strands. We also recommend that language and literacy outcomes are clearly articulated and incorporated into planning for learning and for assessment.

In the MYP, literacy outcomes could be strengthened by tightening broad outcomes related to communication, broadening outcomes related to disciplinary literacy, and connecting these to assessment criteria in all subject group guides. This could be achieved through further explication of the ATL communication skills, an expanded *Language Scope and Sequence* or through the development of discipline-specific literacy outcomes.

6. Appendices

Appendix A – Language Changes Across Disciplines Illustrated for Year 2 and Year 8

– built upon the framework from the Australian Curriculum General Capability for Literacy by Misty Adoniou

Literacy skills developed in English by end of Year 2	Literacy and language skills evident in other learning areas by end of Year 2
Speaking, writing, creating	
Composition	
Students: • use talk as a key learning tool which provides valuable language rehearsal for students in preparation for writing and creating; • speak to clarify and extend understanding, with simple responses or questions posed to others; and • write and speak with a growing awareness of the audience.	Although students demonstrate growing proficiency with written texts, comprehension of taught concepts is more usually measured through oral responses. The texts, structures, and vocabulary students are asked to use in their speaking and writing across the learning areas are often not part of their everyday spoken language, and as such require specific instruction. For example: • In Mathematics students learn the content "telling the time on an analogue clock". This requires using oral language – "It's (*what does "it" refer to?)* half (*of what?*) past four" or "It is quarter (*of what?*) to five" – to demonstrate comprehension of the content. The language of this time concept is as abstract and as crucial as the concept itself, and needs to be taught attentively and in conjunction with the time concept. • In Science students are expected to use hypothetical language to demonstrate comprehension, i.e. the question "What will happen if…" requires an answer "If we **don't water** the bean every day, I think it **will** die". This is a *conditional sentence structure (where the tense changes from present to future in the same sentence)* not part of the everyday spoken repertoire of this age group, that needs to be taught. • In History students are expected to "compare features of objects from the present and past", which would require the use of *comparative language* – "TVs are *flatter* today" or "School is *more fun* today – not *funner*". This is a spoken language structure not yet mastered by many students by Year 2.

Literacy skills developed in English by end of Year 2	Literacy and language skills evident in other learning areas by end of Year 2
Text types	
Students: • compose simple narrative and non-narrative written and spoken texts, relying heavily on their own experiences and learned ideas; • compose short texts for familiar audiences; • work with a number of text types, including personal recounts, narratives, procedures, and information reports; and • begin to use paragraphs to organise ideas in written texts.	Most non-narrative texts students are expected to compose are best encountered and taught in context and within the learning areas, e.g. procedural texts and information reports in Science; information reports, persuasive texts, and recounts in History; and recounts, and procedural texts in Mathematics. The learning areas also provide important contextual opportunities for students to use spoken language to extend and demonstrate understanding of content.
Grammar	
Students: • write sentences with capital letters and full stops and question marks; • use simple and compound sentences, e.g. sentences joined by "and then", "but" etc.; • usually start their sentences with the subject only and need instruction to do otherwise; • begin to use more expanded phrases, e.g. "My favourite part of the story"; and • use tenses in a limited way, and are not yet able to use the full range of tenses to write and speak about the past.	There are a number of sentence types which are specific to non-narrative texts which need to be taught in context, for example: • sentences in procedural texts in Science or Mathematics at this level often begin with the verb, e.g. "**Cut** the orange into four equal pieces" or a sequencing word, e.g. "**Next**, cover the jar with plastic wrap"; and • historical recounts, even of family and self, require the students to read about the past encountering multiple tenses, e.g. "When I **was** five my family moved to Canberra. We **have lived** here for 20 years."
Vocabulary	
Students: • spell most phonetically regular words and some common irregular words; • use vocabulary limited to their own experiences, both outside the home and, importantly, constructed for them within the classroom; and • use a written vocabulary which is a reflection of their spoken vocabulary. .	As students' vocabulary is limited to their own experiences and the everyday, it is important to teach subject-specific vocabulary if we are to expect students to use it in their writing and speaking. For example: • in History, when studying the games and household objects of even the recent past, the vocabulary moves beyond the everyday and their experiences (e.g. **jacks**, **elastics**, **record player**, **transistor**) and requires teaching; • in Mathematics, words like **tally**, **prism**, and **cylinder** will not have been encountered in other learning areas; and • in Science "Draw the **object**" and "What **material** is it made of?", for example, refer to abstract notions and require explanation to students who are still operating substantially with the concrete. Words themselves often contain the concept being taught, and so the language and the content

Literacy skills developed in English by end of Year 2	Literacy and language skills evident in other learning areas by end of Year 2
	are often effectively taught in conjunction with one another. For example: • in Mathematics, the number words reflect the number concepts they represent, e.g. **six**, **six**-teen, **six**-ty, **six**-th. Many everyday words "act" differently in the subject areas, and this needs to be noticed by teachers and taught to students. For example: • **left** in Mathematics "How many are **left**?" is a cue to do a subtraction whilst "Turn **left**" is a direction; • **hard** is the opposite of easy, or in Science • a property of a material; and • **past** is "to go past the shops" and **present** is a birthday present, or in History they are periods of time.
Visuals	
Students: • construct images, including diagrams and graphs, to give extra information to a text.	Visuals in the learning areas often serve a different purpose to those students create on their own, and as such have different attributes which need to be taught. For example: • diagrams in non-narrative texts are informational and different from the images students usually create intuitively. In Science diagrams require accuracy in size relationships and colour when recording an experiment. Students at this age still produce images where size and colour are chosen by emotion rather than objective observation, e.g. objects of importance to them are drawn the largest and favourite colours are used. Therefore, objective observation and imaging need to be taught.
Listening, reading, viewing	
Comprehension	
Students: • retrieve literal information from texts and are beginning to understand inference in texts; • retell the main ideas of a spoken or written text, including one or two facts; and • listen to others to understand key vocabulary and concepts.	Students have basic comprehension skills, most restricted to the everyday and the literal. Their success in each of the learning areas will depend upon their ability to deal with the vocabulary and grammar features, such as those outlined below, which are specific to those learning areas.
Text types	
Students: • read simple narrative and some non-narrative texts which have familiar structures, e.g. stories have an orientation, a complication and a resolution;	The non-narrative texts students read are best encountered and taught in context and within the learning areas, e.g. procedural texts and information reports in Science; information reports, persuasive texts, and recounts in History;

Literacy skills developed in English by end of Year 2	Literacy and language skills evident in other learning areas by end of Year 2
• understand that indexes, tables of contents and headings in simple information texts aid reading; and • read texts situated in familiar contexts.	and recounts and procedural texts in Mathematics.
Grammar	
Students: • read texts usually comprised of simple and compound sentence structures; • read texts with predictable and consistent use of tenses; • understand that full stops, question marks, exclamation marks aid reading; • understand that sentence structure signals text purpose, e.g. procedural sentences often begin with verbs, like "**Fold** the paper in half"; and • understand the simple ways in which a subject in a text can be referred to, e.g. "The crocodile … It is…".	The texts used in the learning areas often introduce sentence structures which are new learning for students, For example: • in Science, the use of the passive voice, e.g. "Clouds **are formed** by condensation"; • in Science, the use of precise and detailed phrases, e.g. "Cut the orange **into four equal pieces**"; • in Mathematics, the use of ellipsis, e.g. "There are 12 pieces of pizza. When you take away 4 **[pieces of pizza]** how many **[pieces of pizza]** are left?"; and • in History, the use of multiple past tense constructions: "The first people in Australia **were** Aboriginal. White people **have lived in** Australia since 1778."
Vocabulary	
Students: • read and understand texts with mostly familiar vocabulary but a steady introduction of less familiar vocabulary in context; • read the common irregularly spelt words, e.g. "who", "they" etc; • read everyday multisyllabic words, e.g. "tomorrow", "because"; and • understand simple morphemes in words to aid comprehension, e.g. in "un-happy", "un" means "the opposite of", in "cat-s", "s" indicates plural.	The vocabulary encountered in learning area texts is often new, technical and specific and as such needs to be taught. For example, • in Mathematics, fold the paper "diagonally", "subtract", "minus", "divided by", and "multiplied by" are examples of Mathematics concepts which are accessed through these language labels which are particular to Mathematics and not encountered elsewhere; • in Science, "hypothesis" and "results" are examples of specific vocabulary; • in History, "the olden days" and "yesteryear" are examples of specific vocabulary. Sometimes the vocabulary is "acting" differently in each learning area and this needs to be noticed and taught. For example, "**Find** the answer" in Mathematics means to complete an algorithmic task, not to look for something lost. Students' knowledge of morphemes within words, and thus spelling, should be developed through attention in the learning areas. For example: • in Mathematics, in "tri-angle", "tri" = "three"; • in Science, in "re-cycle" and "re-use", "re" = "to do again"; and • in History, "ANZAC" is an acronym, has an origin and can refer to place names.
Visuals	

Literacy skills developed in English by end of Year 2	Literacy and language skills evident in other learning areas by end of Year 2
Students understand that images can give extra information to a text.	Visuals differ across the subject areas, and are read differently from written text. For example, in Science and Mathematics, graphs are read holistically, not necessarily from left to right and top to bottom as per texts.

Literacy skills developed in English by end of Year 8	Literacy and language skills evident in other learning areas by end of Year 8
Speaking, writing, creating	
Composition	
Students: • use spoken, written and multimodal texts to explain their own opinions and provide evidence to support those opinions; • use spoken, written and multimodal texts to explain viewpoints that differ from their own; • negotiate, collaborate and turn-take in oral discussions; • construct their written, spoken, and multimodal texts according to purpose and audience; • synthesise the main ideas of a discussion or text; • use research to inform their spoken, written and multimodal texts; and • plan, revise, and rehearse their oral and written presentations for accuracy and impact on the audience.	Comprehension of taught concepts is measured through both the written and spoken texts the students produce, which are often specific to the learning area. For example: • in Science students are expected to "conduct field studies to evaluate human impact on ecosystems", which would require formulating a question, constructing a hypothesis, choosing a methodology, taking field notes, collecting data, and presenting the results – all of which require specific language structures; and • in History students are expected to "use historical terms, and complete research projects" which require, for example, citing sources and writing research questions.
Text types	
Students: • compose a wide variety of narrative and non-narrative texts for different purposes, e.g. to entertain, inform, debate, discuss, persuade, and respond to others; • speak to and write for a variety of audiences, e.g. adults and peers, both formally and informally; • use a variety of formats for communicating information and ideas, e.g. posters, pamphlets, PowerPoint, essays, talks; and • research their spoken, written, and multimodal texts and cite their sources.	Most non-narrative texts students are expected to compose are best encountered and taught in context and within the learning areas, e.g. procedural texts, explanatory, descriptions and information reports; field studies and surveys in Science; information reports, persuasive texts, biographies, discussions, descriptions, and historical recounts in History; and recounts, explanatory, and procedural texts in Mathematics. Many of these text types have not been encountered or analysed in English and have not been explored within the specific knowledge domains of the other learning areas. The learning areas also provide important contextual opportunities for students to use spoken language to extend and demonstrate understanding of content.

Literacy skills developed in English by end of Year 8	Literacy and language skills evident in other learning areas by end of Year 8
	History and Science expect students to construct **research inquiries**, formulating questions and planning the research process. Students will not have done this in English.
Grammar	
Students: • use correct punctuation to mark sentence boundaries, mark speech and add impact, although they still make errors with punctuation to mark clause boundaries within sentences; • use all sentence types with increasing accuracy; • usually place clauses and phrases to effectively engage the reader, e.g. “Struggling against the strong wind, she …”, “On a dark and stormy night”; • select phrases according to the purpose of the text, e.g. adverbial phrases to give more information about where, when, why, and how, adjectival phrases to give more information about who and what; • use most tenses effectively and appropriate to text type and purpose; • use sentence structures which effectively show the connections between ideas and evidence, e.g. “This is why”, “For this reason”, ”Another example”; • use language effectively much of the time to persuade the listener and the reader to a viewpoint; • use modals which effectively express opinion, e.g. “It **may** be true”, “Parents **ought** to”; • usually choose intensifiers to fine-tune opinion, e.g. “I think it is **very** important”, “It is **almost** always true that”; • increasingly use literary devices to add impact to their writing, e.g. alliteration, repetition; and • use an increasing amount of metalanguage about language, e.g. adverbial phrases, subordinate and dependent clauses.	There are a number of language features and sentence structures specific to the different non-narrative texts and which need to be taught in context. For example: • sentences in procedural texts in Science and Mathematics often begin with adverbial phrases which add precision or detail, e.g. “**Before heating**, ensure”, “**Very carefully** place”; • objective and factual phrases and clauses add detail to information, explanatory, and procedural texts, e.g. in Science the phrase “the most abundant element in the universe” densely packs a lot of description about hydrogen into one phrase. Similarly in the phrase “the cumulative frequency distribution table” in Mathematics all the words in the phrase are necessary for it to accurately describe what it is referring to; and • phrases and clauses are chosen to persuade the audience and to give weight to the veracity of the information, e.g. in History, “According to archaeologists, the Ancient Greeks”.
Vocabulary	
Students: • spell regular and common irregular words correctly; • understand that English spelling tells the story of English language history, i.e. words are often spelt according to what they mean and which language they come from; • use vocabulary which is specific to their school studies and different from their everyday spoken language;	Although students’ vocabularies are moving beyond their everyday experiences, it is important to teach the subject-specific vocabulary that students are expected to use in their writing and speaking. For example: • in History when studying ancient civilisations much of the vocabulary refers to objects and processes the students will never have encountered, e.g. mummification, artefacts, and inscriptions;

Literacy skills developed in English by end of Year 8	Literacy and language skills evident in other learning areas by end of Year 8
• choose words intentionally to have a planned impact upon the reader to entertain or persuade them; • actively expand their spoken and written vocabulary, although in the learning area English this is done mostly through creative and literary texts; and • use a dictionary and thesaurus effectively.	• as students progress through the years the vocabulary of Mathematics becomes increasingly idiosyncratic to the learning area. All new topics need to pay attention to the vocabulary of the topic, e.g. in statistics, “cumulative”, “frequency”, “histogram”, “distribution and mean”, “median”, “mode” (all of which have other meanings in other learning areas); • in Science, similarly, as the learning becomes more abstract the vocabulary also becomes more abstract, although sometimes the words used are known to the students with different meanings, e.g. in “batteries”, “cell”, “path”, “positive”, “negative”, “current”.
Visuals	
Students: • construct multimodal texts which make use of a range of visual options to give the intended message.	The visual texts of the learning areas are informational and require precision and/or detail which accurately reflects the information it represents. Tools such as cause and effect arrows should be taught, as well as techniques which simplify or symbolise more complex objects, e.g. various circles representing the nucleus, shell, electrons in an atom.
Listening, reading, viewing	
Comprehension	
Students: • retrieve literal and inferential information from written, spoken, and multimodal texts; • attend to extended spoken and written texts, e.g. mini-lectures, novels, podcasts; • identify the main ideas in texts and the evidence that supports those ideas; • differentiate between key ideas and minor details; • understand different perspectives in texts, and can evaluate these; • draw conclusions and summarise a text; and • research a topic using a range of sources, e.g. books, pamphlets, websites.	Students can be expected to have good general comprehension skills, however their success in each of the learning areas will depend upon their ability to deal with the vocabulary and grammar features, such as those outlined below, which are specific to the text types they will be reading. In particular, in Science and History they will need to be supported to read for research purposes, and taught information literacy skills, e.g: • using tables of contents and indexes; • skimming and scanning for information; and • differentiating fact from opinion.
Text types	
Students: • read information, literary, and persuasive texts from a variety of authentic sources, including newspapers, textbooks, novels, and websites; • move outside their own experiences and read, reflect, and respond to different viewpoints; and • understand that texts may be complex hybrids, e.g. infomercials, mockumentaries.	Most non-narrative texts students read are best encountered and taught in context and within the learning areas, e.g. procedural texts and information reports in Science; information reports, persuasive texts, and recounts in History; and recounts and procedural texts in Mathematics.

