LEARNING ASSESSMENT

A REPORT ON TEACHING ASSESSMENT IN INITIAL TEACHER EDUCATION IN NSW

NSW GOVERNMENT

QUALITY TEACHING COUNCIL
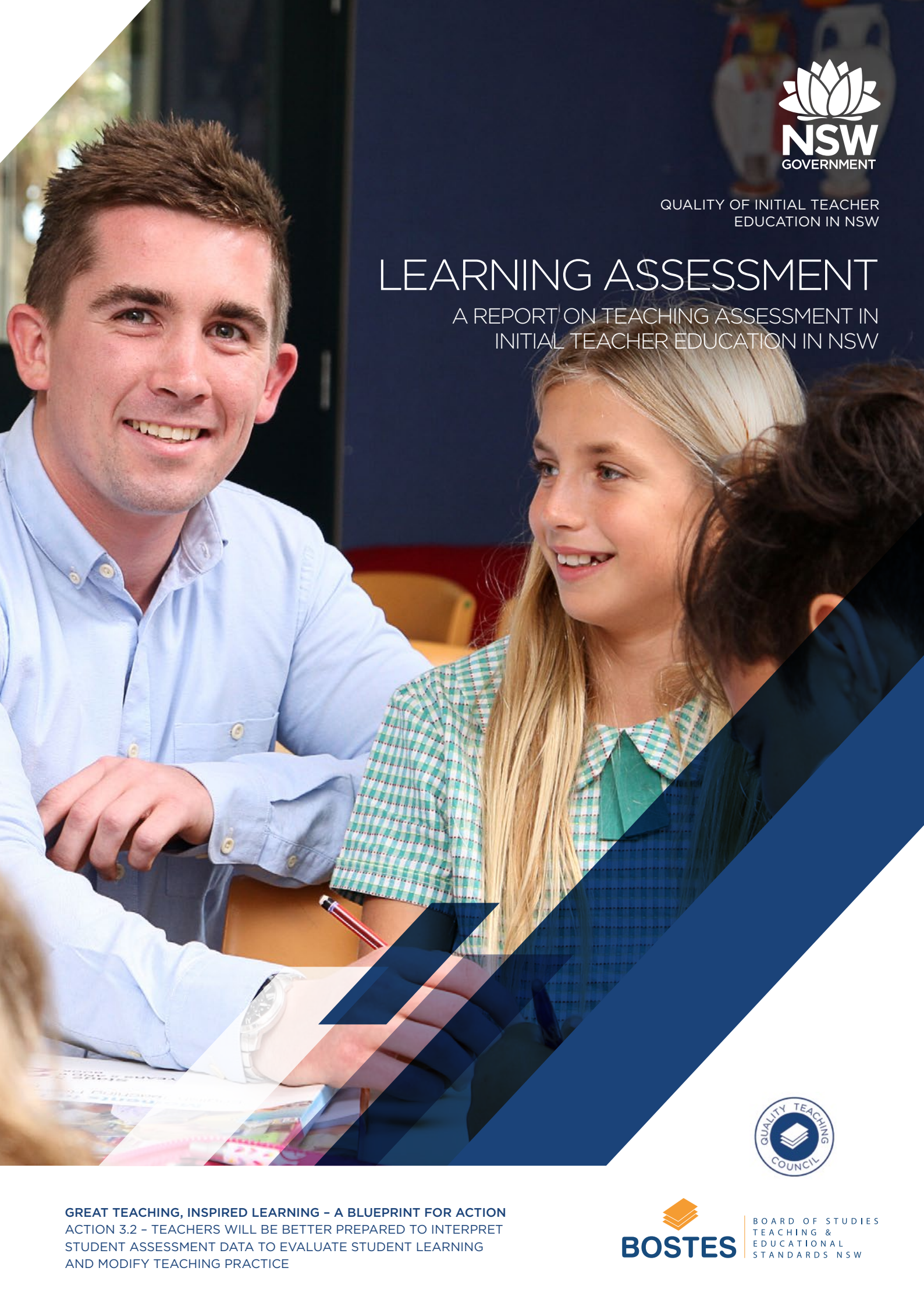
GREAT TEACHING, INSPIRED LEARNING – A BLUEPRINT FOR ACTION
ACTION 3.2 – TEACHERS WILL BE BETTER PREPARED TO INTERPRET
STUDENT ASSESSMENT DATA TO EVALUATE STUDENT LEARNING
AND MODIFY TEACHING PRACTICE

BOSTES
BOARD OF STUDIES
TEACHING &
EDUCATIONAL
STANDARDS NSW

CONTENTS

PREFACE

This report sets out to identify current practice in the teaching of assessing student achievement delivered by initial teacher education programs in NSW. It outlines the general knowledge, skills and understanding foundational for well-prepared beginning teachers in the area of assessing student learning in both primary and secondary school settings.

The report does not attempt to address particular assessment strategies associated with specific teaching disciplines or specialised studies.

The report acknowledges that learning to become a teacher is a complex process with interactions between personal experience, learning from initial teacher education programs, and practical and professional experience. In this regard the report recognises the critical importance of the community of practice that teachers in training enter into during professional experience and in their initial years of teaching.

Ideally, professional experience placements present the opportunity for observing best practice attuned to and supportive of the needs of teachers in training. Reforms to professional experience partnerships aimed at improving the practicum experience introduced by the NSW Government's *Great Teaching, Inspired Learning – A Blueprint for Action*[1] (GTIL) will commence from 2016 and as such their influence is beyond the scope of this report.

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1   Department of Education and Communities NSW, 2013, *Great Teaching, Inspired Learning*, NSW Government.

INTRODUCTION

The purpose of this report

Assessment is essential for learning and is a key professional skill for classroom practice. Good assessment fosters motivation and engagement in students. It provides insight that enables teachers to adjust practice, to personalise learning and to maximise learning outcomes and achievement for all students.

Graduate teachers who are classroom-ready will have an understanding of their subject(s), curriculum content and teaching strategies. They will be able to design programs and lessons that meet the requirements of curriculum, assessment and reporting. They will demonstrate the capacity to interpret student assessment data to evaluate student learning and modify teaching practice. They will also know how to select and apply timely and appropriate types of feedback to improve students' learning.

As they progress in their careers they will gain knowledge and understanding of the broader uses and purposes of assessment data and how these uses and purposes can impact on policy and practice in education.

The actions from the *Great Teaching, Inspired Learning* (GTIL) reforms accepted for implementation by the NSW Government includes better preparing teachers to interpret student assessment data.[2]

GTIL action 3.2 requires that:

Teachers will be better prepared to interpret student assessment data to evaluate student learning and modify teaching practice.

BOSTES will lead a project to ensure teacher education courses address the analysis and use of student assessment data to inform classroom practice in both primary and secondary programs.[3] The project will elaborate the key elements of content and identify a range of proven strategies for meeting Graduate Teacher Standards 2.3.1 and 5.4.1 that can be shared and used by ITE providers.

This report outlines foundation content and supporting resources to enable providers to identify potential gaps and build on content in current programs.

Rationale

The Board of Studies, Teaching and Educational Standards (BOSTES) is responsible for implementing GTIL reforms associated with initial teacher education.

The Australian Professional Standards for Teachers (APST) define the work of teachers and make explicit the elements of high-quality, effective teaching that will improve educational outcomes

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2   Department of Education and Communities NSW, 2013, *Great Teaching, Inspired Learning*, NSW Government.
3   Ibid, p. 9.

for students.[4] The APST define the knowledge, skills and attributes expected of teachers within the three domains of teaching across four career stages, beginning with graduate teachers. The standards that describe what graduate teachers should know and be able to do are the Graduate Teacher Standards (GTS).

GTIL Action 3.2 is a commitment to ensure that initial teacher education programs prepare graduates to collect and interpret student assessment data and use it to evaluate student learning and modify teaching practice. This paper identifies key elements of content, and provides exemplars of effective practice to help prepare ITE students to meet GTS 2.3.1 and 5.4.1:

▶ use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans

▶ demonstrate the capacity to interpret student assessment data to evaluate student learning.[5]

ITE programs undergo a rigorous evaluation and assessment process in order to be accredited by the NSW Minister for Education. Accreditation recognises that the program provides graduates with the skills and knowledge required for entry into the teaching profession. In NSW, BOSTES assesses ITE programs against the National Program Standards which are set out in the *Accreditation of Initial Teacher Education Programs in Australia: Standards and Procedures*. This assessment requires that ITE providers demonstrate that their graduates will meet all of the GTS.

Currently in NSW, there are 118 ITE programs from 17 institutions accredited by BOSTES. These programs include 30 undergraduate and 14 postgraduate qualifications in primary education and 58 undergraduate and 16 postgraduate qualifications in secondary or K–12 education.