Literacy skills developed in English by end of Year 8	Literacy and language skills evident in other learning areas by end of Year 8
Grammar	
Students: • read texts which are densely packed with complex sentence structures; • read texts which comprise the full range of tenses to talk about past, present, and future, and the active and passive voice; • understand the complex ways in which sentence structure signals text purpose, e.g. to compare and contrast events and objects, as in "Whilst the book showed, the movie did not", "On the other hand"; • understand the complex ways in which sentences are structured to influence the reader, e.g. the passive voice – "It is claimed that", which establishes a claim without citing evidence; • understand that an entire process can be referred to in a single word, e.g. nominalisation allows processes to be turned into nouns, as in "characterisation is the process of creating and describing character".	The texts used in the learning areas often introduce sentence **structures** and **cohesive** devices which are new learning for students. For example: • the use of ellipsis to provide coherence and rhythm, e.g. in History, "The Olympic Games are an example of a modern phenomenon with its roots in Ancient Greece. Drama and democracy are other examples **[of a modern phenomenon with its roots in Ancient Greece]"** • the use of the passive voice, e.g. In History to modify evidence claims, as in "It **is thought that**"; in Mathematics to focus on process, as in "99 Roman soldiers who fled from battle **were to be punished**. The group **was lined up** and [was] decimated. How many **were** killed?"; and in Science to focus on process when the "actor" is unknown or unimportant, as in "Larger atoms form molecules that are built of more than two atoms"; • the use of reference, other ways to refer to what has already been mentioned, e.g. in History "Much of what we take for granted today has its roots in Ancient Greece" what "its" refers to?; and • nominalisations are common, but complex, in the non-narrative texts. They pack a process into a noun, and require the reader to comprehend the process embedded within the noun, e.g. in Science, "nuclear fission", "stratification", "precipitation".
Vocabulary	
Students: • read and understand texts with a wide range of vocabulary, although new subject-specific vocabulary needs to be taught; • apply their understandings about morphemes when reading new words, e.g. if a magic**ian** is someone who works with magic then a beautici**an** is likely to be someone who works with beauty; • understand that vocabulary influences the reader, that words can be subjective or objective, e.g. "Teenagers today are **wasteful**" or "Research shows that young people today **consume 20% more** than their counterparts a decade ago"; and • independently seek the meaning of unknown words.	The vocabulary encountered in learning area texts is often new, technical, and specific and as such needs to be taught. For example: • in Mathematics"expression", "coefficient", "perpendicular"; • in Science "variables", "basalt"; and • in History "radiocarbon dating", "DNA analysis", "heritage". Students' knowledge of morphemes within words, and word origins, aids comprehension and develops vocabulary resources. For example: • in Mathematics, Greek origins, as in "decimated", "decade", "decahedron", where "deca" = "ten"; • in Science, morphemes which mark adjectives, e.g. "metamorphic", "aquatic", "metallic", "magnetic"; and

Literacy skills developed in English by end of Year 8	Literacy and language skills evident in other learning areas by end of Year 8
	• in History, Greek origins, as in “archaeology”, where “archae” = “history”and “ology” = “the study of”, and “anthropology”, where “anthropo” = “human” and “ology” = “the study of” Words “act” differently in different contexts. For example: • in Science a “**control** group” is different from a “game **control**”; and • in Mathematics “to **plot** a graph” is different from “to **plot** a murder”. Students need to be shown the ways words can indicate objectivity or subjectivity, e.g. through the use of modal verbs like “may”, “might”, “should” etc. to indicate degrees of opinion and fact.
Visuals	
Students: • understand that images give extra information to a text, e.g. symbols, graphs, diagrams, timelines, maps, charts, drawings, and paintings; • read the informative or persuasive messages of images in conjunction with accompanying text, e.g. gaming magazines, advertisements; • understand that visual elements can impact upon the reader, e.g. placement of image on the page, choice of colour, gaze lines; and • understand that images can be literal or symbolic.	Students need to be able to interpret a variety of visual texts which are specific to knowledge domains and not encountered in English. For example: • linear representations, e.g. in Mathematics number lines, in History chronological lines, and in Science temperature scales; • maps, e.g. in Mathematics grids and in History geographical; and • diagrams, e.g. in Mathematics polyhedron nets, in History architectural plans, and in Science food chains. Students also need to be able to read text in conjunction with visuals. e.g. as shown in Fig. 6, in the diagram shown, see Fig. 3, (Fig 4) Visuals have their own “grammar” which needs to be read for understanding to occur. For example: • arrows may literally indicate direction or more symbolically indicate cause and effect; • captions are written in abbreviated English, e.g. “sealed container to be tested”; and • the legend on a map represents objects symbolically.

Appendix B – Text Complexity Qualitative Measures in the Common Core State Standards

Qualitative Measures of Text Complexity

	Texts That Would Stretch a Reader and/or Require Instruction	Texts That Require Grade-appropriate Skills	Texts That Are Comfortable and/or Build Background, Fluency, and Skills
		Levels of Meaning and Purpose	
Density and Complexity	Significant density and complexity, with multiple levels of meaning; meanings may be more ambiguous	Single, but more complex or abstract level of meaning; some meanings are stated, while others are left to the reader to identify	Single and literal levels of meaning; meaning is explicitly stated
Figurative Language	Figurative language plays a significant role in identifying the meaning of the text; more sophisticated figurative language is used (irony and satire, allusions, archaic or less familiar symbolism); the reader is left to interpret these meanings	Figurative language, such as imagery, metaphors, symbolism, and personification, is used to make connections within the text to more explicit information, and readers are supported in understanding these language devices through examples and explanations	Limited use of symbolism, metaphors, and poetic language that allude to other unstated concepts; language is explicit and relies on literal interpretations
Purpose	Purpose is deliberately withheld from the reader, who must use other interpretative skills to identify it	Purpose is implied but is easily identified based on title or context	Purpose or main idea is directly and explicitly stated at the beginning of the reading
		Structure	
Genre	Genre is unfamiliar or bends and expands the rules for the genre	Genre is either unfamiliar but is a reasonable example of it OR it is a familiar genre that bends and expands the rules for the genre	Genre is familiar and the text is consistent with the elements of that genre
Organization	Organization distorts time or sequence in a deliberate effort to delay the reader's full understanding of the plot, process, or set of concepts; may include significant flashbacks, foreshadowing, or shifting perspectives	Organization adheres to most conventions, but digresses on occasion to temporarily shift the reader's focus to another point of view, event, time, or place, before returning to the main idea or topic	Organization is conventional, sequential, or chronological, with clear signals and transitions to lead the reader through a story, process, or set of concepts
Narration	Unreliable narrator provides a distorted or limited view to the reader; the reader must use other clues to deduce the truth; multiple narrators provide conflicting information; shifting points of view keep the reader guessing	Third-person limited or first person narration provides accurate, but limited, perspectives or viewpoints	Third-person omniscient narration or an authoritative and credible voice provides an appropriate level of detail and keeps little hidden from the view of the reader
Text Features and Graphics	Limited use of text features to organize information and guide the reader; information in the graphics are not repeated in the main part of the text, but are essential for understanding the text	Wider array of text features includes margin notes, diagrams, graphs, font changes, and other devices that compete for the reader's attention; graphics and visuals are used to augment and illustrate information in the main part of the text	Text features (e.g., bold and italicized words, headings and subheadings) organize information explicitly and guide the reader; graphics or illustrations may be present but are not necessary to understand the main part of the text
		Language Conventionality and Clarity	
Standard English and Variations	The text includes significant and multiple styles of English and its variations, and these are unfamiliar to the reader	Some distance exists between the reader's linguistic base and the language conventions used in the text; the vernacular used is unfamiliar to the reader	Language closely adheres to the reader's linguistic base
Register	Archaic, formal, domain-specific, or scholarly register	Register is consultative or formal, and may be academic but acknowledges the developmental level of the reader	Register is casual and familiar

Figure 1

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Knowledge Demands			
Background Knowledge	The text places demands on the reader that extend far beyond one's experiences, and provides little in the way of explanation of these divergent experiences	There is distance between the reader's experiences and those in the text, but there is acknowledgment of these divergent experiences, and sufficient explanation to bridge these gaps	The text contains content that closely matches the reader's life experiences
Prior Knowledge	Specialized or technical content knowledge is presumed and little in the way of review or explanation of these concepts is present in the text	Subject-specific knowledge is required, but the text augments this with review or summary of this information	Prior knowledge needed to understand the text is familiar, and draws on a solid foundation of practical, general, and academic learning
Cultural Knowledge	Text relies on extensive or unfamiliar intertextuality, and uses artifacts and symbols that reference archaic or historical cultures	Text primarily references contemporary and popular culture to anchor explanations for new knowledge; intertextuality is used more extensively but is mostly familiar to the reader	The reader uses familiar cultural templates to understand the text; limited or familiar intertextuality
Vocabulary Knowledge	Vocabulary demand is extensive, domain-specific, and representative of complex ideas; the text offers little in the way of context clues to support the reader	Vocabulary draws on domain-specific, general academic, and multiple meaning words, with text supports to guide the reader's correct interpretations of their meanings; the vocabulary used represents familiar concepts and ideas	Vocabulary is controlled and uses the most commonly held meanings; multiple meaning words are used in a limited fashion

Source: Fisher, D., Frey, N., & Lapp, D. (2012). *Text complexity: Raising rigor in reading*. Newark, DE: International Reading Association. Used with permission.

Figure 1, continued

Appendix C – Project Literacy Themes in MYP Aims and Objectives

Subject group	Aims	Objectives
Language acquisition	The aims of the teaching and learning of MYP language acquisition are to: • gain proficiency in an additional language whilst supporting maintenance of their mother tongue and cultural heritage; • develop a respect for, and understanding of, diverse linguistic and cultural heritages; • develop the student's communication skills necessary for further language learning, and for study, work, and leisure in a range of authentic contexts and for a variety of audiences and purposes; • enable the student to develop multiliteracy skills through the use of a range of learning tools, such as multimedia, in the various modes of communication; • enable the student to develop an appreciation of a variety of literary and non-literary texts and to develop critical and creative techniques for comprehension and construction of meaning ; • enable the student to recognise and use language as a vehicle of thought, reflection, self-expression, and learning in other subjects, and as a tool for enhancing literacy; • enable the student to understand the nature of language and the process of language learning, which comprises the integration of linguistic, cultural, and social components; • offer insight into the cultural characteristics of the	The language acquisition subject group objectives represent some of the essential processes of language and have been organised under the same four communicative processes for each of the six phases: A Comprehending spoken and visual text As appropriate to the phase, the student is expected to be able to: • listen for specific purposes and respond to show understanding; • interpret visual text that is presented with spoken text; and • engage with the text by supporting opinion and personal response with evidence and examples from the text. B Comprehending written and visual text As appropriate to the phase, the student is expected to be able to: • read for specific purposes and respond to show understanding; • interpret visual text that is presented with written text; and • engage with the text by supporting opinion and personal response with evidence and examples from the text. C Communicating in response to spoken, written and visual text As appropriate to the phase, the student is expected to be able to: • interact and communicate in various situations; • express thoughts, feelings, ideas, opinions and information in spoken and written form; and • speak and write for specific purposes.

Subject group	Aims	Objectives
	communities where the language is spoken • encourage an awareness and understanding of the perspectives of people from own and other cultures, leading to involvement and action in own and other communities; and • foster curiosity, inquiry, and a lifelong interest in, and enjoyment of, language learning.	D Using language in spoken and written form As appropriate to the phase, the student is expected to be able to: • organise thoughts, feelings, ideas, opinions, and information in spoken and written form; and • develop accuracy when speaking and writing in the target language.
Language and literature	The aims of MYP language and literature are to encourage and enable students to: • use language as a vehicle for thought, creativity, reflection, learning, self-expression, analysis, and social interaction; • develop the skills involved in listening, speaking, reading, writing, viewing, and presenting in a variety of contexts; • develop critical, creative, and personal approaches to studying and analysing literary and non-literary texts; • engage with text from different historical periods and a variety of cultures; • explore and analyse aspects of personal, host, and other cultures through literary and non-literary texts; • explore language through a variety of media and modes; • develop a lifelong interest in reading; and • apply linguistic and literary concepts and skills in a variety of authentic contexts (MYP3, p. 6).	A. Analysing In order to reach the aims of studying language and literature, students should be able to: i. analyse the content, context, language, structure, technique, and style of text(s) and the relationships among texts; ii. analyse the effects of the creator's choices on an audience; iii. justify opinions and ideas, using examples, explanations, and terminology; and iv. evaluate similarities and differences by connecting features across and within genres and texts. B. Organising In order to reach the aims of studying language and literature, students should be able to: i. employ organisational structures that serve the context and intention; ii. organise opinions and ideas in a sustained, coherent, and logical manner; and iii. use referencing and formatting tools to create a presentation style suitable to the context and intention. C. Producing text In order to reach the aims of studying language and literature, students should be

Subject group	Aims	Objectives
		able to: i. produce texts that demonstrate insight, imagination, and sensitivity whilst exploring and reflecting critically on new perspectives and ideas arising from personal engagement with the creative process; ii. make stylistic choices in terms of linguistic, literary, and visual devices, demonstrating awareness of impact on an audience; and iii. select relevant details and examples to develop ideas. D. Using language In order to reach the aims of studying language and literature, students should be able to: i. use appropriate and varied vocabulary, sentence structures, and forms of expression; ii. write and speak in a register and style that serve the context and intention; iii. use correct grammar, syntax, and punctuation; iv. spell (alphabetic languages), write (character languages), and pronounce with accuracy; and v. use appropriate non-verbal communication techniques (MYP3, p. 8).
Sciences	The aims of MYP sciences are to encourage and enable students to: • develop skills to design and perform investigations, evaluate evidence, and reach conclusions; • build an awareness of the need to effectively collaborate and communicate; and • apply language skills and knowledge in a variety of real-	A. Knowing and understanding In order to reach the aims of sciences, students should be able to: i. explain scientific knowledge; ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations; and iii. analyse and evaluate information to make scientifically supported judgements.

Subject group	Aims	Objectives
	life contexts (MYP4, p. 8).	B. Inquiring and designing In order to reach the aims of sciences, students should be able to: i. explain a problem or question to be tested by a scientific investigation; ii.formulate a testable hypothesis and explain it using scientific reasoning; iii.explain how to manipulate the variables, and explain how data will be collected; and iv. design scientific investigations. C Processing and evaluating In order to reach the aims of sciences, students should be able to: i. present collected and transformed data; ii. interpret data and explain results using scientific reasoning; iii. evaluate the validity of a hypothesis based on the outcome of the scientific investigation; iv. evaluate the validity of the method; and v. explain improvements or extensions to the method. D Reflecting on the impacts of science In order to reach the aims of sciences, students should be able to: i. explain the ways in which science is applied and used to address a specific problem or issue;

Subject group	Aims	Objectives
		ii. discuss and evaluate the various implications of the use of science and its application in solving a specific problem or issue; iii. apply scientific language effectively; and iv. document the work of others and sources of information used.

Literacy theme colour coding

- Basic literacy skills
- Disciplinary literacy
- New literacies
- Multilingualism

Appendix D – Project Literacy Themes in the MYP Approaches to Learning (ATL)

Communication

I. Communication skills	
How can students demonstrate communication through language?	**Exchanging thoughts, messages and information effectively through interaction:** • give and receive meaningful feedback; • use intercultural understanding to interpret communication; • use a variety of speaking techniques to communicate with a variety of audiences; • use appropriate forms of writing for different purposes and audiences; • use a variety of media to communicate with a range of audiences; • interpret and use effectively modes of non-verbal communication; • negotiate ideas and knowledge with peers and teachers; • participate in, and contribute to, digital social media networks; • collaborate with peers and experts using a variety of digital environments and media; and • share ideas with multiple audiences using a variety of digital environments and media.
How can students communicate through interaction?	**Reading, writing and using language to gather and communicate information:** • read critically and for comprehension; • read a variety of sources for information and for pleasure; • make inferences and draw conclusions; • use and interpret a range of discipline-specific terms and symbols; • write for different purposes;

	• understand and use mathematical notation; • paraphrase accurately and concisely; • preview and skim texts to build understanding; • take effective notes in class; • make effective summary notes for studying; • use a variety of organisers for academic writing tasks; • find information for disciplinary and interdisciplinary inquiries, using a variety of media; • organise and depict information logically; and • structure information in summaries, essays, and reports.

Research

VI. Information literacy skills	
How can students demonstrate information literacy?	**Finding, interpreting, judging and creating information:** • collect, record, and verify data; • access information to be informed and inform others; • make connections between various sources of information; • understand the benefits and limitations of personal sensory learning preferences when accessing, processing, and recalling information; • use memory techniques to develop long-term memory; • present information in a variety of formats and platforms;

	• collect and analyse data to identify solutions and make informed decisions; • process data and report results; • evaluate and select information sources and digital tools based on their appropriateness to specific tasks; • understand and use technology systems; • use critical literacy skills to analyse and interpret media communications; • understand and implement intellectual property rights; • create references and citations, use footnotes/endnotes, and construct a bibliography according to recognised conventions; and • identify primary and secondary sources.
VII. Media literacy skills	
How can students demonstrate media literacy?	**Interacting with media to use and create ideas and information:** • locate, organise, analyse, evaluate, synthesise, and ethically use information from a variety of sources and media (including digital social media and online networks); • demonstrate awareness of media interpretations of events and ideas (including digital social media); • make informed choices about personal viewing experiences; • understand the impact of media representations and modes of presentation; • seek a range of perspectives from multiple and varied sources; • communicate information and ideas effectively to multiple audiences using a variety of media and formats; and • compare, contrast, and draw connections among (multi)media resources.