The first part of this report provides an overview of the evidence submitted by ITE providers to demonstrate how programs address the GTS on assessment for program accreditation purposes. ITE providers submit documentation to provide evidence of how their graduates will meet each of the 46 GTS every five years for continuing program accreditation. To provide some background to this report BOSTES officers have reviewed the descriptions of where each ITE provider covers GTS 2.3.1 and 5.4.1 within their program(s). The information below is an analysis of those statements which give an insight into the way assessment is covered within ITE in NSW. The evidence submitted by ITE providers is not designed to identify every instance where a topic is covered within the program, but to advise an assessment panel of some clear and explicit evidence of where an ITE student will be taught and assessed on that topic. Consequently, the information below is not an exhaustive analysis of how the development, analysis and use of assessment data is covered within ITE programs. The purpose of this background information is rather to provide a summary of what providers determine to be significant evidence of where in their programs they address assessment.

The second part of the report sets out the key priorities and foundation content that should ensure beginning teachers are well prepared for their role in delivering quality classroom assessment. The

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4   BOSTES, 2011, Australian Professional Standards for Teachers, AITSL.
5   BOSTES, 2011, *Australian Professional Standards for Teachers*, AITSL, Graduate Standards 2.3.1 and 5.4.1.

report concentrates on BOSTES assessment guidelines, practices and key elements, as these specify the assessment expectations that the majority of teacher education graduates in NSW are required to implement.

Context for the report

The context for the report is the NSW curriculum, noting that although not all teacher education graduates will teach in NSW, clarity of purpose and informed practice are universally applicable. Elaborations are based on BOSTES advice and good practice as evidenced in well-regarded research and the work of recognised practitioners.

Depending on the courses studied, ITE students may experience different orientations and emphases during their learning in assessment. This report has concentrated on identifying threshold outcomes for beginning teachers, irrespective of whether they are training to be primary or secondary teachers, which will provide a good foundation for their initial classroom practice and further professional growth.

The definition of data in this report emphasises information of the qualitative kind rather than statistical interpretation. Data on student achievement exists in a complex framework of information, including behavioural information that is collected, analysed and interpreted, along with achievement data to help inform the next steps in learning.

The methodology for the report has included the identification of foundation outcomes and content in the context of the requirements of the NSW curriculum and practices in schools. Observations in recent reports that focused on assessment have been used to point to potential areas for improvement.

The evidence submitted by ITE providers should be able to demonstrate for program accreditation purposes how their programs align with these outcomes in addressing the Graduate Teacher Standards in assessment.

PART 1: ASSESSMENT THEORY AND PRACTICE IN ITE PROGRAMS

Overview

In NSW curriculum documentation, assessment is defined as the collection and evaluation of evidence of students' learning.[6] The key purpose of assessment is to gather valid and useful information about student learning in order to monitor student achievement in relation to outcomes, guide future teaching and learning opportunities and to provide ongoing feedback to students to improve learning. Good assessment fosters motivation and engagement in students and encourages deeper understanding.

NSW curriculum support materials promote an integrated approach to teaching, learning and assessment. Assessment *for* learning, assessment *as* learning and assessment *of* learning are approaches that can be used individually or together, formally or informally, to collect evidence of and improve student learning.

There is no doubt that assessment is integral to learning, has multiple purposes and forms, and is a key professional skill for teaching practice. Expertise in diagnosis, interventions and evaluation is required of teachers in order to maximise student learning.[7] Assessment practice has been a focus for professional learning in NSW schools in recent decades.[8] This demand is reflected in the number of Quality Teaching Council (QTC) endorsed professional development providers who offer courses that address standards relating to assessment practice.

Evidence submitted by ITE providers shows that approaches to teaching assessment theory and practice are consistent across primary and secondary ITE programs in both the undergraduate and postgraduate programs. In the majority of programs evidence is provided showing that instruction on assessment practice is included in curriculum content units and pre-service teachers are expected to apply this practice on professional experience placements. Additional content on assessment practice is provided in some programs through a dedicated unit on assessment (more common in secondary programs), some providers indicate that they include instruction on assessment within education theory and pedagogy units, others in educational psychology units (mainly in undergraduate programs) and some in units that deal with language, literacy and numeracy skills (more common in postgraduate programs).

While all programs include a dedicated special education unit only some of these are offered as evidence of where in the program strategies to evaluate learning and adjust assessment practice for diverse learners are covered.

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6   BOSTES, Principles of Effective Assessment, Support Materials, 2015, accessed on 1/09/2015 http://syllabus.bos.nsw.edu.au/support-materials/principles-of-effective-assessment/
7   Hattie, J (2015) What Works Best in Education: The Politics of Collaborative Expertise, London: Pearson.
8   Centre for Education Statistics and Evaluation (2015), *Re-assessing Assessment* Sydney: NSW, Department of Education.

Curriculum specialisation units and professional experience placements

The majority of ITE programs provide evidence of addressing the development, analysis and use of student assessment data to inform teaching practice within curriculum specialisation units and on professional experience placements. Programs that demonstrate strength in this area describe how professional experience placements allow pre-service teachers to apply their emerging theoretical knowledge of curriculum content and pedagogy in the classroom, and reflect on their own teaching practice. Providers commonly cite the curriculum specialisation units as a foundation of knowledge on which the professional experience placement builds. Programs that emphasise curriculum units and the professional placement as evidence that their graduates meet the assessment components of the GTS place most weight on the professional experience placements.

Where ITE providers indicate that pre-service teachers demonstrate evidence of learning outcomes related to assessing students on the professional experience placement, this often occurs through projects which include reflective reports of their experience, developing lesson plans, collecting evidence of student learning, analysing assessment data and making appropriate adjustments to teaching practice. Learning outcomes for professional placement units require pre-service teachers to demonstrate knowledge of good assessment practice in the classroom.

ITE providers also provide evidence of assessment and reporting strategies in the curriculum specialisation units across the majority of programs. It is acknowledged that best practice in assessment necessarily varies across disciplines and consequently, curriculum specialisation units develop graduates' discipline-specific understandings of assessment and skills in the design and delivery of rich, effective assessment tasks that are appropriate and relevant to particular secondary subject areas and primary learning areas. Professional placements provide the opportunity for pre-service teachers to see how lesson plans translate into classroom practice and to collect authentic evidence of school student learning. Some providers refer to assessment tasks that require pre-service teachers to use student work samples collected during their professional experience placement. In these tasks, pre-service teachers use sets of student work to demonstrate how they would moderate and apply consistent judgements and use assessment data to make adjustments for learning.

Developing a lesson plan typically forms part of the assessment in either the professional placement or curriculum specialisation units. These assessments require students to demonstrate the use of appropriate assessment strategies and tasks, model various approaches to feedback and reporting, and describe how adjustments can be made to cater for a range of students. The development of lesson plans differs between primary and secondary programs. The integrated approach to curriculum in Kindergarten to Year 6, primary programs requires that pre-service teachers learn to develop integrated units of work and design appropriate assessment strategies that show knowledge from a range of disciplines. Across primary programs, there is also more evidence of a focus on linking assessment to learning outcomes.

Theory and practice of assessment

In addition to the professional placement and curriculum specialisation units, many providers offer either a unit explicitly on the theory and practice of assessment and evaluation in a primary or secondary educational context, or can demonstrate comprehensive coverage of these skills in education theory or general pedagogy units. While these units are often included in all program types, they are most commonly offered in postgraduate secondary programs. Content on assessment and evaluation in general pedagogy units is often in addition to the coverage in curriculum specialisation units or on professional experience placements.

Explicit units dedicated to assessment typically describe the importance and purpose of assessment for and of learning, and often introduce comparative and standards-based assessment. Most of these units also cover data analysis and interpretation, using data to evaluate learning and modify teaching practice, assessment moderation and making consistent judgments and developing effective strategies for feedback and reporting.

Explicit mention of the interpretation, analysis and use of NAPLAN data is limited in the evidence provided. Reference to PISA, TIMMS and other significant international data sets is more limited still.

The development of language, literacy and numeracy assessment strategies in a secondary context are expressly referenced by a small number of secondary qualifications. Assessment strategies and practices that specifically address literacy and numeracy learning have greater presence in primary programs.

Inclusive education assessment practice and using assessment data to make adjustments for students with different learning needs is evidenced in less than half of all postgraduate secondary programs. Most programs refer to using a range of assessment data to adjust teaching practice but very few refer explicitly to diverse learners in the evidence they provide for GTS 2.3.1 and 5.4.1.

Educational psychology

Units on educational psychology feature more prominently in undergraduate programs. These units are designed to provide an introduction to different approaches to learning, the theory and practice of assessment and evaluation, and the impact of assessment on learning and motivation.

A number of accredited ITE programs demonstrate strength in providing graduates with a good foundation in evaluating student learning, providing effective feedback and adjusting teaching practice based on data from various types of assessment *for* and assessment *of* learning. Providers that do this most effectively use a composite of all strategies identified above to demonstrate how pre-service teachers' knowledge of education theory, pedagogy, practice and curriculum content prepare them to enter the teaching profession.

PART 2: KEY PRIORITIES AND FOUNDATIONAL CONTENT

Overview

It is important to acknowledge the work recorded in Part 1 of this report that is being done by providers to ensure that beginning teachers have a grounding in the place and importance of assessment in teaching and learning. However, some recent reports have signalled areas for consideration and improvement. Three reports published since the release of GTIL provide some directions for considering where areas of current strengths and weaknesses or gaps in the assessment content in current initial teacher education programs may lie.

In the Grattan Institute's 2015 report *Targeted Teaching: how better use of data can improve student learning,* the authors conclude that 'Unfortunately, many teachers in Australia struggle to accurately interpret curriculum standards and use them to evaluate their students' learning.'[9] They note that the Teacher Education Ministerial Advisory Group (TEMAG) found that '… initial teacher education providers are generally not providing graduates with the ability to use assessment data to improve teaching and target instruction. In our three case studies, most beginning teachers we spoke to felt their initial training fell a long way short in this regard.'[10]

These views echo a 2011 OECD evaluation of assessment practices in Australia, which found that many new teachers needed 'considerable support' to analyse and interpret student assessment data and use it to adjust their teaching practice.[11]

'New teachers tend to lack the practical understanding and experience needed to conduct assessment effectively. They need substantial additional support, including both training and time, to meet national requirements for assessing their students against standards. They are also underprepared for interpreting assessment data and adapting their teaching in response to it – skills that are vital both to measuring progress and helping students to succeed.'[12]

These recent reports echo anecdotal comments made by a small number practitioners consulted in putting together this report. Some senior school executives with a background in classroom assessment and wider testing programs were asked to consider what they thought were the necessary knowledge, skills, understanding and attitudes that a beginning teacher required in the area of assessment. Their responses consistently identified the elements of good assessment practice in various contexts and basic data literacy as the key requirements. They believed that beginning teachers should also be given opportunities to develop informed and balanced attitudes and beliefs about assessment in all its forms.

This part of the report focuses on identifying and elaborating on what teachers who graduate from initial teacher education courses should know, understand, and be able to do in the assessment of student learning and its application in the various contexts of learning.

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9   Goss, P, Hunter, J, Romanes, D, Parsonage, H, 2015, *Targeted teaching: how better use of data can improve student learning,* Grattan Institute, p. 12.
10 Ibid p. 15.
11 Santiago, P., Donadlson, G., Herman, J., Shewbridge, C., 2011, *OECD Reviews of Evaluation and Assessment in Education: Australia,* OECD, p. 63.
12 Goss, P, Hunter, J, Romanes, D, Parsonage, H, 2015, *Targeted teaching: how better use of data can improve student learning,* Grattan Institute.

It describes the framework that underpins the mandatory NSW curriculum and the core knowledge, skills, understanding required to deliver the curriculum, and the core professional competency in assessment as a basis for good practice and as a foundation for further professional growth and development aligned to teaching standards.

The contents of the next part of this report recognise three significant changes that have impacted on classroom assessment.

Between the last part of the twentieth century and the present there has been compelling and convergent evidence beginning with the seminal work of Paul Black and Dylan Wiliam in *Inside the Black Box* that assessment, particularly when used formatively, is a powerful tool in improving student learning.[13] The capacity to design assessments capable of yielding appropriate information and then using the analysis of student responses to adjust teaching strategies is arguably the most important set of skills for beginning teachers.

At the same time there has been an increase and divergence in the purposes and uses for assessment information. International comparative benchmarking has emerged with programs like PISA, TIMMS, PIRLS, while national testing programs such as NAPLAN have become significant markers on the education landscape.

These programs bring increased public commentary and accountability, meaning teachers are more likely to need the knowledge, skills and understanding that will enable them to be critical users of broader data. Today's teachers need to be able to interpret data for use in their teaching and learning strategies and be able to engage in dialogue with parents about the meaning of individual student results. This knowledge and confidence comes with experience. Beginning teachers need, at minimum, foundation knowledge on which to build this professional understanding and skill.

During this same timeframe, the mandatory NSW K–12 curriculum has become standards-based. An essential outcome for graduates of contemporary teacher education programs, therefore, is an understanding of, and the capability to apply assessment practices aligned with curriculum standards.

The uses and purposes of assessment

Marguerite Clark describes three kinds of assessment activities corresponding to three main purposes.[14] These being:

▶ classroom assessments for providing information to support teaching and learning in individual classrooms

▶ examinations and tests for making decisions about an individual student's progress through the education system (eg NAPLAN) and for certification or selection decisions, including the allocation of 'scarce educational opportunities' (eg the NSW HSC and its contribution to the ATAR, and the ROSA)

13 Black, P. and Wiliam D, 'Inside the black box', *Phi Delta Kappan*, Vol 80:2, pp. 139–48.
14 Clarke, M., (2012), What matters most for student assessment systems: A framework paper., The World Bank: Washington DC, p. 6.

▶ large-scale standardised performance tasks incorporated into system-level assessments for monitoring and providing policy maker and practitioner relevant information on overall performance levels (eg NAP testing) including international sample assessments used for international benchmarking (eg PISA, TIMMS).

These three purposes will be used to frame three key content areas relevant for beginning teachers:

1. classroom assessment

2. statewide tests and examinations

3. large-scale standardised assessment programs

Clearly the first priority for all beginning teachers is classroom assessment. While not essential initially for all teachers, understanding of the other two purposes will probably be required at some point early in a teacher's career and can enhance skills associated with classroom practice.

Classroom assessment in a standards-based curriculum

In *Performance Counts: Assessment Systems That Support High-Quality Learning*, Linda Darling Hammond suggests that in successful school systems:

'The student assessment process is guided by common standards and grounded in a thoughtful, standards-based curriculum. It is managed as part of a tightly integrated system of standards, curriculum, assessment, instruction, and teacher development.'[15]

She cites Australia as an example of where this happens. In NSW the mandatory curriculum K–12 is standards-based.

The *NSW K–10 Curriculum Framework* describes the uses and purposes of standards in the curriculum. It states:

'Explicit standards are established that allow recognition of student achievement and planning for further learning.[16] This principle recognises that:

▶ syllabus outcomes, indicators, content, stage statements, work samples and performance descriptions all contribute to an understanding of expected standards

▶ realistic assessment of the achievement of standards provides information to improve teaching and learning and to set targets for improvement

▶ providing meaningful feedback to students about their achievement against standards engages and challenges them in the learning process.'

15 Darling Hammond, L., (2010), *Performance counts: Assessment Systems that Support High-Quality Learning*, Council of Chief State School Officers, Washington DC, p. 3.
16 BOSTES, K-10 Curriculum, Syllabuses, 2002, accessed 07/09/2015, http://www.boardofstudies.nsw.edu.au/syllabuses/syllabus-development/pdf_doc/k-10-curriculum-framework.pdf.

Key Element 1

Beginning teachers need to have knowledge about and a clear understanding of how the NSW standards-based curriculum is constructed and how the various elements work together. They should recognise and understand the principles that underpin the development and implementation of NSW curriculum.

Figure 1 below shows the elements and relationships in the NSW Curriculum Framework. It illustrates how the standards-referenced curriculum model is embedded in the NSW mandatory K–12 syllabuses.

FIGURE 1 – A STANDARDS-REFERENCED APPROACH

A Standards-Referenced Approach

Syllabus Standards

Performance Standards

ASSESSMENT

Expectations and Intentions
Clarified by:
• Aims and objectives
• Outcomes
• Stage statements
• Content

Levels of Achievement
Clarified by:
• Performance descriptions
• Student responses
• Grade commentaries

What is learned

What is reported

Standards are described in syllabuses for each subject or learning area in the curriculum. Student progress and achievement is assessed and reported against the standards.

Syllabus standards

Aims and objectives

Syllabus aims are broad statements that direct the overall intent of the learning.

Syllabus objectives indicate the knowledge, skills, values and attitudes that students will gain through their engagement with the intended learning. Syllabus objectives are expressed in terms of the type of performance students are expected to demonstrate at the end of a two-year stage.

Outcomes and content

Outcomes are defined as explicit statements of the knowledge, skills and understandings expected to be learned by students. Syllabus outcomes clarify the types of things students know and are able to do as they move towards achieving the objectives.

The outcomes for each stage represent a greater degree of complexity and difficulty than those of the previous stage. In this way, outcomes in stages reflect the two-year continuum of learning.

BOSTES defines content as 'describing in more detail how the outcomes are to be interpreted and used.'[17]

Stage statements

Stage statements are summaries of the knowledge, understanding, skills, values and attitudes that have been developed by students as a result of achieving the outcomes for each two-year stage of learning.

Taken together, the stage statements describe the full learning continuum in a subject or learning area over several stages.

Performance standards

Performance standards are described by levels of expected achievement. They are supported by annotated work samples which enable teachers to recognise a particular level of achievement in practice, and how a standard might be demonstrated in response to a specific activity or assessment task.

For reporting purposes they are labelled as Grades A to E.