Thinking

VIII. Critical thinking skills	
How can students think critically?	**Analysing and evaluating issues and ideas:** • practise observing carefully in order to recognise problems; • gather and organise relevant information to formulate an argument; • recognise unstated assumptions and bias; • interpret data; • evaluate evidence and arguments; • recognise and evaluate propositions; • draw reasonable conclusions and generalisations; • test generalisations and conclusions; • revise understanding based on new information and evidence; • evaluate and manage risk; • formulate factual, topical, conceptual, and debatable questions; • consider ideas from multiple perspectives; • develop contrary or opposing arguments; • analyse complex concepts and projects into their constituent parts and synthesise them to create new understanding; • propose and evaluate a variety of solutions; • identify obstacles and challenges; • use models and simulations to explore complex systems and issues;

	• identify trends and forecast possibilities; and • troubleshoot systems and applications.
IX. Creative thinking skills	
How can students be creative?	**Generating novel ideas and considering new perspectives:** • use brainstorming and visual diagrams to generate new ideas and inquiries; • consider multiple alternatives, including those that might be unlikely or impossible; • create novel solutions to authentic problems; • make unexpected or unusual connections between objects and/or ideas; • design improvements to existing machines, media, and technologies; • design new machines, media, and technologies; • make guesses, ask "what if" questions, and generate testable hypotheses; • apply existing knowledge to generate new ideas, products, or processes; • create original works and ideas, and use existing works and ideas in new ways; • practise flexible thinking – develop multiple opposing, contradictory, and complementary arguments; • practise visible thinking strategies and techniques; and • generate metaphors and analogies.
X. Transfer skills	
How can students transfer skills and knowledge across disciplines and subject	**Using skills and knowledge in multiple contexts:** • use effective learning strategies in subject groups and disciplines;

groups?	• apply skills and knowledge in unfamiliar situations; • inquire in different contexts to gain a different perspective; • compare conceptual understanding across multiple subject groups and disciplines; • make connections between subject groups and disciplines; • combine knowledge, understanding, and skills to create products or solutions; • transfer current knowledge to learning of new technologies; and • change the context of an inquiry to gain different perspectives.

Literacy theme colour coding

- Basic literacy skills
- Disciplinary literacy
- New literacies
- Multilingualism

Appendix E – Document Analysis Matrices for PYP Documents

These are the document analysis matrices which provided the data for the discussion of literacy in the PYP.

Documents consulted: *Making the PYP Happen* (PYP1), *Introduction to PYP Scope and Sequences* (PYP2), *Language Scope and Sequence* (PYP3), *Developing a Transdisciplinary Programme of Inquiry* (PYP4), *A Model of Transdisciplinary Learning* (PYP5, *Language Scope and Sequence Case Studies* (PYP6).

Curriculum: literacy objectives and goals in the PYP (coding matrix 1)

Literacy theme	**General guidelines**	**At subject level, transdisciplinary themes**	**Transdisciplinary skills/ key concepts**	**Units of inquiry**	**Planning for learning (PYP Planner)**
Theoretical perspective/ overview	The PYP advocates a **constructivist** approach focused on purposeful learning that emphasises the active construction of meaning. It describes language as a social act and a vehicle to engage with the world, and identifies language skills as a strong predictor of academic success Language is involved in all learning, being "the most significant connecting element across the curriculum" (PYP1, p. 70).	The PYP describes its objectives in term of knowledge, concepts, skills, attitudes, and action (the elements of the PYP): • what we want students to know about; • what we want students to understand; • what we want students to be able to do; • what we want students to feel, value, and demonstrate; and • how we want students to act. Learning is organised into a **programme of inquiry** using a set of **transdisciplinary themes**.	The PYP identifies a set of five **transdisciplinary skills** that students need to conduct purposeful inquiry and to be well prepared for lifelong learning. In the documents examined transdisciplinary skills are frequently identified in general terms. **Concepts** are a means of supporting inquiry. They are powerful ideas of relevance within and beyond subject areas that students explore to develop coherent and in-depth understanding. **Key concepts** shape **units of inquiry** and give them	Transdisciplinary themes are explored through **units of inquiry**. Each unit of inquiry is structured around the exploration of a **central idea,** developed through lines of inquiry.	**The PYP Planner** links the written, taught and assessed curriculums. It is structured around eight questions: 1. What is our purpose? (transdisciplinary theme, central idea, summative task) 2. What do we want to learn? (concepts, lines of inquiry, provocations) 3. How might we know what we have learned? 4. How best might we learn? (learning experiences, transdisciplinary skills)

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Transdisciplinary skills/ key concepts	Units of inquiry	Planning for learning (PYP Planner)
	The IB learner profile describes learners as striving to be communicators who can express themselves confidently and creatively in more than one language and in many ways.	These are supported by the knowledge, concepts, and skills from traditional **subject areas**, one of which is Language.	purpose and direction. The eight key concepts are form, function, causation, change, connection, perspective, responsibility, and reflection.		5. What resources need to be gathered? 6. To what extent did we achieve our purpose? 7. To what extent do we include the PYP elements? 8. What student-initiated inquiries arose from the learning?
Basic literacy skills	The PYP describes literacy skills as tools students "have to be given" to make the "step up to face the greater demands made in the PYP curriculum".	The PYP acknowledges that students acquire the particular skills that define the discipline of the subject areas, when learning about and through those subjects. For example, Literacy as a basic skill is considered essential as a tool for inquiry, acquired through the subject area Language. The four continuums: listening and speaking; viewing and presenting; reading; and writing in the ***Language Scope and***	Most aspects of **communication skills** – listening, speaking, reading, writing, viewing, presenting, and non-verbal communication – fall under basic literacy skills. Some aspects of **research skills,** such as describing observations, note taking, writing statements, and communicating what has been learned, draw on basic literacy skills. The language perspective for the **key concepts** form and function incorporate	Wherever possible, language is taught through authentic contexts in units of inquiry, although there is also allowance for specific language teaching. It is expected that a well-balanced programme will provide meaningful and well-planned opportunities for learners to participate as listeners, speakers, readers, and writers.	The sample process for planning language learning experiences includes identifying conceptual understanding from the **language continuums** that support and inform language learning in the unit of inquiry, identifying learning outcomes including basic literacy skills, and deciding whether all learning experiences will occur within the unit of inquiry. The Language Addendum for the unit "Who We Are: People Celebrate All Over the World

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Transdisciplinary skills/ key concepts	Units of inquiry	Planning for learning (PYP Planner)
		Sequence set out overall expectations, conceptual understandings, and learning outcomes. Most overall expectations and learning outcomes cover basic literacy skills.	aspects of basic literacy skills.		for Many Reasons" identifies conceptual understandings related to basic literacy skills, for example: • different types of texts serve different purposes; and • the structure of different types of texts includes identifiable features. Specific reading and writing outcomes are also identified in the Addendum.
Disciplinary literacy	The PYP is based on the belief that students learn best where the learning is not confined within the boundaries of traditional subject areas but is supported and enriched by them. **The IB learner profile** describes learners as striving to be knowledgeable, exploring knowledge	The PYP subject area annexes offer some evidence of aspects of disciplinary literacy. For example, it is expected students will become competent users of the language of Mathematics and begin to use it as a way of thinking, and will learn to see the world from a scientific perspective.	Subject areas identify some opportunities to develop and use disciplinary literacy skills, for example: • using mathematical vocabulary and symbols; • using scientific vocabulary to explain their observations and experiences; • interpreting and evaluating data gathered	All planned Science and Social Studies learning take places within transdisciplinary units of inquiry. Other subject areas may be taught either through transdisciplinary units or as stand-alone subjects. Subject area knowledge "enhances inquiries into the **central idea**s defined	The sample process for planning language learning experiences makes provision for some subject-specific front-loading experiences prior to application within a unit of inquiry. Examples of how schools use the planner to incorporate subject area or disciplinary literacy within a transdisciplinary programme

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Transdisciplinary skills/ key concepts	Units of inquiry	Planning for learning (PYP Planner)
	across a range of disciplines, and engaging with issues and ideas that have local and global significance.		to draw conclusions; and • assessing the accuracy, validity, and possible bias of sources; • using the vocabulary for handling personal and social issues; and • creating and critiquing choreographed performances, plays, compositions, and artwork. The language perspective for the **key concept** change and various related concepts incorporate aspects of disciplinary literacy skills.	by the transdisciplinary themes".	of inquiry were not among the documents consulted.
New literacies	In the PYP literacy, including visual literacy, becomes increasingly important as greater demands are placed on learners as participants in the learning process.	In *Language Scope and Sequence* overall expectations and learning outcomes for viewing and presenting cover the visual and multimedia aspects of new literacies.	**Communication skills** touch on some aspects of new literacies, particularly those related to visual literacies. Multimodality and critical literacy are less evident in other communication skills. The	Though new literacies are not addressed explicitly in the description of units of inquiry, advice on the nature of the **central idea** as being concept driven and promoting the	The sample process for planning language learning experiences includes identifying conceptual understanding from the language continua that support and inform learning in the unit of inquiry,

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Transdisciplinary skills/ key concepts	Units of inquiry	Planning for learning (PYP Planner)
	Language is linked to conceptual development and critical thinking. ICT is seen as a tool for learning with its own set of skills.	Some aspects of critical literacy are evident in the overall expectations and learning outcomes during the later phases of reading and writing. Multiliteracies are not addressed.	language perspective for the **key concepts** causation and perspective incorporate aspects of new literacies.	ability to think critically could provide an opening for critical literacy.	identifying learning outcomes including new literacies, and deciding whether all learning experiences will occur within the unit of inquiry. The Language Addendum for the unit "Who We Are: People Celebrate all Over the World for Many Reasons" identifies conceptual understandings related to text analysis, for example, recognising that different types of texts serve different purposes.
Multilingualism	The PYP acknowledges the role of mother tongue in cognitive development and identity maintenance. It draws attention to the importance of language learning where the language of instruction is not the student's first language (PYP1, p. 68). **The IB learner profile** describes learners as	The *Language Scope and Sequence* is intended as a guide for additional language learning as well as for language and literacy learning in the language of instruction. Some aspects of the multilingual/ intercultural dimensions of language and literacy are evident in the overall expectations or outcomes in the scope and sequence.	Other than a reference to understanding the ways images and language interact to convey values and beliefs, the multilingual/ intercultural dimensions of language and literacy are not explicitly identified in **communication Skills**. The language perspective for the **key concepts** connection, change, and perspective incorporate the	The set of transdisciplinary themes has been selected to represent "shared human experience". Units of inquiry that explore themes such as "Who We Are", "Sharing the Planet" and "How We Express Ourselves" have the potential to incorporate multilingual/ intercultural dimensions of language and literacy,	The sample process for planning language learning experiences includes identifying conceptual understanding from the language continua that support and inform learning in the unit of inquiry, identifying learning outcomes including the multilingual and intercultural dimensions of language and literacy, and deciding whether all learning

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Transdisciplinary skills/ key concepts	Units of inquiry	Planning for learning (PYP Planner)
	striving to be open-minded; critically appreciating their own cultures and personal histories, as well as the values and traditions of others; and seeking and evaluating a range of points of view, and being willing to grow from the experience.	The requirement for additional language learning is justified as giving insight into other cultures and awareness of other perspectives.	multilingual/ intercultural dimensions of language and literacy.	and would be reflected in their central idea and lines of inquiry. For example, an inquiry into "How We Express Ourselves: Throughout History, People Have Interacted With Each Other and Communicated Using The Arts" offers an opportunity to consider different perspectives and explore connections between people.	experiences will occur within the unit of inquiry. The Language Addendum for the unit "Who We Are: People Celebrate All Over The World For Many Reasons" asks students to connect visual information with their own experiences to construct their own meaning, and take part in the cultural aspects of celebrations and relate them to known celebrations from their own lives.

Pedagogy and assessment: approaches to teaching and assessing literacy in the PYP (Coding matrix 2)

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: success, marking criteria performance level
Theoretical perspective/ overview	The PYP takes the stance that a constructivist approach leads to a pedagogy "significantly dependent on student inquiry" – "building meaning and refining understanding through structured inquiry in authentic contexts". It describes inquiry as a process that moves students from their current level of understanding to a new and deeper level. "The **learning process** involves learning language – as learners listen to and use language with others in their everyday lives; learning about language – as learners grow in their understanding of how language works; and learning through language – as learners use language as a tool to listen, think, discuss and reflect on information,	Approaches to teaching principally arise from students' inquiry, which may be initiated by students or by the teacher. The role of the teacher is to facilitate connections between students' prior knowledge and the knowledge available through new experiences – with students becoming initiators rather than followers of learning. Language is identified as the vehicle for inquiry, and the programme of inquiry provides authentic contexts to develop and use language. The pedagogical approach to language learning is described in terms of good language practice and the ways it is changing.	Most evidence of explicit teaching methods and strategies relates to the teacher' s role within a transdisciplinary inquiry, for example, in supporting student-initiated inquiries, asking open-ended questions, modelling inquiry, and structuring dynamic learning environments. Direct teaching of the whole class is considered best suited for teaching procedural knowledge. More complex learning experiences require learners to monitor and regulate their thinking. Transdisciplinary skills are best developed as part of authentic learning, with opportunities to develop and use them in pair and group work.	The PYP takes a developmental approach to learning, taking account of characteristics, capabilities and interests for various age groups whilst also recognising individual differences and variations. Language demands and expectations change in the transition from home to school and from school to school. Schools need to acknowledge students' individual language profile and build on previous learning. In all language learning situations it is necessary to identify the learner's current developmental phase in order to plan learning experiences that will build on existing capability and understanding so as to	The sample process for planning language learning experiences includes ensuring that assessment will inform students' language profiles and further learning needs. Effective assessment allows students to demonstrate a range of skills. Assessment for language learning puts increased emphasis on a range of appropriate assessment methods such as portfolios, conferencing, miscue analysis, writing sample analysis, and response journals rather than standardised reading and writing assessments. The exhibition, which takes place in students' final PYP year, marks the culmination of their learning, where they have the opportunity

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: success, marking criteria performance level
	ideas and issues (From Halliday, 1980)" (PYP1, p. 68). All teachers are considered to be language teachers.	Good practice places an increased emphasis on promoting integrated language development, with language being treated as a transdisciplinary element, and literature (including non-fiction texts) being integrated into student inquiry.		support the learner's progression onto the next developmental phase.	to exhibit the IB learner profile attributes. The exhibition celebrates the transition from primary to secondary/middle education.
Basic literacy skills		Good language practice focuses primarily on meaning when reading and writing rather than on accuracy. It treats writing as a process and encourages the development of a range of spelling strategies. The approach nurtures an appreciation of the richness of language rather than language study as grammar and syntax. There is an increased emphasis on literature as a means of understanding and exploring rather than	Explicit language teaching strategies include a variety of scaffolded learning experiences, with the teacher providing strategies for students to build on their own learning. In addition, the teacher may provide explicit instruction, explain procedures, facilitate discussions, and provide opportunities for the development of particular skills (PYP5, p. 17). Many inquiry processes potentially involve teaching	The **Language scope and sequence** sets out the language and literacy skills developed over five phases in four continua: listening and speaking; viewing and presenting; reading; and writing**.** Each continuum describes overall expectations, conceptual understandings and learning outcomes for each phase. Many outcomes refer to basic literacy skills such as reading for meaning, understanding and using	The assessment of basic literacy skills is dependent on their identification as language learning outcomes. In the unit "Who We Are: People Celebrate All Over The World For Many Reasons" the summative assessment task asks students to write letter, postcard or email to describe the celebration they have learned about, to be assessed against a letter-writing checklist comprising standard letter-

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: success, marking criteria performance level
		literature study as vocabulary, grammar, and syntax.	around basic literacy skills, for example, questioning, making connections between previous and current learning, making predictions, collecting data, reporting findings, clarifying existing ideas, researching and seeking information, and taking and defending a position.	different text types, and understanding and using an increasing range of language features. However, outcomes are not organised according to specific aspects or threads across phases, which makes the progression of learning for specific skills difficult to track.	writing structures and features.
Disciplinary literacy		Good language practice focuses on language not only for its own sake but also for its application across the subject areas and throughout the transdisciplinary programme of inquiry.	In relation to disciplinary literacy, it is possible to teach subject-specific skills where they are not directly related to a unit of inquiry but to support mastery and to increase students' skills base (PYP4, p. 11).	Disciplinary literacy is not explicitly addressed in *Language Scope and Sequence.* Scope and sequence documents for other subject areas were not examined.	As disciplinary literacy skills are not addressed in *Language Scope and Sequence,* unless they are identified as outcomes in other subject areas, they are unlikely to be assessed in units of inquiry.
New literacies	The PYP supports the use of technology to communicate and research, with ICT being integrated into learning (PYP1, p. 43).	Good language practice includes teaching students to read and research using multimedia resources, and using language for creative problem-solving and information processing.	Explicit language teaching strategies include a variety of scaffolded learning experiences, with the teacher providing strategies for students to build on their own learning.	Learning outcomes in *Language Scope and Sequence* refer to new literacies, such as considering multiple perspectives, knowing when and how to use the internet and multimedia	The assessment of new literacies is dependent on their identification as language learning outcomes.