Figure 2 below is referred to as the Common Grade Scale. The Common Grade Scale is common to all stages and is applied in the context of the outcomes and content for the syllabus and the stage.
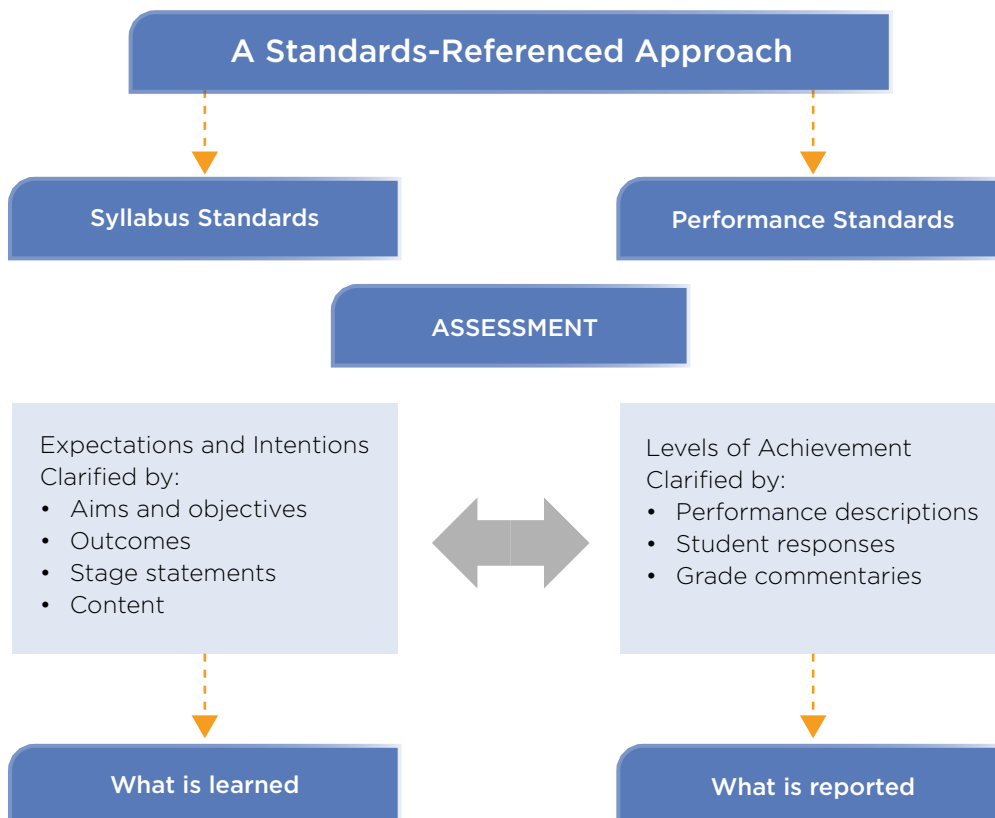
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17   BOSTES, K-10 Curriculum, Syllabuses, 2002, accessed 07/09/2015, http://www.boardofstudies.nsw.edu.au/syllabuses/syllabus-development/pdf_doc/k-10-curriculum-framework.pdf.

FIGURE 2 - LEVELS OF ACHIEVEMENT

A	The student has an extensive knowledge and understanding of the content and can readily apply this knowledge. In addition, the student has achieved a very high level of competence in the processes and skills and can apply these skills to new situations.
B	The student has a thorough knowledge and understanding of the content and a high level of competence in the processes and skills. In addition, the student is able to apply this knowledge and these skills to most situations.
C	The student has a sound knowledge and understanding of the main areas of content and has achieved an adequate level of competence in the processes and skills.
D	The student has a basic knowledge and understanding of the content and has achieved a limited level of competence in the processes and skills.
E	The student has an elementary knowledge and understanding in few areas of the content and has achieved very limited competence in some of the processes and skills.

Source: Board of Studies Assessment Resource Centre

Performance standards are applicable to each stage of learning from Stage 1 to Stage 6. The exceptions are in Stage 5 where the Common Grade Scale is elaborated into subject-specific Performance Descriptors and Stage 6, Year 12 where six Performance Bands are used to report HSC achievement.

In Early Stage 1, students are expected to be achieving below, at, or above the standard described.

The BOSTES Assessment Resource Centre contains sample assessment tasks, work samples and performance descriptions to assist teachers in understanding the standards and to make overall judgements about each student's level of achievement against the standards. Explanations called grade commentaries are an important link between the samples and the grades.

They assist teachers to judge the level of achievement that each student is demonstrating either at points during the stage of learning or by the end of the stage.

Becoming familiar with the standards initially involves engaging with the BOSTES support materials for relevant syllabuses and stages. It includes:

▶ the outcomes and content for the learning

▶ the descriptions for each A to E grade (or applicable scale)

▶ the sample assessment tasks

▶ the annotated work samples and

▶ the grade commentaries.

Standards in the context of special needs

BOSTES provides advice about using Life Skills outcomes and content for planning and assessment for students with special needs.[18]

FIGURE 3 - ADVICE ON ASSESSMENT FOR LIFE SKILLS

The selection of Life Skills outcomes for individual students is central to the teaching and learning cycle.

Identify the Life Skills outcomes that will be addressed in the particular syllabus or unit of work.

Students do not need to address all the Life Skills outcomes in each syllabus. The student's learning needs should determine which Life Skills outcomes and content are addressed.

Students will be assessed in relation to the selected Life Skills outcomes.

Evidence of learning for students undertaking Life Skills outcomes and content must be specific to the individual student.

Teachers need to become aware of:
• the way in which the student communicates
• the time required for the student to communicate
• support that will be required for the student to demonstrate achievement in relation to outcomes, including modifications to equipment, furniture and environment; verbal, visual and/or physical prompts; and physical assistance.

Evidence of learning links observable behaviour and student products to achievement in relation to outcomes.

Diagram: central circle labelled OUTCOMES surrounded by five numbered circles:
1. What evidence of learning is required?
2. How will this evidence be gathered?
3. What content, learning experiences & instruction will allow students to demonstrate these outcomes?
4. How will feedback be provided?
5. Is there sufficient evidence that students have made progress as a result of these experiences?

Teachers reflect on student performance in relation to Life Skills outcomes.

Information gathered as part of the teaching, learning and assessment cycle will inform any changes that are needed to instruction and teaching strategies.

Teachers should identify opportunities for maintenance of knowledge and skills and generalisation of achievement of outcomes.

Outcomes need to be revisited and reviewed often to ensure maintenance and generalisation of knowledge, understanding and skills.

Feedback to students

Appropriate feedback during and at the end of activities guides and affirms student behaviour towards achievement of outcomes.

Teachers should consider the most effective form of feedback for individual students. This may include oral, visual or tangible forms.

Content and learning experiences

Each syllabus has content for each outcome in the form of 'Students learn about' and 'Students learn to' that may be selected according to individual student's learning needs. The content forms the basis of the learning activities for students and also provides opportunities for teachers to make judgements on student achievement.

Teachers plan the instruction, teaching and learning experiences appropriate to the outcomes. It is important that teachers develop whole-of-class programs that can accommodate the learning needs of all students.

Some strategies for gathering evidence of learning in relation to Life Skills outcomes may include:

• observation of a physical response
• observation of engagement in the teaching and learning activity
• observation of performance in practical activities
• observation of participation in group work
• written responses such as diary entries, design portfolio
• responses using augmentative and alternative communication (AAC) systems
• oral reports and presentations
• visual displays such as collage, sketching/graphic communication.

18 BOSTES, Advice on Planning, Programming and Assessment, Life Skills, NSW Government, 2007, accessed on 29/10/15, http://www.boardofstudies.nsw.edu.au/syllabus_sc/pdf_doc/life_skills_710_support.pdf

Key Element 2

Beginning teachers need to understand the key role assessment plays in bringing the elements in syllabus and performance standards together to ensure learning opportunities and clarity about expectations and achievement.

A key *Curriculum Framework* principle states that 'the assessment of student achievement will guide decisions on how learning can be improved' highlighting a key professional skill for teachers.[19] The *Curriculum Framework* also recognises the role of students.

'All students must be able to engage in, take responsibility for, and continue their own learning.'[20]

This principle recognises that:

▶ learners use their current understanding to discover, construct and incorporate new knowledge, skills and understanding

▶ teachers' instruction and assessment influence students' learning and the learning process

▶ students can develop and use a range of strategies to actively monitor and evaluate their learning and their learning strategies

▶ frequent feedback from teachers enables students to map their progress relative to defined standards, and to gain insight into their own learning.

Key Element 3

Beginning teachers need to understand how teaching, learning, assessment, feedback and reporting can be aligned and integrated in practice.

Figure 4 below provides a scaffold for understanding integrated teaching and learning and assessment. It draws on the work of Grant Wiggins' and Jay McTighe's Backwards Design[21] and is consistent with the underlying principles expressed in Targeted Teaching[22] The scaffold demonstrates the importance of planning for assessment including feedback and models assessment for and of learning in practice.
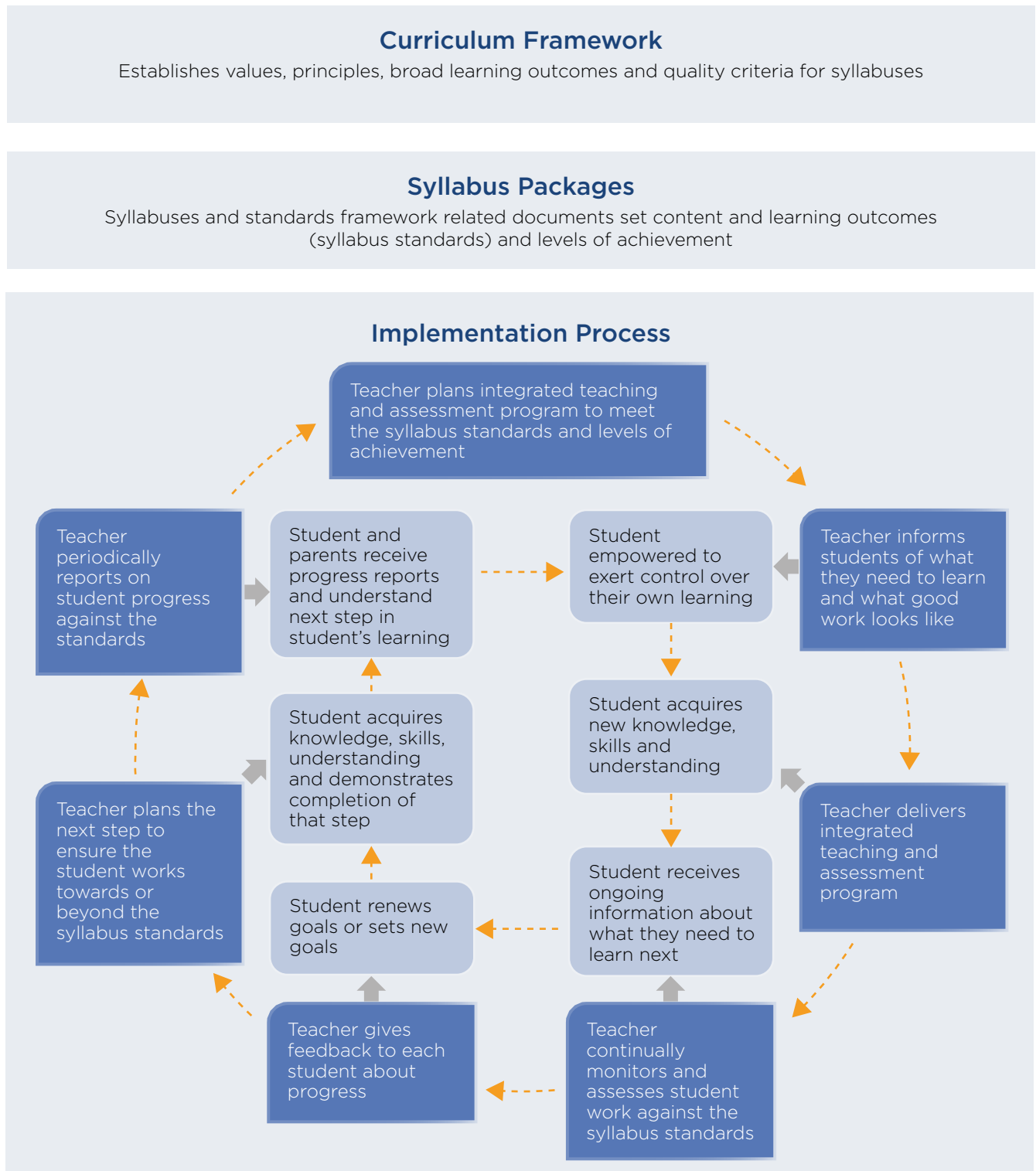
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19 Ibid p 6.
20 Ibid p 5.
21 Wiggins, G, and McTighe, J, 2005, *Understanding By Design*, Association for Supervision and Curriculum Development.
22 Goss, P, Hunter, J, Romanes, D, Parsonage, H, 2015, *Targeted teaching: how better use of data can improve student learning*, Grattan Institute.

FIGURE 4 - INTEGRATED TEACHING & ASSESSMENT CYCLE

The K–10 planning-teaching-monitoring-assessment-planning cycle

Curriculum Framework

Establishes values, principles, broad learning outcomes and quality criteria for syllabuses

Syllabus Packages

Syllabuses and standards framework related documents set content and learning outcomes (syllabus standards) and levels of achievement

Implementation Process

Teacher plans integrated teaching and assessment program to meet the syllabus standards and levels of achievement

Teacher informs students of what they need to learn and what good work looks like

Student empowered to exert control over their own learning

Student and parents receive progress reports and understand next step in student's learning

Teacher periodically reports on student progress against the standards

Student acquires knowledge, skills, understanding and demonstrates completion of that step

Student acquires new knowledge, skills and understanding

Teacher delivers integrated teaching and assessment program

Teacher plans the next step to ensure the student works towards or beyond the syllabus standards

Student renews goals or sets new goals

Student receives ongoing information about what they need to learn next

Teacher gives feedback to each student about progress

Teacher continually monitors and assesses student work against the syllabus standards

In the process illustrated above:

▶ the teacher begins with the standards that students are expected to meet by the end of a unit of work or grade level

▶ the knowledge, skills, and concepts that students need to learn are identified

▶ the teacher then plans lessons activities and strategies to move student understanding and skill towards the expected outcomes

▶ the teacher plans formative assessment strategies to check for understanding and progress, using a wide of appropriate tasks and activities

▶ the teacher plans summative assessment strategies at the end of the learning period and makes a judgement about each student's level of achievement

▶ the teacher then decides if the overall plan is likely to ensure students achieve the expected outcomes against the identified areas of the standards

▶ at the end of the learning period the teacher determines the next steps in learning and evaluates the success of the plan and considers ways it could be improved

▶ feedback to students and parents is planned to occur throughout the process.

Assessment advice in BOSTES syllabuses and support material in the Assessment Resource Centre helps teachers to link the syllabus standards and performance standards through both formal and informal assessment activities.

Key Element 4

Beginning teachers need to know summative and formative assessment purposes and how the two can be brought together. They need to know how to incorporate both purposes for assessment into teaching and learning programs.

In NSW curriculum documents formative and summative assessments are defined as Assessment for and of Learning.

Dylan Wiliam describes the difference:

'The distinction between assessment of learning and assessment for learning is basically about the intention behind the assessment. So, if you're assessing in order to help you teach better, that's assessment *for* learning, and if you're assessing in order to grade students, to rank them or to give them a score on a test, then that's assessment *of* learning.'[23]

23 Wiliam, D, *Assessment for Learning: Why, what and how*, Cambridge Assessment Network Conference, University of Cambridge, September 2006.

Or as Paul Black put it:

'When the cook tastes the soup, that's formative assessment. When the customer tastes the soup, that's summative assessment.'[24]

The main purpose of formative assessment is to give teachers information during the learning process that will enable them to adjust teaching to support learners. It is designed to help teachers understand where students are at in their learning and identify concepts and skills that they have not mastered. Strategies can then be used to assist that learning.

Summative assessments are usually given at the end of a specific period of learning, and are generally used to determine what has been learned and how well students have learned.

Dylan Wiliam identifies the following strategies and three timeframes for formative assessment:

▶ clarifying and understanding learning intentions and criteria for success by giving students examples of annotated work to flesh out criteria for success

▶ engineering effective classroom discussion, questions and tasks that elicit evidence of learning.[25]

He suggests three timescales for formative assessment:

▶ long cycle – over the course of units or terms

▶ medium cycle – within and between teaching units, ie one or two weeks

▶ short cycle – using information to change teaching within a day or two – the most important cycle. [26]

24 Black, P. and Wiliam D, 'Inside the black box', *Phi Delta Kappan*, Vol 80:2, pp.:139-148.
25 Wiliam, D, *Assessment for Learning: Why, what and how*, Cambridge Assessment Network Conference, September 2006.
26 Ibid.

This can be applied in the following way:

FIGURE 5 - APPLYING STRATEGIES FOR FORMATIVE ASSESSMENT

	Short-cycle Assessment	Medium-cycle Assessment	Long-cycle Assessment
What do you learn?	Where is each student in his or her learning right now?	How much progress is each student making?	Is each student growing as planned? Where will they be at the end of the year?
Where are you in the curriculum?	Daily lesson	Within and between teaching units	Across units, terms
When in the teaching process?	Minute-to-minute: 5 seconds to 2 hours	1 to 4 weeks	9 weeks, end of semester