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: success, marking criteria performance level
			In addition, the teacher may provide explicit instruction, explain procedures, facilitate discussions, and provide opportunities for the development of particular skills (PYP5, p. 17). Many inquiry processes incorporate critical thinking which potentially involve teaching critical literacy, e.g. questioning, making connections between previous and current learning, making predictions, reporting findings, clarifying existing ideas, researching and seeking information, or taking and defending a position.	resources for research, analysing the writing of others, and critically analysing visual texts.	
Multilingualism	Teaching of language should be in response to students' previous experiences, interests, and needs.	Good language practice includes making world classics and culturally diverse reading material available for reading.	The teacher needs to structure language learning to ensure students have the opportunity to succeed, through scaffolding	In the transition from home to school, it is important to acknowledge individual students' language profiles and build on previous	The sample process for planning language learning experiences includes provision for differentiation, to support

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: success, marking criteria performance level
	Additional language teaching is integral to the whole programme rather than a stand-alone subject.		techniques such as using body language and gestures, building on what students say, and guided questioning.	learning, whilst also recognising that the expectations and approach to language development in school are often very different from home.	individual students' language development. The assessment of the multilingual/intercultural dimensions of language and literacy is dependent on their identification as language learning outcomes. In the unit "Who We Are: People Celebrate All Over The World For Many Reasons" a formative assessment task asks students to take part in the cultural aspects of celebrations and relate them to known celebration from their own lives.

Appendix F – Document Analysis Matrices for MYP Documents

What follows are the document analysis matrices which provided the data for the above discussion of literacy in the MYP.

MYP: From Principles into Practice (2014) (MYP1), *Language Acquisition Guide* (MYP2), *Language and Literature Guide* (MYP3), *Sciences Guide* (MYP4), *MYP Subject Area Guides – Learning Objectives* (MYP5), *Teacher Support Materials MYP1 Lang & Lit Overview 1_e* (MYP7), *Teacher Support Materials MYP1 Lang & Lit Overview* (MYP8), *Teacher Support Materials MYP1 or 2 – Unit Plan (2_e)* (MYP9), *Teacher Support Materials MYP5 – Unit Plan (7_e)* (MYP10)

Curriculum: Literacy objectives and goals in the MYP (coding matrix 1)

Literacy theme	**General guidelines**	**Literacy objectives at subject level**	**Approaches to learning (ATL), key concepts**	**Subject group overview**	**Planning for learning (Unit planner)**
Theoretical perspective /overview	The MYP advocates a **constructivis**t approach, which recognises that language is central to learning. **The IB learner profile** describes learners as communicators who can express themselves confidently and creatively in more than one language and in many ways.	The **objectives** of all MYP subjects state the specific targets that are set for learning in the subject. They define what the student will be able to accomplish as a result of studying the subject. The objectives encompass the factual, conceptual, procedural, and metacognitive dimensions of knowledge.	**ATL** skills provide valuable support for students working to meet the subject group's aims and objectives. Inquiry into MYP **key concepts** develops (and leads to debate on) the meaning of significant ideas. Concepts provide a framework for making meaning and the development of conceptual understanding.	The **subject group overview** outlines key and related concepts, global context, statement of inquiry, objectives, and ATL skills and content.	The MYP describes its constructivist approach as the interplay between asking (inquiry), doing (action) and thinking (reflection). **The MYP Planner** uses these as organising headers. Inquiry: Establishing the purpose of the unit Action: Teaching and learning through inquiry Reflection: Considering the planning, process and impact of the inquiry
Basic literacy skills		The objectives for Language and Literature	Communication is identified as one of five	Basic literacy skills are evident in the unit and	As per unit overviews, basic literacy skills may be

Literacy theme	General guidelines	Literacy objectives at subject level	Approaches to learning (ATL), key concepts	Subject group overview	Planning for learning (Unit planner)
		and Language Acquisition focus on the language processes that require basic literacy skills, for example, Objective D: Using language (MYP2), Objective D: Using language in spoken and written forms (MYP3). "Individuals and Societies" identifies basic literacy skills in Objective C: Communication. Other subjects rarely touch on basic literacy skills in their objectives.	skill categories in ATLs. It comprises a mix of basic and new literacy skills (see Table 1 below). The ATL Research skills also requires basic literacy skills, particularly those involving information literacy skills. Communication is identified as one of 16 key concepts. It is defined as "the exchange or transfer of signals, facts, ideas and symbols. It requires a sender, a message and an intended receiver. Communication involves the activity of conveying information or meaning. Effective communication requires a common "language; (which may be written, spoken or non-verbal)" (MYP1, p. 56).	tiered unit overviews where the key concept communication and where ATL skills – communication skills and Information literacy skills – have been identified. Basic literacy skills are more likely to be apparent in language subject groups than in other subject group units. For example, in Language and Literature units they are represented through related concepts such as genre, structure, audience imperatives, and purpose, and in Language Acquisition through related concepts such as conventions, form, function, idiom, purpose, and structure. Basic literacy skills may also be reflected in unit content descriptions. For example, the unit "Whose View" focuses on	evident through the ATL communication and information literacy and through content descriptions. In the unit planner for the unit "We All Someone to Lean On" basic literacy skills identified are: • making inferences and drawing conclusions; • organising and depicting information logically; and • structuring information in summaries, essays, and reports. In the unit "Gatsby's Affluenza" the unit planner lists ATL activities that address basic literacy skills. The Unit planner lists subject group objectives

Literacy theme	General guidelines	Literacy objectives at subject level	Approaches to learning (ATL), key concepts	Subject group overview	Planning for learning (Unit planner)
				"comprehension skills, sentence structure and paragraphing. Students will focus on how to effectively communicate their ideas to an identified audience and purpose" (MYP7).	and outlines summative assessment tasks, which frequently require students to demonstrate basic literacy skills, whether or not these are assessed.
Disciplinary literacy	The MYP acknowledges that that the transition from the primary to middle years presents challenging literacy demands for students It identifies the role of language in contributing to academic success and in developing the ability to reflect critically on all aspects of identity" (MYP1, p. 26).	Some aspects of disciplinary literacy are evident throughout the objectives for all subject groups. All subject groups identify developing and using disciplinary terminology, most frequently within Objective A: Knowing and understanding. Mathematics draws extensively on disciplinary literacy skills in Objective C: Communication. The objectives for Design focus on the design process, which requires extensive use of disciplinary terminology,	Subject groups tailor ATL skills to meet their own requirements, e.g. in Science students use appropriate scientific terminology, data tables, and graphs to make the meaning of findings clear to an audience of peers (communication skills). All subject guides identify key and related concepts which require students to be able to understand and use these "significant ideas" within disciplinary contexts. As students inquire into related concepts arising from specific subjects, they	In Language and Literature units, disciplinary literacy is evident through related concepts such as character, setting, theme, and style. Disciplinary literacy is, at times, evident in statements of inquiry and unit content descriptions, e.g. in the unit "Fantasy Film" the statement of inquiry focuses on the ways filmmakers use film conventions "to communicate a narrative and position an audience, through an analysis of fantasy films" (MYP7)	As per unit overviews, disciplinary literacy is evident through related concepts, statements of inquiry, and content descriptions. For example, in the unit planner for "We All Need Someone to Lean On" students are expected to acquire and use accurate, age-appropriate, academic, and domain-specific vocabulary. The vocabulary they need to understand and use is identified.

Literacy theme	General guidelines	Literacy objectives at subject level	Approaches to learning (ATL), key concepts	Subject group overview	Planning for learning (Unit planner)
		e.g. Objective B: Developing ideas – develop a design specification, which clearly states the success criteria for the design of the solution. Science draws extensively on disciplinary literacy skills in Objective D: Reflecting on the impacts of science.	develop conceptual understanding and disciplinary ways of thinking, knowing, and communicating – the basis for disciplinary literacy.		
New literacies		New literacies are represented in subject group objectives, particularly where they connect to inquiry and critical thinking. Typically, these objectives address analysing, justifying, and evaluating. For example, in Language and Literature, in Objective A: Analysing, students: • analyse the content, context, language, structure, technique, and style of text(s);	Communication skills in ATLs comprises a mix of basic and new literacy skills. The ATL Research skills, also employs new literacies, particularly those involving media literacy skills. New literacies connect to concepts and the development of conceptual understanding through the role they play in helping students to:	In Language and Literature units, new literacies are made evident through related concepts such as point of view and context, and in Language Acquisition through related concepts such as conventions and bias. Visual, multimodal, and critical literacy elements may be identified in statements of inquiry and content descriptions. For example, in the unit "Works in Translation", the	As per unit overviews, new literacies may be represented in the unit planner through key concepts such as perspective, creativity, and logic. The unit planner lists subject group objectives and outlines summative assessment tasks, which frequently require students to demonstrate new literacies, whether or not these are to be assessed.

Literacy theme	General guidelines	Literacy objectives at subject level	Approaches to learning (ATL), key concepts	Subject group overview	Planning for learning (Unit planner)
		• analyse the effects of the creator's choices on an audience; • justify opinions and ideas, using examples, explanations, and terminology; and • evaluate similarities and differences by connecting features across and within genres and texts.	• develop principles, generalisations and theories; and • solve problems, analyse issues, and evaluate decisions that can have an impact on themselves, their communities and the wider world. The key concepts most pertinent to new literacies are perspective, creativity and logic.	statement of inquiry focuses on representations of gender in texts from different social, historical, and cultural contexts, expecting students to undertake a comparative analysis of ways gender has been represented. ATL communication skills are often identified with critical thinking skills.	Tiered inquiry questions (factual, conceptual, debatable) require the use of critical literacy and critical thinking skills.
Multilingualism	The MYP highlights the roles of language in identity affirmation, group cohesion and inclusion, and the negotiation of power and status in relationships as being of particular significance during adolescence (MYP1, p. 26). **The IB learner profile** describes learners as being open-minded; critically	The MYP is underpinned by the belief that the ability to communicate in a variety of modes in more than one language is essential to the concept of an international education that promotes multilingualism and intercultural understanding The multilingual/ intercultural dimensions of	The multilingual/ intercultural dimensions of language and literacy are evident in ATL communication skills, when students use intercultural understanding to interpret communication. Culture, identity, and perspective are key concepts that relate to the	The multilingual/ intercultural dimensions of language and literacy are evident in subject overviews through key concepts such as perspective, and global contexts such as orientations in time and space, personal and cultural expression, and fairness and development. These are reflected in	As per unit overviews, the multilingual/intercultural dimensions of language and literacy may be evident in global contexts in unit planners. These are then reflected in the statement of inquiry and inquiry questions.

Literacy theme	General guidelines	Literacy objectives at subject level	Approaches to learning (ATL), key concepts	Subject group overview	Planning for learning (Unit planner)
	appreciating their own cultures and personal histories, as well as the values and traditions of others; seeking and evaluating a range of points of view; and willing to grow from the experience.	language and literacy are not explicitly addressed in subject group objectives.	multilingual/ intercultural dimensions of language and literacy.	statements of inquiry and unit content descriptions. For example, in the unit "Chinese Perspectives" the statement of inquiry focuses on individuals making personal choices and requires students to analyse how an individual's beliefs and values are affected by their society and culture.	

Pedagogy and assessment: Approaches to teaching and assessing literacy in the MYP (coding matrix 2)

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: assessment criteria, performance level
Theoretical perspective/ overview	The MYP takes a **constructivist** approach to teaching and learning. The goal for students "is the active construction of meaning by building connections between (current understanding) and new information and experience, derived from the **inquiry** into new content" (MYP1, p. 72).	The MYP has adopted a pedagogy based on "**student inquiry** into **concept**s through content in authentic **global contexts**" (MYP1, p. 72). Teaching and learning in the MYP is: • inquiry based; • concept driven; • contextualised; • collaborative; • differentiated; and • informed by assessment. Language and literacy teaching and learning is systematically addressed in the two subject groups Language and Literature and Language Acquisition. For other subject groups,	Teaching and learning methods and strategies are documented in the Action section of the unit planner, which covers: • content (selected or required); and • description of the learning process: o learning experiences and teaching strategies; o formative assessment; and o differentiation. Teaching strategies and learning experiences are intended to meet subject group **objectives** and support the development of **ATL skills**. ATL skills are	The MYP acknowledges that moving from the primary to middle years presents challenging literacy demands for students. Language learning is recognised as a developmental process in which students have opportunities to progress to the next phase of language development. The subject group Language Acquisition includes four continua that set out expectations for oral, visual, and written communication learning, as a guide for planning teaching strategies and learning experiences (MYP2).	In the MYP, assessment criteria correspond to subject group objectives. ATL skills are not formally assessed but contribute to students' achievement in all subject groups. **MYP command terms** define a range of learning objectives and assessment criteria in MYP subject groups. They indicate the level of thinking and type of performance (or behaviour) required of students. MYP command terms are closely related to ATL skills. They frequently have language and literacy demands built into them.

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: assessment criteria, performance level
		attention to language and literacy learning is addressed most explicitly through the ATL communication skills. These skills are principally developed and applied through the inquiry process.	both integrated and taught explicitly.		
Basic literacy skills	The MYP recommends teaching skills explicitly and giving students structured opportunities to practise them. This includes the basic literacy skills.	Within an inquiry approach the MYP recommends teaching skills explicitly and giving students structured opportunities to practise them as well as integrating them within learning experiences. This includes basic literacy skills.	In the examples examined, there is some evidence that teaching strategies and learning experiences explicitly address basic literacy skills, for example, through the identification of ATL "How to" activities and in close reading activities (MYP10). There is also evidence that basic literacy skills are integrated into learning experiences, for example, when students make inferences and predictions regarding the role of	The MYP acknowledges that the six skill areas in PYP language – listening, speaking, reading, writing, viewing, and presenting – are further developed in the MYP. The Language Acquisition continua for reading comprehension and writing include the development of basic literacy skills. Basic literacy skills are evident in some progressions of learning, noting that progression is frequently indicated by	MYP command terms that involve basic literacy skills include outline, identify, compare, describe, state, and explain. The increasing expectations of students' achievement levels are frequently indicated by the choice of verbs. For example, in Science assessment Criterion D: Reflecting on the impacts of science (year 5) students move from being able to outline the ways science is used to address a specific problem or issue, to being able to

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: assessment criteria, performance level
			individuals in various texts (MYP10).	increased levels of sophistication, complexity, and depth of learning.	summarise, describe, or explain these (MYP4).
Disciplinary literacy	The MYP advises schools to ensure there is sufficient time and pedagogical expertise for staff to allow for the development of literacy for all students so they are able to manage the academic demands of the MYP (MYP1).	Disciplinary literacy is developed within subject group courses and units that are structured around sustained inquiry in global contexts.	For the subject groups examined, disciplinary literacy is integrated into teaching strategies and learning experiences. The aspect of disciplinary literacy most likely to be taught explicitly is discipline-specific vocabulary. This may be in a formative assessment activity, where students study key vocabulary to ensure understanding of content (MYP9).	In the two subject groups Language and Literature and Language Acquisition, disciplinary literacy develops through a progressive exploration of concepts such as style, character, theme, and setting. In other subject groups examined, any conscious attention to the development of disciplinary literacy concerns discipline-specific terminology.	Assessment criteria reflect the focus on disciplinary terminology. Students are expected to use the language of the discipline effectively.

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: assessment criteria, performance level
New literacies	The MYP recommends teaching skills explicitly and giving students structured opportunities to practise them. This includes new literacies.	Within the inquiry approach the MYP recommends teaching skills explicitly and giving students structured opportunities to practise them as well as integrating them within learning experiences. This includes new literacies.	In the examples examined, some explicit literacy teaching methods and strategies are evident, e.g. teacher modelling of text analysis, as well as reference to non-specified teacher-directed and student-centred strategies (MYP9).	In the two subject groups Language and Literature and Language Acquisition, the development of new literacies such as multimodal and critical literacies are evident in the increasing complexity and sophistication in the progressions of learning. The Language Acquisition continua for reading comprehension and writing show the development of new literacies, particularly as students' language proficiency increases.	MYP command terms that involve new literacies are most likely to involve critical literacy. These terms include analyse, evaluate, critique, and synthesise, which are associated with higher order or critical thinking skills and are most likely to occur at high achievement levels in assessment criteria across subject groups.
Multilingualism	The MYP advocates support for maintenance of students' mother tongue and host country language, and schools are encouraged to offer language and literature courses in multiple languages.	The multilingual/ intercultural dimensions of language and literacy are developed within subject group courses structured around sustained inquiry in global contexts. Global contexts offer students opportunities to	Unit planners address the need for differentiation, recognising students' prior learning and past knowledge and experiences as part of the learning process (MYP9).	In the examples examined, there is no evidence of specific attention to the development of the multilingual/ intercultural dimensions of language and literacy.	In broad statements, the MYP aims for assessment to be set in a variety of cultural and linguistic contexts (MYP1). However, the multilingual/ intercultural dimensions of language and literacy are

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: assessment criteria, performance level
		consider real-life issues and concerns to make personal connections to a common humanity.	Scaffolding is identified as a strategy for students who require more guidance.		not evident in subject group assessment criteria.