Designing quality assessment

BOSTES does not mandate any approach to assessment, however Assessment for Learning principles and practices underpin its advice. BOSTES advice is grounded in the work of Black and Wiliam[27] supported by recent research by John Hattie which confirms the value of Assessment for Learning practices.[28]
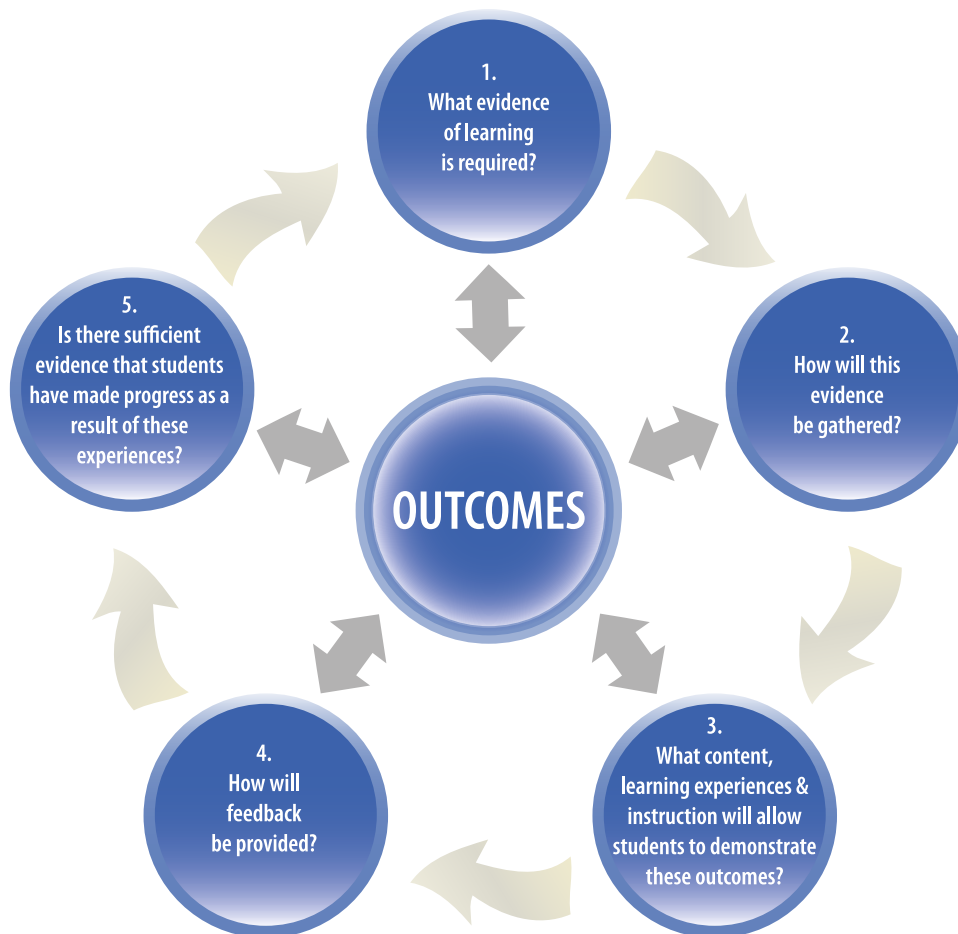
> ## Key Element 5
> Beginning teachers need to understand the place of outcomes in planning integrated teaching, learning and assessment programs.

27   Black, P. and Wiliam D, 'Inside the black box', *Phi Delta Kappan*, Vol 80:2, p. 139–48.
28   Hattie, J, (2012), Visible Learning for teacher: Maximising impact on Learning, Routledge London New York.

BOSTES syllabuses contain the following diagram to outline the place of outcomes in the assessment for learning planning process.

FIGURE 6 - THE ASSESSMENT FOR LEARNING PLANNING CYCLE

Teaching programs should take into account the outcomes that are expected to be achieved by students as a result of the teaching and learning processes.

Key Element 6

Beginning teachers need to know and understand how syllabus outcomes are written and how they can provide a guide to the types of knowledge and skills to be learned and to a variety of appropriate assessment tasks and activities.

When teachers are planning and implementing the assessment of student achievement, the outcomes become a guide for designing tasks and activities.

NSW syllabus outcomes are written using typical 'outcome verbs' such as those shown in the table below. The Areas for Assessment in the table that follows are reflective of Bloom's Taxonomy. The outcomes verbs provide a good guide to framing assessment tasks and activities. The Assessment Activities are examples of varied types of assessment appropriate for specific outcomes. There are many other ways to form questions. Assessment activities need not be teacher-led. Activities should include peer and self-assessment strategies supported by the teacher. A full table can be found at *Appendix 1*

Area for Assessment	Typical Outcome Verbs	Assessment Activities
Knowledge, Recall and Understanding These are mainly concerned with what a student knows.	Knows, tells, lists, recites, explains, describes, identifies, names, recounts, answers, recognises, forms, copies, uses, recalls, names, understands, reproduces, completes, locates, labels	Background knowledge quiz – multiple-choice, true/false Listing activities – words, numbers, pictures, crosswords Outlining – using words, short phrases, brief sentences Fill in the blank exercises – using cloze or blanks in a matrix Matching exercises – words for meaning, questions with answers, pictures Labelling a diagram Basic – calculating, fieldwork and interviews

Source: Assessing and Reporting Using Stage Outcomes: Part 1 Assessing

Board of Studies NSW 1996

Key Element 7

Beginning teachers should know and understand the Assessment for Learning principles that BOSTES provides to underpin effective assessment.

Assessment activities should:

▶ be valid and be based on syllabus outcomes

▶ be inclusive and accessible for all students

▶ include criteria to clarify for students what aspects of learning are being assessed

▶ enable students to demonstrate their learning in a range of different contexts

▶ be reliable, be free from bias and provide evidence that accurately represents a student's knowledge, understanding and skills

▶ enable students and teachers to use feedback effectively and reflect on the learning process

▶ be part of an ongoing process where progress is monitored over time.[29]

Adjustments for students with special needs

Key Element 8

Beginning teachers need to know how assessment can be tailored for students with special needs.

BOSTES has produced support documents that assist teachers in programming for students with special education needs. They are available on the Board's K–6 Educational Resources website.[30]

Some students with special education needs will require adjustments to assessment practices in order to demonstrate what they know and can do in relation to syllabus outcomes and content. The type of adjustments and support will vary according to the particular needs of the student and the requirements of the activity. These may be:

▶ alternative formats for responses, for example written point form instead of essays, scaffolded structured responses, short objective questions or multimedia presentations

▶ adjustments to assessment activities, for example rephrasing questions, using simplified language, fewer questions or alternative formats for questions

▶ adjustments to the assessment process, for example additional time, rest breaks, quieter conditions, or the use of a reader and/or scribe or specific technology.

29 BOSTES, Principles of Effective Assessment, Support Materials, 2015, accessed on 1/09/2015 http://syllabus.bos.nsw.edu.au/support-materials/principles-of-effective-assessment/.
30 BOSTES, Educational Resources for Australian Teachers and Students, Kindergarten to Year 6, NSW Government, 2015, accessed on 15/09/2015, http://k6.boardofstudies.nsw.edu.au/wps/portal/go/home.

Key Element 9

Beginning teachers should have a working knowledge of the vocabulary of assessment. They should understand and be able to apply concepts of validity and reliability to the development of their own assessment activities and tasks and to broader measures such as examinations and standardised testing programs.

Beginning teachers should understand that an assessment activity is valid if it measures what it sets out to measure and that validity is enhanced by assessing only performance relevant to the task. For example valid activities to assess talking or drawing will not depend on skills in reading and writing.

Key Element 10

Beginning teachers need to demonstrate that they understand how to check that activities are likely to be valid and reliable when planning assessment activities.

An assessment task is reliable if:

▶ it is able to produce consistent results

▶ is clearly related to the stated outcomes being assessed

▶ provides an authentic opportunity for students to show what they know and can do; for example, if an outcome requires a student to make a speech, then at some point the student should be actively engaged in making a speech rather than writing about speech-making

▶ is part of a variety of assessment strategies so that students have the opportunity to show what they know and can do in different ways.

Key Element 11

Beginning teachers should understand the circumstances under which validity and reliability can be compromised and be able to check their assessment activities and tasks.

For example an activity or task may produce invalid unreliable results if:

▶ the meaning is unclear and students are unsure of what is required

▶ if it is too difficult to administer

▶ if it is too hard or too easy for the majority of students

▶ if it is too long or too short

▶ if it is culturally or gender biased

▶ if it is likely to produce an unintended emotional reaction in the student.

Understanding potential risks to reliability underlines the importance of planning in designing and administering assessment tasks and activities.

Making decisions about student achievement

Key Element 12

Beginning teachers should understand the importance of developing criteria for judging different levels of performance in response to assessment activities or tasks.

▶ What does good performance look like?

▶ What is the minimum expectation?

▶ What common errors or misconceptions are students likely to have that will show more learning is required?

▶ What importance or weighting will be applied to different aspects of performance? How will results be marked or recorded?

▶ How will the criteria be shared with students?

▶ How will feedback be framed for students?

Recording data

Key Element 13

Beginning teachers need to consider different methods for recording information about student achievement.

Collecting information about student learning can be made using a variety of formats from teacher record books to computer databases.

Record-keeping is an important consideration in monitoring students' progress and adjusting for future learning. During practicum it should be possible to try a number of different methods including:

▶ anecdotal records of informal observations in and out of class time

▶ running records for more formal observations as the teacher critically watches or listens and records information about processes or performance

▶ checklists that enable teachers to list the particular things they are looking for to be used as evidence to judge achievement

▶ rating scales or rubrics that can be used in a similar way to a checklist but also include the degree to which an outcome is demonstrated. For example, a student's performance may be recorded as achieved, developing, or not achieved. Rating scales or rubrics provide a useful way of comparing achievements across a class or a group

▶ awarding marks or grades such as A, B, C for where each mark or grade will indicate a degree of achievement described in a mark or grading scheme developed in association with the task

▶ student portfolios where students collect and submit material in a portfolio clearly linked to outcomes

▶ student profiles and growth charts can be developed and displayed for each student to enable students and teachers to monitor progress.