Appendix G – Document Analysis Matrices for Continuum Documents

Language and Learning in IB Programmes (C1), *Learning in a Language Other Than Mother Tongue in IB Programmes* (C2), *Guidelines for Schools on Language Policy* (C2), *Developing Academic Literacy in IB Programmes* (C2)

Some text overlap exists in continuum documents, particularly between C1 and C2 – noting C1 was published in 2011 and updated in 2014, more recently than C2 (2008). Section 6 of C1 seems to be an updated version of C2, and C2 an extended version of Section 5 C1.

Curriculum: literacy objectives and goals across the continuum (coding matrix 1)

Literacy theme	General guidelines	Language learning in PYP and MYP	Planning for language learning
Theoretical perspective/ overview	***Language and Learning*** provides a framework for understanding the roles of language in learning and for the development of multilingualism in IB students (C1, p. 1). Based on the IB stance on language that the ability to communicate in a variety of modes in more than one language is essential to the concept of an international education that promotes intercultural perspectives (C1, p. 1). Language is described as: • integral to exploring and sustaining personal development and identity; • socially constructed and dependent on the number and nature of our social interactions and relationships; • a strong enculturating force shaping particular interactions shaping thinking with specific patterns of dialogue and discourse helping develop particular kinds of learning and cognitive processes; • playing a vital role in the construction of meaning and	To accommodate the diverse needs of multilingual students and to fulfil the aim for all students to learn at least two languages, the IB offers a wide range of language options. **Language learning in the PYP** In the PYP students have the opportunity to learn more than one language from at least the age of 7. Schools are also required to show support for mother tongue and host country language learning, as appropriate. In the PYP, language teaching and learning: • are social acts, dependent on relationships with others, with context, with the environment, with the world, and with the self;	Mapping the dynamics of individual language profiles can be useful when planning for future learning. Teachers are advised to: • record information in student language profiles and maps that will support planning for future differentiation; and • consider the time and strategies necessary for activating and building up background knowledge when planning a unit of work or lesson (C1, p. 29).

Literacy theme	General guidelines	Language learning in PYP and MYP	Planning for language learning
	providing an intellectual framework to support conceptual development; • imperative for the development of literacy and multiliteracies; and • linked to empowerment through success in school (C1, p. 3). Sets out a framework of language learning domains, grouped under three strands. • learning language: discrete skills, basic interpersonal communicative skills (BICS), literacy and the art of language; • learning through language: cognitive academic language proficiency (CALP); and • learning about language: literary analysis and critical literacy. These domains are described in more detail where they relate to project themes. Roles of language – communication, knowledge building, expression, cognitive development, analysis, and evaluation – connect to language domains (C1, p. 27). BICS are concerned with the social interactions through which learners acquire vocabulary, syntax, accompanying gestures, and an understanding of semantics. As such, it addresses oracy rather than literacy, as traditionally defined (reading and writing).	• is relevant, engaging, challenging, and significant; and • best serves students' needs when it occurs within meaningful contexts. Reiterates messages from PYP Language annex and scope and sequence: • language as an essential vehicle for inquiry and the construction of meaning; • empowering the learner; and • providing an intellectual framework to support conceptual development and critical thinking. Language learning is depicted as a developmental process where there are opportunities for students to build on prior knowledge and skills to help them progress to the next phase of language development. The language continua can be used to support learning in the language(s) of instruction and any other language	

Literacy theme	General guidelines	Language learning in PYP and MYP	Planning for language learning
Basic literacy skills	**Discrete skills** required in any language learning involve the development of both receptive (e.g. listening and reading) and productive (e.g. speaking and writing) skills. Literacy and the art of language covers an increase in reading and writing of a wide range of texts for different purposes and audiences that occurs in primary school, principally through the subject area Language Arts.	learning that is going on in the school (C1, p. 17). **Language learning in the MYP** The MYP is guided by the concepts of holistic learning, intercultural awareness, and communication. Students are required to learn at least two languages (Language A and Language B), and encouraged to learn more (C1, p. 17). Language A equips students with linguistic, analytical, and communicative skills that can also be used in an interdisciplinary manner across all other subject groups. Language B encourages students to gain competence as critical, competent communicators, enabling them to become multiliterate and thus able to understand and use print-based and digital, spoken, written, and visual texts (C1, p. 18). **Developing a school language policy** Every authorised IB world school is required to have a written language policy, consistent with IB principles and practices, and the school's language philosophy and language profile.	
Disciplinary literacy	The development of academic skills requires "a threshold level of multiliteracy or literacy development with the ability to engage with a variety of texts … as well as sophisticated understandings of language use in increasingly abstract and decontextualised settings" (C1, p. 23). Stresses the importance of early opportunities for literacy development across the curriculum for the development of the academic language of abstract conceptualisation and associated cognitive development in later schooling. CALP – the development of academic language skills required for discourse in abstract and decontextualised settings in later schooling (C1, p. 24). The documents point out that: • to be successful in school, students need a threshold understanding and ability to use a variety of discourses and texts across subject groups; and • academic language is inextricably entwined with academic thinking, which uses different frames "as mental structures to explain how we shape and construct meaning and describe	Describes a framework for the development of CALP to be used for • planning activities that maximise learning of academic literacy; • differentiating activities for diverse learners; • checking that all literacy skills are practised sufficiently; and • collaborating with literacy specialists and other teachers (C2, p. 1). The framework has a horizontal axis showing the stages of the pedagogical process for developing CALP and a vertical axis that indicates CALP skills (listening, speaking, interacting, reading,

Literacy theme	General guidelines	Language learning in PYP and MYP	Planning for language learning
	conceptions of the world … Thinking differently requires using language differently" (C1, p. 25). Notes CALP is particularly difficult for second language learners CALP skills include literacy skills and thinking skills. Literacy skills include abilities to: • listen for meaning and speak meaningfully, both also part of interactive dialogues; • apply complex reading skills to actively decode academic texts; and • write complex texts for a variety of academic purposes and audiences (C2, p. 3).	In the PYP a language policy should: • promote inquiry-based authentic language learning; • focus on the transdisciplinary nature of language learning; • incorporate the teaching and learning of language into the programme of inquiry; and • develop and interrelate the skills of listening, speaking, reading, and writing; • provide for the teaching of additional languages; and • promote consistency of practice in the teaching and learning of all languages. In the MYP a language policy should: • formulate practices for the provision of languages A and B; • integrate the learning of languages with learning in the subject groups; and • integrate language learning with	writing, and thinking).
New literacies	The IB acknowledges the importance of critical language awareness and its role in critical thinking in all learning and the growth of intercultural awareness and international mindedness (C1 p 3) Connects critical literacy to recognition of the deep relationships between language, identity, culture and power (C1 p 9) and to critical thinking. (C1 p 26) In the IB, critical literacy is described as involving a metalinguistic critique of all texts, including literary analyses. It pays attention to the ways reality is mediated by language and texts are constructed to represent versions of reality. It requires attention to: textual purpose; gaps and silences; power and interest in relation to purpose; multiple meanings.		

Literacy theme	General guidelines	Language learning in PYP and MYP	Planning for language learning
Multilingualism	The IB commits to students being able to communicate in more than one language, recognising that: • multilingual classrooms are increasingly the norm; • the language profiles of IB students are diverse; and • sometimes one language may be more dominant than another in the same individual (C1, p. 1). Describes multilingualism as a reconfiguration of how we think about languages that takes into account the complex linguistic realities of millions of people in diverse sociocultural contexts (C1, p. 8). Introduces O'Laoire and Aronin's (2006) term "multilinguality" as an individual store of languages as well as metalinguistic awareness, learning strategies and opinions, preferences and passive or active knowledge on languages, language use, and language learning/acquisition. It is expressed through actions, perceptions, attitudes and abilities, and displayed through physical, cognitive, cultural and social qualities as well as being a "linguistic facility" (C1, p. 8). Introduces the terms "languaging", and "translanguaging" to capture the idea that learners develop and integrate new language practices into a complex dynamic multilingual repertoire (C1, p. 8). The IB takes the stance that multilingualism is a fact, a right, and a resource in IB world schools. This means students should: • have access to global languages;	interdisciplinary planning.	Students are required to learn at least two languages (Language A and Language B) and encouraged to learn more (C1 p 17)

Literacy theme	General guidelines	Language learning in PYP and MYP	Planning for language learning
	• maintain and develop their mother tongues for pedagogical, social, and cultural reasons; • have a multilingual education – for preservation of cultural identities, promotion of mobility, and dialogue. Outlines the advantages of multilingual education for minority students – self-esteem, academic achievement, better L1 literacy levels, CALP. Also promotes intercultural awareness and international mindedness. "When learning new languages we are exposed to new ideas, alternative perspectives, and opportunities to participate in dialogue. … Reflection on the different perspectives of another culture enables us to reflect on our own, and the assumptions within it" (C1, p. 12). BICS is important for personal development and cultural identity as well as for intercultural awareness (C1, p. 23). Notes the implications on early literacy development for students' learning in a language that is not their mother tongue, e.g. the importance of maintaining and transferring knowledge and skills from one language to another. By mapping students' language profiles it is possible to see their capabilities within different language domains, e.g. someone may be fluent in BICS in English and Japanese but capable of only limited CALP in Japanese. Many academics have high levels of CALP in English but have very limited BICS (C1, p. 27).		

Pedagogy and assessment: approaches to teaching and assessing literacy across the continuum (coding matrix 2)

Literacy theme	General guidance	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development - transitions	Assessment of literacy marking criteria and performance level
Theoretical perspective /overview	Describes a shift in pedagogies for language learning because of the recognition that language is the medium for learning across the whole curriculum, in the various subject areas and within the transdisciplinary and interdisciplinary components. Language learning becomes the responsibility of all teachers, and every teacher becomes a language teacher. The IB sees new learning and understanding as constructed on previous experiences and conceptual understandings in a developmental continuum, drawing from Krashen's theory of comprehensible input and Vygotsky's theory of zone of proximal development (ZPD).	The pedagogical approach to language learning should: • be open and inclusive; • affirm each learner's identity and autonomy; and • promote critical thinking (C1, p. 4). The IB proposes a pedagogy that emphasises four dimensions of teaching, important in ensuring learner participation, promoting engagement, and successfully constructing understandings. These are: • activating prior understanding and building background knowledge; • scaffolding learning;	**Scaffolding** is described as a temporary strategy that enables learners to accomplish a task that would otherwise be impossible or much more difficult to accomplish. Examples include: • use of mother tongue; • visual and practical aids; • graphic organisers; • demonstrations; • dramatisation; • small, structured collaborative groups; and • language of instruction (C1, pp. 29–30). Identifies three important stages in constructing new learning where scaffolding strategies are effective: • new comprehensible input;	The IB describes its configuration of language domains as a continuum. It notes that this suggests and supports the idea of a developmental progression in language and learning, but also that this progression may not develop in the same way in the learning of all languages (C1, p. 27).	

Literacy theme	General guidance	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development - transitions	Assessment of literacy marking criteria and performance level
		• extending language; and • affirming identity.	• processing of new input; and • new comprehensible output (C2, pp. 2–3). All scaffolding should foster learners' increasing independence in taking responsibility for developing strategies for their own learning, thus always extending the ZPD.		
Basic literacy skills		Teachers can help students extend their language and reading by combining high expectations with numerous opportunities for learner-centred practice and interaction with cognitively rich materials and experiences.	Learning about the use of language and how linguistic genres work as frameworks in constructing meaning in particular contexts also provide valuable scaffolding that gives learners access to a rich diversity of texts. Writing frames developed from functional grammars provide a way of understanding how the language and text features that characterise various genres (such as "a report", "an explanation" or "a persuasive essay") achieve their		In all MYP subject groups, communication is both an objective and an assessment criterion (C1, p. 17).

Literacy theme	General guidance	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development - transitions	Assessment of literacy marking criteria and performance level
			communicative purposes (C1, p. 30). Basic literacy skills support CALP, e.g. it is noted that textual features, and the decoding and encoding skills required for understanding them, vary depending on the disciplinary discourse (C2, p. 3).		
Disciplinary literacy	Points to the potential role of functional and other modern approaches to grammar as a way to better understand how academic language can be learned (C1, p. 9). Pedagogy for language and learning focuses on aspects that relate specifically to developing a threshold level of CALP (C1, pp. 28–31). The IB identifies four essential dimensions in a language and learning cycle of good practice:	**Extending language** In view of the requirement to read and write increasingly sophisticated texts, need to understand features of academic language, for example: • the complexity and abstraction of concepts; • the increased density of low-frequency and technical vocabulary and their etymologies; and • increasingly sophisticated	The process for CALP pedagogy may be summarised as: Background knowledge: • activating and building up background knowledge. Scaffolding for: • new comprehensible input; • processing of new input; and • new comprehensible output. Extended CALP: • demonstrating and applying.		

Literacy theme	General guidance	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development - transitions	Assessment of literacy marking criteria and performance level
	• affirming identity; • activating and building background knowledge; • scaffolding learning; • extending language (C2, p. 1).	grammatical constructions (e.g. the passive voice). Opportunities for enjoying reading and writing in a wide range of genres are important in developing cognitive academic language proficiency (C1, p. 30).			
New literacies	Reflection and critical thinking in all learning is necessary for the development of international mindedness and intercultural awareness (C1, p. 12).	Relationship between language, identity, culture, and power – view of multilingualism as a resource.	New literacies support CALP, e.g. it is noted that all literacy skills are linked to corresponding complex thinking skills from which they become increasingly inseparable, such as analysing and evaluating concepts and ideas. Critical literacy is particularly significant in assessing the validity of perspectives that have contributed to the social construction of knowledge that is encoded in language (IB 2011: 26) (C2, p. 3).		
Multilingualism	The IB commitment to multilingualism is evident in	**Affirming identity**	Teachers are advised to:		Broad guidance (C3) suggests thinking about

Literacy theme	General guidance	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development - transitions	Assessment of literacy marking criteria and performance level
	standards and practices, which set out: • the importance of language learning – mother tongue, host country, and other languages; • all teachers being responsible for language development; • addressing diversity of student needs, including learning in a language other than mother tongue; and • all schools having a language policy. The diverse multilingual, multicultural, and multimodal attributes of learners are resources for further learning and for the development of critical literacy – important factors in promoting intercultural	Language is integral to identity, which in turn determines how a person will act. A mother tongue and any other languages used in constructing meaning are intimately connected to a person's relationship with the world and how they come to feel about that world. Suggestions for affirming student identity include: • promoting a class and school environment that welcomes and embraces the diversity of languages, cultures, and perspectives; • valuing and using the diversity of languages, cultures, and perspectives to enhance learning; • establishing a mother tongue programme for	• explicitly **activate students' prior understanding**, using the mother tongue and other languages when appropriate; and • use their knowledge of students' prior understanding in all languages to differentiate tasks and activities that will **build up the further background knowledge** necessary for new learning to occur (C1, p. 29). Further guidance states that because background knowledge includes previous experiences and conceptual understandings in any language, it is important to: • activate students' previous background knowledge, which may be in a non-target language; • activate current CALP in the target language; and • build up background CALP to		linguistic profiles in relation to assessment.

Literacy theme	General guidance	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development - transitions	Assessment of literacy marking criteria and performance level
	awareness and international mindedness (C1, p. 9).	all students; and • liaising with parents to establish understanding of how best to collaborate to achieve shared goals (C1, p. 29).	a stage that allows for the planned new learning to take place (C2, p. 2).		

Appendix H – Document Analysis, Continuum: Technology

Curriculum: literacy objectives and goals across the continuum (coding matrix 1)

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Approaches to learning/ key concepts	Planning for learning
Theoretical perspective /overview	Technology is described as a **concept** that connects to literacy. It is viewed as a cognitive tool that facilitates communication and provides a means to express one's thoughts and feelings (p. 3). Technology literacy is identified as an aim of all IB programmes. It is defined in two ways – as the ability to adapt to and develop new technologies as needed (p. 4), and the result of developing skills, strategies, and ways of thinking that facilitate adept technology use (Glossary, p. 22). Technology literacy includes being able to discern appropriate technologies based on the desired outcomes of the task (p. 7). To be technologically literate, one must discern when and how to use technology, and be able to articulate why a technology is fit for purpose, that is, suited to completing a task (Davies 2011: 46–47) (p. 16).	The principle of Exploring provides some links between technology integration and subject areas: • exploring means studying both the evolution and the impact of technology on a subject or discipline; • exploring also considers new technologies that are essential to the study of a subject or discipline (p. 17).	Agency, Information and Design (AID) are identified both as **concepts** and a set of principles that link technology to IB ideals, approaches to learning (ATLs) and teaching. They are regarded as intentions and actions that foster technology literacy (p. 11). **Agency** refers to how to exist and develop oneself using technology **Information** refers to how to find and organise material using technology. Information can be authored, compiled, or remixed. Information also involves analysis and critical thinking. **Design** refers to how to envisage using technology. The results can be material, digital, or conceptual (as is common with design thinking). Design examples include outlining the steps to build a machine, using design principle maps to plan academic papers.	By including AID in school planning, it is possible to create environments that foster technology literacy, provide structured opportunities for digital participation, and create processes that promote seamlessness in technology use (p. 11). Technology integration concerns the role technology plays in learning and is a part of lesson planning (p. 14).

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Approaches to learning/ key concepts	Planning for learning
	Technology aims to be useful in collecting, creating, designing, and analysing significant content (p. 12).		Technology integration concerns the role technology plays in learning as well as how we incorporate technology literacy concepts (AID) into teaching and learning.	
Basic literacy skills	Makes a distinction between traditional and online reading skills and forms of expression.			
Disciplinary literacy				
New literacies	Technology literacy is included among multiliteracies in an IB education (p. 3). It is distinguished because it requires skills that would not exist without technology (p. 6). It may be, for example, that students need different skill sets to read online to those they need to read offline. Technology has a role in prompting students to think differently and to use language differently – thus broadening their experiences and preparing them for participation in the world at large (p. 5). ICT skills are required for **content creation** and **digital participation**			

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Approaches to learning/ key concepts	Planning for learning
	(Hague, Williamson 2009: 26). Digital participation involves active engagement with content and its producers, which in turn affects the kinds of skills students need to become responsible producers as well as consumers of knowledge. Technology use supports the multiliteracies stance in IB programmes, which encourages developing the "ability to engage with a variety of texts" (p. 9). New literacies are defined in the glossary as "A set of literacies related to technology use and the digital world". "The new literacies of the Internet and other ICTs include the skills, strategies, and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives" (Leu et al. 2004, p. 1574). "New Literacies" with initial capital letters is also the academic movement			

Literacy theme	General guidelines	At subject level, transdisciplinary themes	Approaches to learning/ key concepts	Planning for learning
	that has framed discussions around how the digital world has affected our understanding of literacy (p. 21).			
Multilingualism	Technology literacy aims to support multilingualism and multiculturalism through enabling student participation in the world (p. 5).			

Pedagogy and assessment: approaches to teaching and assessing literacy across the continuum (Coding matrix 2)

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: marking criteria. performance level
Theoretical perspective /overview	Endorses a constructivist approach. The addition of technological understandings, processes, and devices to lesson design should be seamless, meaning that the use of technology will become part of a repertoire of tools for students and educators. This is achievable with mindsets that: • value and accept technology use in the classroom; • involve agency on the part of students and educators; • provide opportunities for collecting, creating, and analysing information as part of	Technology literacy mirrors the IB inquiry, action, and reflection cycle – being a combination of acquired knowledge, applied knowledge, and reflection on both (p. 4). Technology integration is a pedagogical approach that concerns the role technology plays in learning as well as how to incorporate technology literacy concepts into teaching and learning (p. 13). Integration: • infuses ideas and concepts; • relates to curriculum and lesson planning; • explores the role of technology in subjects and disciplines; and	Three terms summarise how technology use supports the IB's constructivist, inquiry-based, and authentically assessed pedagogies - *Exploration* considers the impact of technology on curriculum design and development. Some educators may explore the evolution of technology in a **subject,** or may consider technology as a concept when developing curriculums. *Employment* considers how to use technologies in classroom practice. Educators employ devices to support learning. Evaluation analyses the impact and effectiveness of technology. Educators evaluate the skills students may need to complete a technology-based assessment, or may choose to evaluate		Technology literacy is demonstrated through ways of thinking more than mastery of tools. The most compelling evidence of technology literacy is the ability to adapt to and develop new technologies as needed. What those technologies may be depends on context. (p 4) Successful technology integration is demonstrated with improved student performance. Evaluating includes identifying technology-influenced skills to prepare for assessments or measuring the effectiveness of

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: marking criteria. performance level
	the learning experience; and • incorporate design thinking and concepts as paths to learning.	• involves technology integration coaches and early adopters. Technology integration and technology literacy go hand in hand, with an emphasis on mastering the thinking rather than devices (p. 16). Provides an expanded framework for technology integration that comprises: • exploring technological change and new technologies in specific disciplines (written curriculum); • employing, using technological devices and practices in the classroom (taught curriculum); and • evaluating – analyses the impact and effectiveness of technology and evaluating technology	how well a new technology works in the classroom (p. 20).		technology integration and implementation.

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: marking criteria. performance level
		skills (p. 20) (assessed curriculum) (p. 17).			
Basic literacy skills	Identifies common uses of ICT for operations such as word processing or sending email, noting that Web 2.0 and 3.0 technologies such as blogging and 3D imaging are used more sporadically in classrooms.				
Disciplinary literacy		Technology integration explores the role of technology in subjects and disciplines and adjusts learning based on context (p. 14).			
New literacies	To be technologically literate, one must discern when and how to use technology, and be able to articulate why a technology is fit for purpose, that is, suited to completing a task.	The glossary includes an alternative technology integration framework that focuses on discernment as a key element of technology literacy. The three components of this framework are awareness, praxis, and phronesis (practical wisdom) (p. 19).			

Literacy theme	General guidelines	Pedagogical approach (language learning)	Evidence of explicit literacy teaching methods and strategies	Attention to literacy development – transitions	Assessment of literacy: marking criteria. performance level
Multilingualism					

Appendix I – Annotated Bibliography

Reference Type: Journal Article

Record Number: 38

Author: Hillman, Ann Marie

Year: 2014

Title: A Literature Review on Disciplinary Literacy

Journal: Journal of Adolescent & Adult Literacy

Volume: 57

Issue: 5

Pages: 397-406

Short Title: A Literature Review on Disciplinary Literacy

ISSN: 1081-3004

DOI: 10.1002/jaal.256

Keywords: Specific subject areas (math, art etc.)

Standards

Learning strategies

Adolescence

Text types, text features

Abstract: Current adolescent literacy rates cause concerns at the number of students who graduate high school with basic or below-basic reading skills. The Common Core State Standards promote disciplinary literacy, which presents advanced literacy skills embedded in content area instruction. Disciplinary literacy is argued as a way to raise adolescent literacy rates. This literature review examines how Discourse theory frames disciplinary literacy as an apprenticeship model, and how instruction in mathematical Discourses focuses on communication and reasoning at the secondary level. Mathematical standards are analysed for literacy features, and then studies of secondary Mathematics classrooms are reviewed in light of these features. The review is offered to help Mathematics teachers and literacy specialists build a shared knowledge base of mathematical literacy in secondary classrooms.

Research Notes:

Purpose of study: To describe ways in which disciplinary literacy operates within secondary Mathematics with particular reference to the Common Core Standards (CCS) in the U.S.

Type of study: Literature and document review

Major findings: Beyond a description of the development of disciplinary literacy as a field distinct from content area literacy, this article provides an analysis of the Common Core Standards for Mathematics. A useful table unpacks the CCS for math to identify the author's interpretation of the disciplinary literacy discourses embedded with each of the CCS mathematical practices.

Recommendations: The author commends the focus on disciplinary literacy implied within the CCS for Mathematics but warns that successful implementation is doomed without teacher professional development in the area

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Reference Type: Journal Article

Record Number: 42

Author: Fang, Zhihui and Coatoam, Suzanne

Year: 2013

Title: Disciplinary Literacy : What You Want to Know About It

Journal: Journal of Adolescent & Adult Literacy

Volume: 56

Issue: 8

Pages: 627

Short Title: Disciplinary Literacy : What You Want to Know About It

ISSN: 1081-3004

Keywords: Reading teachers

Quality management

Teaching methods

Educational evaluation

Teachers

Literacy

Abstract: The recent call for a disciplinary perspective on literacy instruction in the content areas has generated considerable interest among literacy educators. This column addresses some of the questions that have been raised about disciplinary literacy. These questions concern the definition and assessment of disciplinary literacy, as well as the timing, teacher capacity, evidence base, and target audience for disciplinary literacy instruction. The recent call for a disciplinary perspective on literacy instruction in the content areas has generated considerable interest among literacy educators. This column addresses some of the questions that have been raised about disciplinary literacy. These questions concern the definition and assessment of disciplinary literacy, as well as the timing, teacher capacity, evidence base, and target audience for disciplinary literacy instruction. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: To provide a review of the state of play in the field of disciplinary literacy

Type of study: An overview of the literature

Major findings: The article provides a clear summary of the genesis of disciplinary literacy and its differentiation from content area literacy.

Recommendations: The article recommends that discipline literacy can begin in the upper primary grades but acknowledges that this is not universally agreed upon. The authors acknowledge that there are not enough large-scale studies on the implementation of disciplinary literacy in schools to provide conclusive evidence that such an approach is any more effective than more generic literacy approaches, but they point to a number of promising studies and urge for researchers and practitioners to continue the investigations.

Reference Type: Journal Article

Record Number: 60

Author: Moje, Elizabeth Birr

Year: 2008

Title: Foregrounding the Disciplines in Secondary Literacy Teaching and Learning: A Call for Change

Journal: Journal of Adolescent & Adult Literacy

Volume: 52

Issue: 2

Pages: 96-107

Short Title: Foregrounding the Disciplines in Secondary Literacy Teaching and Learning: A Call for Change

ISSN: 1081-3004

Keywords: Evaluation

High school teachers

High school teaching

Literacy programs

Abstract: [...] in the current sociopolitical context wherein secondary subject area teachers are being exhorted to take up literacy teaching practices (often called strategies) and literacy coaches are being groomed for work in middle and high school classrooms, it is incumbent on secondary school literacy researchers to argue for a complex view of disciplinary literacy instruction. The work and commitment required for developing an integrated approach to literacy teaching and learning in the secondary subject areas is enormous, requiring conceptual changes in our definitions, cultural changes in our practices, and structural changes in the enduring institutions of the secondary school and secondary teacher education.

Research Notes: Purpose of the study: To establish a rationale and research base for“disciplinary literacy”

Type of study: A literature review and position paper

Major findings: This is a seminal paper, essentially presenting a position paper on disciplinary literacy and placing it into the field of literacy teaching. The article provides a clear differentiation between disciplinary literacy as opposed to content area literacy, and a strong case for its inclusion in subject teaching. The author reviews the literature seeking to understand why content area literacy approaches have not enjoyed much take-up in secondary schools. She concludes that the focus on general literacy has alienated both teachers and students in the discipline areas, and suggests that disciplinary literacy provides both a space and a claim for secondary discipline teachers to take responsibility for the literacy of their discipline as they are the keepers of this literacy.

Recommendations: The author suggests that the teacher knowledge and curriculum time constraints that have contributed to low take-up of literacy teaching by discipline teachers remain a challenge for disciplinary literacy. She acknowledges the challenge is complex, and requires some reconceptualising of both literacy and discipline content teaching, and suggests that close collaborations between discipline and literacy specialists are required where the expertise of discipline teachers as communicators in the discipline must be acknowledged by literacy specialists.

Reference Type: Journal Article

Record Number: 43

Author: Shanahan, Cynthia and Shanahan, Timothy

Year: 2014

Title: Does Disciplinary Literacy Have a Place in Elementary School?

Journal: The Reading Teacher

Volume: 67

Issue: 8

Pages: 636-639

Short Title: Does Disciplinary Literacy Have a Place in Elementary School?

ISSN: 0034-0561

DOI: 10.1002/trtr.1257

Keywords: Content literacy

Writing

Reading strategies

Literature

Specialized vocabulary

Vocabulary

Comprehension

Strategies, methods and materials

Teaching methods

Elementary schools

Elementary school teachers

School discipline

Academic standards

Abstract: This commentary discusses what disciplinary literacy is and why it is important. It then discusses the ways in which elementary school teachers can infuse aspects of disciplinary literacy into elementary instruction. It argues that the Common Core Standards, even those at the K–6 level, are providing avenues for preparation for disciplinary literacy. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: Describe practical implementation of disciplinary literacy in elementary schools

Type of study: Research into practice

Major findings: The authors, leaders in the field of disciplinary literacy, provide an account of studies which give indications that elementary-aged children can work with discipline-specific literacies. They then provide a range of teaching strategies to support teachers to teach the text types and vocabulary specific to the sciences and the social sciences.

Recommendations: The authors propose there is no harm in starting elementary school students working with discipline-specific literacies, and substantial benefit, as it prepares them for the texts they will encounter in middle and high school.

Reference Type: Journal Article

Record Number: 46

Author: Hynd-Shanahan, Cynthia

Year: 2013

Title: What Does It Take? The Challenge of Disciplinary Literacy

Journal: Journal of Adolescent & Adult Literacy

Volume: 57

Issue: 2

Pages: 93

Short Title: What Does It Take? The Challenge of Disciplinary Literacy

ISSN: 1081-3004

Keywords: United States

Reading teachers

Literacy

Methods

Teaching methods

Teachers

Abstract: Often, teachers and administrators have questions about what it means to teach disciplinary literacy. This article addresses the most common questions and highlights the differences between disciplinary literacy and content area reading. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: To answer frequently asked questions about disciplinary literacy

Type of study: Commentary

Major findings: This article provides clear answers to four commonly asked questions. The questions and answers are a compilation of several years of the author's work with teachers in schools, supporting them to implement disciplinary literacy approaches.

Recommendations: The author concludes there is increasing evidence that disciplinary literacy approaches in schools are improving student outcomes in the disciplines.

Reference Type: Journal Article

Record Number: 53

Author: Brozo, William G., Moorman, Gary, Meyer, Carla and Stewart, Trevor

Year: 2013

Title: Content Area Reading and Disciplinary Literacy: A Case for The Radical Center

Journal: Journal of Adolescent & Adult Literacy

Volume: 56

Issue: 5

Pages: 353

Short Title: Content Area Reading and Disciplinary Literacy: A Case for The Radical Center

ISSN: 1081-3004

Keywords: Content area reading

The Potentials of K-12 Literacy Development in the International Baccalaureate PYP and MYP

Study and teaching

Reading instruction

Teachers

Literacy programs

Pedagogy

Abstract: Within the past few years literacy scholars have begun voicing serious doubts on theoretical and practical grounds about the efficacy of the longstanding notion that every teacher is a teacher of reading. In this commentary, we add our voices to the conversation around content area literacy as well as offer our perspectives on the recent calls for alternative practices grounded in disciplinary literacy. We conclude by advocating compromise based on honest, intelligent dialogue between literacy specialists and content area teachers. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: In this article the authors identify common ground between disciplinary literacy and content area reading in order to inform teacher practice

Type of study: Commentary and literature review

Major findings: The authors find a false dichotomy of either/or is building within the fields of disciplinary and content area literacy teaching. They believe there is a useful overlap between generic reading strategies and the need to apprentice students into the specific literacy practices of the disciplines.

Recommendations: The authors recommend a productive middle ground will be found through authentic collaboration between specialist discipline teachers and reading specialist teachers.

Reference Type: Journal Article

Record Number: 35

Author: Billman, Alison and Pearson, PDavid

Year: 2013

Title: Literacy in the disciplines

Journal: Literacy Learning: The Middle Years

Volume: 21

Issue: 1

Pages: 25-33

Short Title: Literacy in the disciplines

ISSN: 1320-5692

Keywords: Language and languages

Reading (Elementary)

Knowledge management

Literacy

Study and teaching

United States

Teaching

Literacy programs

Methods

Research

Abstract: The call for teaching literacy in the disciplines raises questions about what characterises instruction that fosters facility with language in particular domains. One might suggest that using reading, writing, talking, and thinking to learn and learning to read, write, talk, and think are always at the intersection of developing expertise in any subject. This article presents five fundamental principles for understanding disciplinary literacy, considers some challenges that educators face, and then provides suggestions for supporting students as they learn to use reading, writing, talking, and thinking in the pursuit of acquiring disciplinary knowledge.

Research Notes:

Purpose of study: This article provides practitioners with pedagogical principles for taking a disciplinary approach to literacy instruction

Type of study: Research into practice

Major findings: The article begins with a research-based rationale for disciplinary-based approaches to literacy across all grades of school. The authors make a particularly strongly argued case for working with discipline-specific literacy from the beginning of school. They provide five pedagogical principles alongside some specific classroom examples for implementing discipline-based literacy teaching.

Recommendations: The authors recommend disciplinary-based literacy approaches as a means of engaging students with meaningful literacy learning – providing authentic contexts for learning.

Comments: Very clearly written and accessible for busy practitioners

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Reference Type: Journal Article

Record Number: 62

Author: Shanahan, Timothy and Shanahan, Cynthia

Year: 2008

Title: Teaching disciplinary literacy to adolescents: Rethinking content area literacy

Journal: Harvard Educational Review

Volume: 78

Issue: 1

Pages: 40 - 61

Short Title: Teaching disciplinary literacy to adolescents: Rethinking content area literacy

Abstract: The authors argue that “disciplinary literacy” – advanced literacy instruction embedded within content area classes such as math, science, and social studies – should be a focus of middle and secondary school settings. Moving beyond the oft-cited “every teacher a teacher of reading” philosophy that has historically frustrated secondary content area teachers, the authors present data collected during the first two years of a study on disciplinary literacy that reveal how content experts and secondary content teachers read disciplinary texts, make use of comprehension strategies, and subsequently teach those strategies to adolescent readers.