Record keeping can also include information that is much broader than achievement data that enables a richer picture of each student. During practicum, teachers can experiment with the systems and strategies that are most manageable and meaningful in assisting them to respond to formative and summative uses of data.

Analysing student performance for formative purposes

> ### Key Element 14
> Beginning teachers need to be able to formulate questions to help them analyse student performance to feedback to students and, just as importantly, feed forward into their teaching.

John Hattie[31] contends that:

'One of the powerful ideas in evidence based models of teaching and learning is that teachers need to move away from considering achievement data as saying something about the student,

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31 Hattie, J (2015) *What Works Best in Education: The Politics of Collaborative Expertise*, London: Pearson.

and start considering achievement data as saying something about their teaching. If students do not know something, or cannot process the information, this should be cues for teacher action, particularly teaching in a different way (the first time did not work!). Merely ascribing to the student the information that they can or cannot do something is not as powerful as ascribing to the teacher what they have or have not taught well.'

Questions should be framed in terms of the marking guidelines or rubrics set to accompanying the task or activity.

1. What can the student do?

2. Is this work as expected or not?

3. What can't the student do? Is this the result of a misconception or another factor?

4. How does the student's work compare with available work samples?

5. How does the work compare with that of others? Are there strengths and weaknesses common to other students?

6. How can the student do better? What other evidence from previous assessments or observations in class supports this?

7. What adjustments to teaching need to be made for this student and for some or all students?

Making professional judgements about student achievement

Key Element 15

Beginning teachers need to have practised and gained understanding of the professional skill of making judgements about student achievement against standards from evidence gained from assessment activities or tasks.

Professional judgement involves teachers matching what the student has been able to demonstrate against the criteria set for individual assessment activities or tasks and making on-balance judgements using evidence gained from a number of activities or tasks. The teacher will then decide whether the targeted outcomes have been achieved (generally for formative purposes) and what feedback to give to individual students or what level has been achieved at particular points in the stage of learning (generally for summative purposes) using evidence from a number of different assessments and how that will be reported.

Key Element 16

Beginning teachers need to be able to match student responses to the standards framework using the syllabus objectives and outcomes and annotated work samples either from the BOSTES Assessment Resource Centre or samples developed by the school.

Arriving at summative judgements involves taking into account strengths and weaknesses in performance across a range of contexts and over a period of time, gathering evidence on a number of assessment activities.

Assessment activities should give students opportunities to show what they know and can do.

Students should be given opportunities to display their achievements in different ways and to work in a range of situations.

A single piece of work will not cover all aspects of a grade description. Using a single piece of work to make a judgement is therefore not as valid and reliable as an 'on-balance' judgement.

Each grade description should be considered alongside descriptions for adjacent grades.

There are many suitable models that schools may consider appropriate in supporting teacher judgement.

Key Element 17

Beginning teachers should know and understand the risks associated with making sound professional judgements.

For example:

▶ gender stereotyping – expecting that girls or boys will perform better on certain tasks

▶ cultural or ethnic stereotyping – believing that students of particular cultures or origins do better at some subjects

▶ stereotyping the performance of students with special needs – eg expecting less of a student with a disability

▶ achievement stereotyping – eg assuming that if a student is good in English then they're not likely to be good at Mathematics

▶ the 'halo' effect – allowing a student's previous performance to colour judgement

▶ expectation based on past experience – eg assuming that if a student failed last time, they are likely to fail again

▶ rewarding effort to maintain self-esteem. Effort is not achievement. It can and should be rewarded in other ways.

Key Element 18

Beginning teachers need to understand the difference between comparative and standards-based assessment.

The previously cited Grattan report found:

'In some schools we spoke to, grades were based on a student's performance relative to the rest of the class rather than on external standards. Some teachers awarded A to their top performers, regardless of how these students were performing compared to the expected level for their year. At the same time, some teachers were reluctant to award Ds and Es to students who had fallen behind. Some suggested that teachers were worried such grades would reflect poorly on their teaching.'[32]

This suggests that the teachers did not measure performance against standards; rather, their judgements were based on comparisons between students or other extraneous factors.

BOSTES provides advice for teachers determining grades for reporting.[33]

In summary:

Teachers **should not be** limited to set numbers or percentages of each grade within their class or school.

▶ Students should receive the grade that best matches the standard of their achievement.

▶ It is possible for all students in a class to receive A or B grades if they demonstrate achievement of the standards.

▶ There may be some classes some where the highest grade awarded may be a B or a C.

▶ An E grade would be awarded to students who have demonstrated only 'an elementary knowledge and understanding in few areas of the content' and have achieved only 'very limited competence in some of the processes and skills' irrespective of effort.

Key Element 19

Beginning teachers should know about ways that the reliability of their judgements can be improved, for example through moderation.

Moderation by consensus is the term given to the process of teachers working together to consider student work together with the standards to make sure grades are consistent with the standards

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32 Goss, P, Hunter, J, Romanes, D, Parsonage, H, 2015, *Targeted teaching: how better use of data can improve student learning*, Grattan Institute, p. 12.

33 BOSTES, Reporting Using Grades, Assessment Resource Centre, NSW Government 2015, accessed on 1/9/2015, http://arc.boardofstudies.nsw.edu.au/go/gen-info/reporting-using-grades-questions-and-answers-for-teachers.

and that judgements are consistent or reliable across classes. The NSW Department of Education provides advice and support for teachers.[34]

Providing feedback

BOSTES provides advice on the nature of good feedback.[35]

Feedback enables students to recognise their strengths as well as areas for development, and to identify and plan with their teacher the next steps in their learning. Students should be provided with opportunities to improve their knowledge, understanding and skills through feedback that:

▶ is timely, specific and related to the learning and assessment intention

▶ is constructive and provides meaningful information to students about their learning in a variety of forms – verbally or in written form. The concept of the 'feedback sandwich': Compliment, Correct, Compliment is an example of a way to give constructive feedback

▶ focuses on the activity and corrects misunderstanding

▶ identifies and reinforces students' strengths

▶ provides information about how they can improve, eg examples of what good work looks like. Sometimes it is appropriate to show a contrast sample especially for older students

▶ facilitates the development of and provides opportunities for self-assessment and reflection during the learning process

▶ informs future teaching and learning opportunities.

Dylan Wiliam emphasises the importance of connecting feedback with an action.[36] Providing feedback that moves learners forward, ie feedback that gives the learner something to do; their immediate reaction is that they have to think. (For example, instead of 'you got 15/20', say 'there are 5 wrong answers here, find them').

▶ Activate students as instructional resources for each other – make students accountable to each other (peer tutoring, peer assessment).

▶ Activate students as owners of their own learning.

If it is appropriately modelled, students can engage in peer conferencing where they can give constructive feedback to each other in a way that is positive and helpful.

Feedback goes both ways and comments from students can provide insights into how to adjust teaching.

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34 Department of Education and Communities, Curriculum Support, NSW Government, accessed on 1/09/2015, http://www. curriculumsupport.education.nsw.gov.au/.

35 BOSTES, Reporting Using Grades, Assessment Resource Centre, NSW Government 2015, accessed on 1/9/2015, http://arc. boardofstudies.nsw.edu.au/go/gen-info/reporting-using-grades-questions-and-answers-for-teachers.

36 Wiliam, D, Assessment for Learning: Why, what and how, Cambridge Assessment Network Conference, University of Cambridge, September 2006.

▶ What did they find easiest to learn?

▶ What was difficult?

▶ What did they like about the lessons?

▶ What didn't they like?

▶ What would they do differently?

Key Element 20

Beginning teachers should be encouraged to develop a 'mindset' towards assessment and its impact on learners.

The *Curriculum Framework* recognises that teaching and learning should take place in a context of high expectations.

The work of John Hattie et al[37] which encourages teachers 'to develop a mind frame based on excellence, defined in multiple ways, and for all;'[38] and Carol S Dweck which encourages teachers to develop a growth mindset in their students. 'My research has shown that praising students for the process they have engaged in – the effort they applied, the strategies they used, the choices they made, the persistence they displayed, and so on – yields more long-term benefits than telling them they are 'smart' when they succeed.' [39]

Understanding examining and testing

Key Element 21

Beginning teachers should be familiar with state-wide examination and testing programs such as NAPLAN, Higher School Certificate and senior secondary Literacy and Numeracy testing as relevant to the learning of their students. They should also be familiar with any mandatory requirements associated with these programs.

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37 See also: Hattie and Clinton in Clinton, J. M. and J. A. C. Hattie (2014) *Teachers as Evaluators: An Empowerment Evaluation Approach*, in D. M. Fetterman, S. J. Kaftarian and A. Wandersman (eds.), *Empowerment Evaluation: Knowledge and Tools for Self-Assessment, Evaluation Capacity Building, and Accountability,* Thousand Oaks, Calif.: Sage Publications.