Preliminary findings suggest that experts from math, chemistry, and history read their respective texts quite differently; consequently, both the content area experts and secondary teachers in this study recommend different comprehension strategies for work with adolescents. This study not only has

implications for which comprehension strategies might best fit particular disciplinary reading tasks, but also suggests how students may be best prepared for the reading, writing, and thinking required by advanced disciplinary coursework.

Research Notes:

Purpose of the study: In this seminal article the authors present empirical evidence that scientists, mathematicians and historians think, read and write differently from one another, thus presenting a case for the teaching of discipline-specific literacy in schools.

Type of study: Empirical

Major findings: The study found that discipline experts approach reading and writing tasks in quantifiably different ways, and that discipline teachers found many generic literacy strategies were irrelevant to their discipline teaching.

Recommendations: They recommend that discipline experts are involved in the development of literacy strategies which are better suited to the knowledge constructions of their disciplines.

Reference Type: Journal Article

Record Number: 59

Author: Collin, Ross

Year: 2014

Title: A Bernsteinian Analysis of Content Area Literacy

Journal: Journal of Literacy Research

Volume: 46

Issue: 3

Pages: 306-329

Short Title: A Bernsteinian Analysis of Content Area Literacy

ISSN: 1086-296X

DOI: 10.1177/1086296X14552178

Keywords: literacy strategies

disciplinary literacy

content area literacy

Basil Bernstein

Abstract: This article examines two approaches to teaching content area literacy: a strategies approach focused on general practices of reading and writing, and a disciplinary approach attuned to the particular discourses of particular domains. Basil Bernstein's theory of the pedagogic device is used to critique both approaches' assumptions about content area literacy. Neither approach, it is argued, accounts for the ways content areas bring together discourses from multiple fields. The strategies approach, for instance, does not account for the ways literacies in different content areas are bound up with different discourses. The disciplinary approach, on the other hand, conflates content area discourses with university and professional discourses. At the same time, the disciplinary approach minimises content area discourses' connections to the discourses of domains such as the public sphere and everyday life. At the end of the article, Bernstein's ideas are used to formulate questions content area teachers might consider when teaching different ways of reading, writing, speaking, thinking, and listening.

The Potentials of K-12 Literacy Development in the International Baccalaureate PYP and MYP

Research Notes:

Purpose of study: To provide a critical review of the content area literacy and disciplinary literacy through a Bernsteinian lens

Type of study: Critical review

Major findings: The author uses Bernsteins “pedagogic device” to critique strategies and disciplinary approaches to literacy and finds the two missing some elements. Strategies approaches do not pay due attention to the specialised discourses of the school, whilst the disciplinary approaches are focused exclusively on institutional and professional discourses and do not pay due attention to public discourses.

Recommendations: Consideration of student funds of knowledge and public discourses must find their way into discipline literacy approaches

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Reference Type: Journal Article

Record Number: 39

Author: Carney, Michelle and Indrisano, Roselmina

Year: 2013

Title: Disciplinary literacy and pedagogical content knowledge

Journal: Journal of Education

Volume: 193

Issue: 3

Pages: 39

Short Title: Disciplinary literacy and pedagogical content knowledge

ISSN: 0022-0574

Keywords: Reading teachers

Training

Educational research

Study and teaching

Teachers

Teacher centers

Research

Reading skills

Reading

Pedagogy

Literacy

Knowledge

Abstract: This review is a report of selected literature on theory, research, and practice in disciplinary literacy, primarily reading. To reflect the theme of this issue of the *Journal of Education*, the authors consider the ways this literature can be viewed through the lens of Pedagogical Content Knowledge (PCK) (Shulman, 1986), which includes “subject matter content knowledge, pedagogical content knowledge, and curricular knowledge” (p. 9). Given the need for content area teachers to understand

the complexities of the reading process when designing a curriculum in which reading is fundamental to the learners' acquisition of knowledge, this process is considered to be the "curricular" focus. Although each of these forms of knowledge is the subject of particular sections of the report, we concur with Shulman (1987) in noting that the ultimate task of the teacher is "blending" (p. 8) all the forms of knowledge in the service of effective instruction. This article was written, in particular, for practitioners and teacher educators who have responded to the recent focus on disciplinary literacy. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: To situate the field of disciplinary literacy within Shulman's well-known conceptualisation of teacher knowledge, particularly PCK

Type of study:

Major findings: The authors find that Shulman's description of PCK fits well with the more latterly described field of disciplinary literacy

Recommendations: The article recommends a focus on development of vocabulary, text genres, and metacognition within the disciplines.

Reference Type: Journal Article

Record Number: 2

Author: Fenwick, Lisl

Year: 2010

Title: Initiating and sustaining learning about literacy and language across the curriculum within secondary schools

Journal: Australian Journal of Language and Literacy

Volume: 33

Issue: 3

Pages: 268

Short Title: Initiating and sustaining learning about literacy and language across the curriculum within secondary schools

ISSN: 1038-1562

Keywords: Curricula

High schools

Research

Literacy programs

Language instruction

Research Notes:

Purpose of study: To measure the effects of a professional development program of language and literacy on the teacher knowledge and attitudes, and student attitudes and outcomes

Type of study: Empirical

Major findings: The study found that a program dedicated to developing secondary content teachers' knowledge of how language works in their disciplines had a positive impact on teacher knowledge and student outcomes.

Recommendations: The authors recommend the implementation of whole-school language and literacy development PD programmes for schools and note the importance of principal support as well as the need to ensure that the literacy development occurs within disciplines and for a purpose rather than being an end unto itself.

Reference Type: Journal Article

Record Number: 56

Author: Fang, Zhihui and Schleppegrell, Mary J.

Year: 2010

Title: Disciplinary literacies across content areas: supporting secondary reading through functional language analysis: by making discipline-specific ways of using language explicit, teachers can help adolescents better engage with school knowledge and more effectively develop disciplinary literacies across academic content areas

Journal: Journal of Adolescent & Adult Literacy

Volume: 53

Issue: 7

Pages: 587

ISSN: 1081-3004

DOI: 10.1598/JAAL.53.7.6

Keywords: Language instruction

Education, Secondary

Research

Research Notes:

Purpose of study: The authors present a model for language analysis based on Halliday's Systemic Functional Linguistics to support teachers identify the language demands of their discipline areas.

Type of study: Research into practice

Major findings: The authors describe the process of functional language analysis and then apply it to a secondary science text. They recount the method the teacher used to do the analysis with the students. The authors posit that this close linguistic reading aided the students to understand the both the science and the scientific thinking behind the text.

Recommendations: They recommend language analysis as a means of ensuring all students have equal access to the meanings of texts.

Reference Type: Journal Article

Record Number: 44

Author: Fang, Zhihui

Year: 2014

Title: Preparing Content Area Teachers for Disciplinary Literacy Instruction

Journal: Journal of Adolescent & Adult Literacy

Volume: 57

The Potentials of K-12 Literacy Development in the International Baccalaureate PYP and MYP

Issue: 6

Pages: 444-448

Short Title: Preparing Content Area Teachers for Disciplinary Literacy Instruction

ISSN: 1081-3004

DOI: 10.1002/jaal.269

Keywords: Content literacy

Teacher education, professional development

Graduate education, graduate programs

College/university students

Adolescence

Strategies, methods and materials

Sociolinguistic

Text types, text features

Specific subject areas (math, art, etc.)

Instructional models

Early adolescence

In-service

Preservice

Sociocultural

Instructional strategies, teaching strategies

Abstract: The recent call for secondary reading instruction to move away from a focus on generic literacy strategies to discipline-specific language and literacy practices presents new challenges for secondary teacher preparation. This column identifies some of the roles literacy teacher educators can play in helping address these challenges.

Research Notes:

Purpose of the study: Fang, a prominent proponent of disciplinary literacy approaches, describes considerations and approaches for preparing discipline teachers to teach literacy.

Type of study: Commentary

Major findings: Most teacher preparation programmes do not prepare discipline teachers to teach the literacy of their disciplines. Instead they may be required to complete a generic literacy skills course within a mixed cohort. The author suggests that this is inadequate to give them the knowledge and skills they need for their specific content areas.

Recommendations: The author recommends discipline teachers receive literacy education within their discipline cohorts to ensure that they see the relevance of the learning and are able to concentrate on the literacy and language nuances of their own fields.

Reference Type: Journal Article

Record Number: 65

Author: Fang, Zhihui

Year: 2012

Title: Language correlates of disciplinary literacy

Journal: Topics in Language Disorders

Volume: 32

Issue: 1

Pages: 19 - 34

Short Title: Language correlates of disciplinary literacy

Keywords: Adolescence

disciplinary literacy

functional linguistics

linguistic variation

literacy development

Abstract: Disciplinary literacy is defined here as the ability to engage in social, semiotic, and cognitive practices consistent with those of content experts. Characterising literacy development as a process of braiding three language strands of everyday language, abstract language, and metaphoric language, this article describes the lexical and grammatical patterns typical of disciplinary texts in the subjects of language arts, science, mathematics, and history, showing how language is used in discipline-specific ways to present knowledge, construe value, and create specialised texts. It argues that literacy instruction in academic disciplines should move beyond the time-honoured focus on basic skills (e.g. vocabulary, fluency), general cognitive strategies (e.g. predicting, inferencing), and generic learning strategies (e.g. highlighting, note taking) to embrace an emphasis on discipline-specific practices that promote simultaneous engagement with disciplinary language and disciplinary content.

Research Notes:

Purpose of study: To describe the ways in which language differs across the disciplines

Type of study: Research into practice

Major findings: The article provides a description of the key ways in which language differs across English, history, science and mathematics using examples from secondary texts and explaining the ways the language is different. This knowledge is an expansion of the more generic language skills that the students learn in the primary years.

Recommendations: The author suggests that without attention to the specific ways in which language is used differently across the disciplines students will not develop deep understandings that will allow them to fully participate in the learning of the discipline content.

Reference Type: Journal Article

Record Number: 36

Author: Gillis, Victoria

Year: 2014

Title: Disciplinary Literacy

Journal: Journal of Adolescent & Adult Literacy

Volume: 57

The Potentials of K-12 Literacy Development in the International Baccalaureate PYP and MYP

Issue: 8

Pages: 614-623

Short Title: Disciplinary Literacy

ISSN: 1081-3004

DOI: 10.1002/jaal.301

Keywords: Informational text

Content literacy

Learning strategies

In-service

Graduate education, graduate programs

College/university students

Adolescence

Preservice

Adult

Comprehension

Constructivism

Instructional strategies, teaching strategies

Abstract: This article argues that every teacher is not a teacher of literacy, but instead posits that teachers in content areas must adapt literacy strategies to the content being taught and to the context in which that teaching occurs. Examples of adaptations of a literacy strategy for use in English/language arts, Mathematics, science, and social studies are provided.

Research Notes:

Purpose of study: To provide commentary on the debate between content area literacy and disciplinary literacy approaches

Type of study: Commentary

Major findings: Using her own experiences as a science teacher before eventually becoming a professor in linguistics, the author explains the reluctance of content area teachers to teach literacy. She advocates a content-first approach to literacy – as do disciplinary literacy advocates. She recommends the adaptation of general literacy strategies by content area teachers, rather than the adoption of them, and provides detailed examples of how a general literacy strategy can be adapted for science, history, maths, and English.

Recommendations: The author recommends an end to calls for “all teachers to be literacy teachers” as this is more likely to result in alienation and resentment from content area teachers. She recommends instead that content area teachers be allowed to put their content first and adapt literacy strategies that serve their content needs.

Reference Type: Journal Article

Record Number: 28

Author: Fisher, Douglas and Frey, Nancy

Year: 2014

Title: Understanding and Teaching Complex Texts

Journal: Childhood Education

Volume: 90

Issue: 4

Pages: 306-313

Short Title: Understanding and Teaching Complex Texts

ISSN: 0009-4056

DOI: 10.1080/00094056.2014.937290

Keywords: Education

Learning strategies

Reading

Textbooks

Methods

Analysis

Usage

Teachers

Learning

Kindergarten students

Teaching

Writing

Books

Abstract: Teachers in today's classrooms struggle every day to design instructional interventions that would build students' reading skills and strategies in order to ensure their comprehension of complex texts. Text complexity can be determined in both qualitative and quantitative ways. In this article, the authors describe various innovative professional development efforts and collaborative conversations around the use of qualitative measures for determining text complexity. Such innovative approaches can enhance teachers' ability to plan for their instruction more effectively and take on the roles of decision-maker and collaborator.

Research Notes:

Purpose of study: To explain how to apply close reading strategies to complex texts for younger students

Type of study: Empirical study

Major findings: The article finds that teachers in the early primary years over rely on quantitative measures of text complexity as recommended by publishers and as a consequence do not challenge students with texts of increasing complexity. The study recounts the ways in which groups of teachers worked together to apply more qualitative measures of text complexity to texts for young students.

Recommendations: The authors recommend that young students can be scaffolded into complex texts through teacher supports into close reading of texts

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Reference Type: Journal Article

Record Number: 20

Author: Wray, David and Janan, Dahlia

Year: 2013

Title: Readability revisited? The implications of text complexity

Journal: The Curriculum Journal

Volume: 24

Issue: 4

Pages: 553

Short Title: Readability revisited? The implications of text complexity

ISSN: 0958-5176

Keywords: Teaching methods

Curricula

Learning

Reading

Abstract: The concept of readability has had a variable history, moving from a position where it was considered as a very important topic for those responsible for producing texts and matching those texts to the abilities and needs of learners, to its current declining visibility in the education literature. Some important work has been coming from the USA over the past few years, however, which makes it clear that a closer look at the text dimension of the reader-text interface is somewhat overdue. The issue has been redefined as one of text complexity, and there are some significant implications within it for the teaching and development of reading at all phases of learning. In this paper, we try to review some of these implications and suggest their relevance to the U.K. situation. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: To provide an overview of the manner in which “text complexity” has come in and out of fashion in educational research with particular reference to the U.K.

Type of study: Literature review

Major findings: The authors find that although text complexity or readability attracted significantly less interest from researchers and educators from the 1990s to the early 2000s it has once again been placed on the agenda as education systems in the US, and the U.K., become concerned with the literacy levels of their secondary school graduates.

Recommendations: With the renewed focus on text complexity and secondary literacy high school teachers will need support in understanding how they can best teach these texts

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Reference Type: Journal Article

Record Number: 66

Author: Glaus, Marci

Year: 2014

Title: Text Complexity and Young Adult Literature

Journal: Journal of Adolescent & Adult Literacy

Volume: 57

The Potentials of K-12 Literacy Development in the International Baccalaureate PYP and MYP

Issue: 5

Pages: 407-416

Short Title: Text Complexity and Young Adult Literature

ISSN: 1081-3004

DOI: 10.1002/jaal.255

Keywords: Content literacy

Motivation/engagement

Literature

Adolescence

Text types, text features

Adolescent/young adult literature

Choice, preference

Fiction

Literary theory

Policy

Standards

Literary elements

Abstract: Preparing students for college and careers in the 21st century has shed light on text complexity as an important variable for consideration in English language arts. Authors of The Common Core State Standards (CCSS) define text complexity as broad, highlighting qualitative, rather than quantitative, evaluations of narrative fiction as appropriate for matching readers with texts. The text exemplar list published in the appendices of the CCSS does not include contemporary works of young adult literature. Young adult literature can be used in English language arts classrooms to fulfil the expectations of the CCSS while meeting the appropriate qualitative evaluations of texts students in middle and high school grades are expected to read. This article examines qualitative evaluations of three works of young adult literature that are not only textually complex as defined by authors of the CCSS, but appropriate and engaging for adolescent identity and development.

Research Notes:

Purpose of the study: To introduce young adult literature as examples of complex texts to challenge students at high school

Type of study: Theory into practice

Major findings: The author applies text complexity measures to three popular young adult novels to illustrate how they meet the curricular standards of the CCSS whilst also appealing to students.

Recommendations: The author suggests that the recommended texts provided by the CCSS are not always appealing or even read by students and recommends teachers consider a range of more contemporary young adult literature.

Reference Type: Journal Article

Record Number: 26

Author: Hiebert, Elfrieda H.

Year: 2010

Title: Beyond Single Readability Measures: Using Multiple Sources of Information in Establishing Text Complexity

Journal: The Journal of Education

Volume: 191

Issue: 2

Pages: 33-42

Short Title: Beyond Single Readability Measures: Using Multiple Sources of Information in Establishing Text Complexity

ISSN: 0022-0574

Keywords: Students, Educational evaluation, Education policy

Abstract: A focus of the Common Core State Standards/English Language Arts (CCSS/ELA) is that students become increasingly more capable with complex text over their school careers. This focus has redirected attention to the measurement of text complexity. While suggesting multiple criteria for this task, the CCSS/ELA offers a single measure of text complexity – Lexiles. Additional quantitative data are available – including the two components of a Lexile rating – that can provide more comprehensive views of text complexity. The two "intra-lexile" measures and two others (referential cohesion and an index of words in a text that are predicted to be "hard") are applied to sets of exemplars for grade bands 2–3 and 4–5 within the CCSS/ELA. These analyses suggest that conclusions about text complexity vary considerably when multiple quantitative measures, rather than a single, omnibus index, are used [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: To provide a critique of a range of quantative measures of text complexity

Type of study: Analysis

Major findings: The most popular quantitative measure of text complexity is the Lexile scale. This measure of semantic and syntactic complexity is compared to a range of other available scales. The authors find the each scale provides a different measure.

Recommendations: The authors recommend the use of multiple measures of text complexity as one measure cannot reliably describe text complexity.

Reference Type: Journal Article

Record Number: 27

Author: Hiebert, Elfrieda H.

Year: 2011

Title: The Common Core's Staircase of Text Complexity: Getting the Size of the First Step Right

Journal: Reading Today

Volume: 29

Issue: 3

Pages: 26

Short Title: The Common Core's Staircase of Text Complexity: Getting the Size of the First Step Right

ISSN: 2160-8083

Keywords: Achievement tests

Reading programs

Books

Kindergarten

Abstract: [...] what is the evidence that raising levels of text complexity, especially for primary-level texts, fosters the goal of college and career readiness? Before we increase the levels of text complexity in primary-level reading programs, we need to examine why it is that so many exiting third graders are not reading proficiently at current complexity levels – levels that are linked to future school success. [...] we do that, the pursuit of "harder, faster, earlier" will do little to support the many students who depend on schools to become literate at the levels required for the digital age.

Research Notes:

Purpose of study: To critique the introduction of increased text complexity in primary school for the Common Core State Standards (CCSS)

Type of study: Commentary

Major findings: The CCSS have increased text complexity for Grade 3 students by a full year, however currently two-thirds of students in Grade 3 in the U.S. fail to meet current standards. The author considers the implications then of increasing text complexity for these students.

Recommendation: The author recommends an investigation into why students currently are not meeting standards before further increasing standards.

Reference Type: Journal Article

Record Number: 23

Author: Gamson, David A., Lu, Xiaofei and Eckert, Sarah Anne

Year: 2013

Title: Challenging the Research Base of the Common Core State Standards: A Historical Reanalysis of Text Complexity

Journal: Educational Researcher

Volume: 42

Issue: 7

Pages: 381-391

Short Title: Challenging the Research Base of the Common Core State Standards: A Historical Reanalysis of Text Complexity

ISSN: 0013-189X

Keywords: educational reform

history

reading

curriculum

textbooks

English language

Linguistics

Historical analysis

Abstract: The widely adopted Common Core State Standards (CCSS) call for raising the level of text complexity in textbooks and reading materials used by students across all grade levels in the U. S.; the authors of the English Language Arts component of the CCSS build their case for higher complexity in part upon a research base they say shows a steady decline in the difficulty of student reading textbooks over the past half-century. In this interdisciplinary study, we offer our own independent analysis of third- and sixth-grade reading textbooks used throughout the past century. Our data set consists of books from 117 textbook series issued by 30 publishers between 1905 and 2004, resulting in a linguistic corpus of roughly 10 million words. Contrary to previous reports, we find that text complexity has either risen or stabilised over the past half-century; these findings have significant implications for the justification of the CCSS as well as for our understanding of a "decline" within American schooling more generally. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of the study: To critique the research base of the CCSS's premise of declining text complexity

Type of study: Empirical

Major findings: The authors conduct a review of textbooks used in U.S. schools over the past 100 years to debunk the assertion in the rationale of the CCSS that text complexity has reduced. Their findings apply to primary school texts, not secondary school texts.

Recommendations: The authors recommend that, rather than relying on increased text complexity to increase learning outcomes, the focus should be on improvement in instructional practices.

Reference Type: Journal Article

Record Number: 86

Author: Schleppegrell, Mary J. and O'Hallaron, Catherine L.

Year: 2011

Title: Teaching Academic Language in L2 Secondary Settings

Journal: Annual Review of Applied Linguistics

Volume: 31

Pages: 3-18

Short Title: Teaching Academic Language in L2 Secondary Settings

ISSN: 0267-1905

DOI: 10.1017/S0267190511000067

Keywords: Foreign language instruction

Linguistics

Foreign language learning

Abstract: Research on instruction in academic language in second language (L2) secondary settings is currently emerging as a focus in applied linguistics. Academic language refers to the disciplinary registers that students encounter in the secondary years, and using academic language calls for advanced proficiency in complex language across subject areas, posing challenges for teacher preparation. In this article we summarise recommendations from syntheses of research on adolescent L2 learners and then present reports of recent studies that describe instructional approaches that illuminate the recommended practices in contexts where students who speak languages other than English are learning school subjects in English. Three key instructional dimensions are highlighted:

that teachers need knowledge about how language works in their subject areas, that academic language development calls for careful planning across a unit of instruction, and that students need support for engagement in classroom activities that promote the simultaneous learning of language and content. To prepare teachers for this work, secondary teacher education needs to incorporate a focus on language-content relationships in each disciplinary area. More research is needed to better understand and support academic language development, and we call for collaboration and dialogue between educational researchers and applied linguists concerned with these issues. [PUBLICATION ABSTRACT]

Research Notes:

Purpose of study: To synthesis recommendations from the literature on best practice for teaching academic language additional language learners in secondary schools

Type of study: Literature and empirical study review

Major findings: The article provides a thorough account of research studies describing effective pedagogical interventions for additional language learners and academic literacies. They conclude content teachers need more knowledge about how language works in their disciplines, how to plan for language development across the school years and specific strategies for teaching language day to day.

Recommendations: The authors recommend that applied linguists and educational researchers and practitioners work more closely together to meet these teacher knowledge needs.

Reference Type: Journal Article

Record Number: 109

Author: Wiliam, Dylan

Year: 2011

Title: What is assessment for learning?

Journal: Studies in Educational Evaluation

Volume: 37

Issue: 1

Pages: 3-14

Date: 3//

Short Title: What is assessment for learning?

ISSN: 0191-491X

DOI: http://dx.doi.org/10.1016/j.stueduc.2011.03.001

Keywords: Formative assessment

Assessment for learning

Feedback

Abstract: The idea that assessment is intrinsic to effective instruction is traced from early experiments in the individualisation of learning through the work of Benjamin Bloom to reviews of the impact of feedback on learners in classrooms. While many of these reviews detailed the adverse impact of assessment on learning, they also indicated that under certain conditions assessment had considerable potential to enhance learning. It is shown that understanding the impact that assessment has on learning requires a broader focus than the feedback intervention itself, particularly the learner's responses to the feedback, and the learning milieu in which the feedback operates. Different

definitions of the terms “formative assessment” and “assessment for learning” are discussed, and subsumed within a broad definition that focuses on the extent to which instructional decisions are supported by evidence. The paper concludes by exploring some of the consequences of this definition for classroom practice.

Research Notes:

Purpose of study: In this article Wiliam presents an account of the development of the term “assessment for learning”, placing it in the larger debate about summative vs formative assessments.

Type of study: Theoretical

Major findings: Wiliam applies theoretical definitions of assessment for learning to several real-life teaching scenarios and concludes there are substantial, but unexplored, connections between instructional design, feedback, and student learning.

Recommendations: The author concludes that there is promising evidence of improved student outcomes through the considered use of assessment for learning.

Reference Type: Journal Article

Record Number: 89

Author: Hutchinson, Carolyn and Young, Myra

Year: 2011

Title: Assessment for learning in the accountability era: Empirical evidence from Scotland

Journal: Studies in Educational Evaluation

Volume: 37

Issue: 1

Pages: 62-70

Short Title: Assessment for learning in the accountability era: Empirical evidence from Scotland

ISSN: 0191-491X

DOI: 10.1016/j.stueduc.2011.03.007

Keywords: Scotland

Self-evaluation

Assessment policy

Educational evaluation

Professional learning

Assessment for Learning

National monitoring

Intelligent accountability

Research Notes:

Purpose of study: The authors provide a commentary on the both the assessment and evaluation frameworks in place in Scotland – and reconcile them with an increased focus on external accountability

Type of study: Empirical

Major findings: The authors find that it is possible to find alignment between the potentially conflicting interests of teacher-based formative assessments and externally mandated summative assessments. They describe the ways this has been achieved in the Scottish context. The article contains many useful artefacts for other systems considering ways in which they can work with external assessment regimes whilst maintaining the integrity of teacher-based formative assessments.

Recommendation: The authors recommend the key to successful integration of assessment purposes is teacher professional development to develop teachers with adequate skills in assessment.

Reference Type: Journal Article

Record Number: 93

Author: Hipkins, Rosemary

Year: 2012

Title: Assessment of naturally occurring evidence of literacy

Journal: Assessment Matters

Volume: 4

Pages: 95-109

Short Title: Assessment of naturally occurring evidence of literacy

ISSN: 1176-7839

Keywords: Evaluation

Literacy

Professional education

Methods

Educational evaluation

Standards

New Zealand

Abstract: Recent changes to New Zealand's senior secondary school qualifications include the introduction of standards that allow students to demonstrate evidence of competency in literacy and numeracy via "naturally occurring evidence". Such evidence can potentially be drawn from routine learning activities in a wide range of subject areas. However, teachers of other subjects may not have the literacy or numeracy expertise to identify and leverage relevant opportunities, or to accurately judge the quality of evidence generated so that judgements against the standard are made reliably. This paper documents a system of distributed professional learning, decision-making and record keeping that one secondary school has evolved to address these challenges.

Research Notes:

Type of study: Empirical

Purpose of study: To describe one school's implementation of authentic assessment using naturally occurring evidence of literacy competencies

Major findings: The author finds that the use of naturally occurring evidence of literacy competencies is effective, and has the potential to improve both teaching and learning. She describes in useful detail the systems the school put in place to employ this assessment for learning across the disciplines in a secondary school setting.

Recommendations: The author's recommendation is for further teacher development work to allow non-literacy teachers to better identify and assess literacy as it occurs in their subject areas.

Reference Type: Journal Article

Record Number: 90

Author: Edwards, Patricia A., Turner, Jennifer D., and Mokhtari, Kouider

Year: 2008

Title: Balancing the Assessment of Learning and for Learning in Support of Student Literacy Achievement

Journal: The Reading Teacher

Volume: 61

Issue: 8

Pages: 682

Short Title: Balancing the Assessment of Learning and for Learning in Support of Student Literacy Achievement

ISSN: 0034-0561

Keywords: Teachers

Learning

Schools

Students

Literacy

Abstract: Most teachers are well aware that scores on high-stakes tests provide a limited view of students' reading and writing skills and offer insufficient information that can be used in making day-to-day instructional and curricular decisions (Klingner, 2002; Serafini, 2000/2001).

Research Notes:

Type of study: Theoretical

Purpose of study: To provide principles for understanding the ways in which assessment for learning can coexist with increasing pressure to focus on external assessment of learning processed

Major findings: Whilst acknowledging the tensions, the authors find it possible to reconcile the 'assessment for learning' and 'assessment of learning' and provide principles to guide a school's approach to assessment.

Recommendations: Use a breadth of assessment forms, involve parents, involve students, and develop collaborative processes across the school. The need to develop skills in assessment in both teachers and administrators is emphasised.

Reference Type: Journal Article

Record Number: 97

Author: White, Peter R. R., Mammone, Giuseppe and Caldwell, David

Year: 2015

Title: Linguistically based inequality, multilingual education and a genre-based literacy development pedagogy: insights from the Australian experience

Journal: Language and Education

Pages: 1-16

Short Title: Linguistically based inequality, multilingual education and a genre-based literacy development pedagogy: insights from the Australian experience

ISSN: 0950-0782

DOI: 10.1080/09500782.2014.994527

Abstract: This chapter addresses the issue of pedagogy and bilingual/multilingual education: how best to match teaching-and-learning approaches to the literacy development needs of students in multilingual educational settings. More specifically, it makes the case for what is known as the "Sydney school" genre-based literacy development approach. It argues that, in providing explicit knowledge about the social functions, structures and stylistic properties of the modes of communication associated with academic success and social mobility, it has the potential to address the linguistically based social and economic inequality often experienced by students whose home language is other than the politically dominant, "majority" language of the school. A brief account is provided of this "genre-based" approach, followed by an account of its implementation in South Australia over the last decade or so in schools with large numbers of students who speak at home a language other than Australia's majority language, English. Finally, outcomes for students involved in such genre-based literacy development are explored, with findings of a study reported which point to these students making significant advances in their literacy development. This study is of potential interest to educators, illustrating the long-term gains that genre-based pedagogies can afford socio-economically and linguistically disadvantaged learners.

Research Notes:

Type of study: Empirical

Purpose of study: To report on the results of genre-based pedagogical instructions in South Australian high schools and discuss their relevance to multilingual approaches to teaching

Findings: The study conducted by the authors compared the national testing results of high schools in a low-SES region of the city of Adelaide. Some of the schools had participated in a whole-school genre-based approach to teaching how English works in the production of literacy genres. The results indicated that the participating schools far outperformed other schools in the region, but also outperformed the mean score for the state and the country.

Recommendations: The authors recommend that the explicit language-focused nature of genre pedagogies make them ideal for use in multilingual educational settings.

URL: http://dx.doi.org/10.1080/09500782.2014.994527

Access Date: 2015/01/15

Reference Type: Journal Article

Record Number: 11

Author: Pérez-Cañado, María

Year: 2012

Title: CLIL research in Europe: past, present, and future

Journal: International Journal of Bilingual Education and Bilingualism

Volume: 15

The Potentials of K-12 Literacy Development in the International Baccalaureate PYP and MYP

Issue: 3

Pages: 315-27

Short Title: CLIL research in Europe: past, present, and future

ISSN: 1367-0050

DOI: 10.1080/13670050.2011.630064

Keywords: content and language integrated learning

Europe

quantitative

research

qualitative

Abstract: This article provides a comprehensive, updated, and critical approximation to the sizeable literature which has been produced on the increasingly acknowledged European approach to bilingual education: Content and Language Integrated Learning (CLIL). It begins by tracing the origins of CLIL, framing it against the backdrop of its predecessors: North American immersion and bilingual education programs, and European international schools. It then provides a synthesis of the research which has been conducted on our continent into the effects of CLIL programs. It transpires from this review that, while at first blush it might seem that outcome-oriented investigations into CLIL effects abound throughout our continent, there is still a well-documented paucity of research in this area. The article concludes by identifying future research agendas to continue mapping the CLIL terrain. The ultimate aim of this three-pronged examination of the past, present, and future of CLIL is to depart from the lessons learned from recent research and to signpost ways forward in order to guarantee a success-prone implementation of this timely solution to European plurilingual education.

Research Notes:

Type of Study: Literature review

Purpose of Study: To provide a comprehensive account of the development and definition of CLIL, with particular reference to Europe

Major findings: This is a very comprehensive account not only of the origins of CLIL and its founding rationale but also of the various ways CLIL has been interpreted in different European countries, including accounts of research findings into their effectiveness or otherwise. These accounts provide a description of both the variability of CLIL approaches but also their potentials.

Recommendations: Although numerous accounts have now been collected of the ways in which CLIL has worked in specific contexts, the author recommends larger scale and more systematic evaluations in order to understand what makes CLIL successful in some contexts, and what contributes to its less effective results in other contexts.

Reference Type: Journal Article

Record Number: 119

Author: Cope, Bill and Kalantzis, Mary

Year: 2009

Title: 'Multiliteracies': New literacies, new learning

Journal: Pedagogies: An international journal

Volume: 4

The Potentials of K-12 Literacy Development in the International Baccalaureate PYP and MYP

Issue: 3

Pages: 164 - 195

Short Title: 'Multiliteracies': New literacies, new learning

Abstract: This paper examines the changing landscape of literacy teaching and learning, revisiting the case for a “pedagogy of multiliteracies” first put by the New London Group in 1996. It describes the dramatically changing social and technological contexts of communication and learning, develops a language with which to talk about representation and communication in educational contexts, and addresses the question of what constitutes appropriate literacy pedagogy for our times.

Research Notes:

Type of study: Theoretical

Purpose of study: To revisit the multiliteracies framework 12 years on from its original publication

Findings: The paper provides a comprehensive account of the what, why, and how of multiliteracies – both its original description and its evolved condition. As such it makes a very useful reference paper.

Recommendations: The paper finds that the why of multiliteracies remains relevant, in fact even more relevant as technological advances change the ways in which we communicate with each other. The how of multiliteracies has become more refined as educators around the world have implemented the pedagogy.

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