38 Hattie, J (2015) What Works Best in Education: The Politics of Collaborative Expertise, London: Pearson, p. 15.

39 Dweck, C.S, (2010), 'Even Geniuses Work Hard'*, Educational Leadership: Giving Students Meaningful Work*, Vol 68:1, pp.16–20.

For secondary teachers it is important that they have opportunities to acquire:

▶ basic levels of knowledge and understanding of the HSC and its purposes

▶ basic levels of knowledge and understanding of the RoSA and its purposes

▶ the teacher's role and responsibilities in school-based assessment

▶ the requirements to meet components and weightings in school-based assessment

▶ an understanding of how to combine marks and maintain mandatory weightings

▶ an understanding of how the HSC is calculated

▶ some understanding of the statistical moderation process

▶ the resultant data and resources available and how they can be used in the classroom.

This information can be found on the BOSTES website.[40]

DATA analysis tools

Key Element 22

Beginning teachers should know about the availability of the Results Analysis Package (RAP) produced by BOSTES to assist schools in analysing their HSC data and understand what type of information they can gain from it.

The RAP package is an example of how a summative assessment like the HSC can provide a formative function by allowing teachers to identify the current candidates' strengths and weaknesses and to use that information to target areas for adjustment in their teaching and learning of the next cohort.

Key Element 23

Beginning teachers should know about the availability of the School Measurement, Assessment and Reporting Toolkit (SMART) produced by the DoE to assist schools in analysing their NAPLAN data and understand what type of information they can gain from it.

40 BOSTES, The HSC in a Nutshell, HSC, NSW Government, 2015, accessed on 1/09/2015, http://www.boardofstudies.nsw.
edu.au/hsc/hsc_in_nutshell.html.

All teachers should understand that NAPLAN assesses literacy and numeracy and that all teachers are responsible for incorporating these areas into their practice.

Basic levels of knowledge and understanding of NAPLAN, its purposes, administration, the resultant data and resources are important for all teachers. They should have some understanding of the practical ways that results can influence school programs as well as teaching and learning directions.

Beginning teachers should know about the SMART package and how the data and teaching strategies it contains can be powerful tools in helping to identify some explicit areas of teaching that should be built into their planning and work in the classroom.

For example, one important resource offers a set of questions designed to guide school staff in the use of NAPLAN data at classroom level[41], Year level and for the whole school. Sample questions include:

▶ What NAPLAN question items are most commonly answered correctly/incorrectly by Year level (or class) compared to national results and/or index category over time?

▶ What does the analysis of relevant teacher-based assessment data highlight for the whole school, Year or class level? How does this compare with NAPLAN analysis?

▶ What particular skills or aspects of the curriculum and possible teaching practices does the class/question level analysis indicate a need to focus on?

▶ What are the next steps or implications for improvement planning at the whole school, Year or class level groupings? Consider the implications for a whole-school approach and the processes necessary for effective planning for improvement.

▶ What are the next steps or implications for teaching and learning for the whole school, Year or class level? Consider what high leverage strategies, best practice or research might suggest about possible ways for how to improve student learning in the areas identified.

Explicit mention of the interpretation, analysis and use of NAPLAN data is limited in the evidence provided in initial teacher education programs. Providers have reported that access to analysis packages used in schools such as RAP and SMART is not available to them. This report recommends that BOSTES investigate ways to provide access to tools that analyse results in a way that enables them to demonstrate their usefulness in formative assessment.

Key Element 24

Beginning teachers should have sufficient data literacy to understand the results of large-scale testing programs and how they can help improve student learning, including international tests such as PISA, TIMMS and PIRLS.

41 Balacco, D, 'Using school data to inform students' learning', *Curriculum and Leadership Journal,* Vol 8:33.

Data from large-scale national and international assessments

Reference in initial teacher education programs to PISA, TIMMS and other significant international data sets is limited according to the evidence provided.

Beginning teachers should be familiar with basic vocabulary associated with data including:

Mean, Median, Distribution, Standard deviation, Effect size, Trend graphs, Student growth, Value added.

As well as considering content according to the Assessment Reform Group, initial teacher education courses need to ensure that adequate time is allowed for:

▶ discussion of the different purposes of assessment and the uses made of assessment data

▶ participants to identify, sample and evaluate different ways of gathering evidence of pupils' performance

▶ giving experience of generating assessment criteria linked to specific learning goals

▶ considering evidence of bias and other sources of error in assessment and how they can be minimised.[42]

Finally providers need to consider how the practicum experience can be used to provide the experiences that the Assessment Reform Group's pamphlet identifies. As Linda Darling-Hammond put it:

'Students find that the combination of practice and course work at the same time is very important. It's hard to learn theoretical ideas in isolation, try to remember them for two years until you get to student teaching, and then all of sudden be put in a situation where you're supposed to implement something you've never seen in practice .'[43]

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42 Nuffield Foundation, *The Role of Teachers in the Assessment of Learning,* Assessment Systems for the Future Project, University of London, London, p. 14.
43 Darling Hammond, L., (2010), *Performance counts: Assessment Systems that Support High-Quality Learning*, Council of Chief State School Officers, Washington DC.

PART 3: LIST OF KEY ELEMENTS

1. Beginning teachers need to have knowledge about and a clear understanding of how the NSW standards-based curriculum is constructed and how the various elements work together. They should recognise and understand the principles that underpin the development and implementation of NSW curriculum.

2. Beginning teachers need to understand the key role assessment plays in bringing the elements in syllabus and performance standards together to ensure learning opportunities and clarity about expectations and achievement.

3. Beginning teachers need to understand how teaching, learning, assessment, feedback and reporting can be aligned and integrated in practice.

4. Beginning teachers need to know summative and formative assessment purposes and how the two can be brought together. They need to know how to incorporate both purposes for assessment into teaching and learning programs.

5. Beginning teachers need to understand the place of outcomes in planning integrated teaching, learning and assessment programs.

6. Beginning teachers need to know and understand how syllabus outcomes are written and how they can provide a guide to the types of knowledge and skills to be learned and to a variety of appropriate assessment tasks and activities.

7. Beginning teachers should know and understand the Assessment for Learning principles that BOSTES provides to underpin effective assessment.

8. Beginning teachers need to know how assessment can be tailored for students with special needs.

9. Beginning teachers should have a working knowledge of the vocabulary of assessment. They should understand and be able to apply concepts of validity and reliability to the development of their own assessment activities and tasks and to broader measures such as examinations and standardised testing programs.

10. Beginning teachers need to demonstrate that they understand how to check that activities are likely to be valid and reliable when planning assessment activities.

11. Beginning teachers should understand the circumstances under which validity and reliability can be compromised and be able to check their assessment activities and tasks.

12. Beginning teachers should understand the importance of developing criteria for judging different levels of performance in response to assessment activities or tasks.

13. Beginning teachers need to consider different methods for recording information about student achievement.

14. Beginning teachers need to be able to formulate questions to help them analyse student performance to feedback to students and, just as importantly, feed forward into their teaching.

15. Beginning teachers need to have practised and gained understanding of the professional skill of making judgements about student achievement against standards from evidence gained from assessment activities or tasks.

16. Beginning teachers need to be able to match student responses to the standards framework using the syllabus objectives and outcomes and annotated work samples either from the BOSTES Assessment Resource Centre or samples developed by the school.

17. Beginning teachers should know and understand the risks associated with making sound professional judgements.

18. Beginning teachers need to understand the difference between comparative and standards-based assessment.

19. Beginning teachers should know about ways that the reliability of their judgements can be improved, for example through moderation.

20. Beginning teachers should be encouraged to develop a 'mindset' towards assessment and its impact on learners.

21. Beginning teachers should be familiar with state-wide examination and testing programs such as NAPLAN, Higher School Certificate and senior secondary Literacy and Numeracy testing as relevant to the learning of their students. They should also be familiar with any mandatory requirements associated with these programs.

22. Beginning teachers should know about the availability of the Results Analysis Package (RAP) produced by BOSTES to assist schools in analysing their HSC data and understand what type of information they can gain from it.

23. Beginning teachers should know about the availability of the School Measurement, Assessment and Reporting Toolkit (SMART) produced by the DoE to assist schools in analysing their NAPLAN data and understand what type of information they can gain from it.

24. Beginning teachers should have sufficient data literacy to understand the results of large-scale testing programs and how they can help improve student learning, including international tests such as PISA, TIMMS and PIRLS.

APPENDIX 1

Examples of outcome verbs used in NSW syllabuses and performance standards

Area for Assessment	Typical Outcome Verbs	Sample Assessment Activities
Knowledge, Recall and Understanding These are mainly concerned with what a student knows.	Knows, tells, lists, recites, explains, describes, identifies, names, recounts, answers, recognises, forms, copies, uses, recalls, names, understands, reproduces, completes, locates, labels	Background knowledge quiz – multiple-choice, true/false Listing activities – words, numbers, pictures, crosswords Outlining – using words, short phrases, brief sentences Fill in the blank exercises – using cloze or blanks in a matrix Matching exercises – words for meaning, questions with answers, pictures Labelling a diagram Basic – calculating, fieldwork and interviews
Skills in Analysis and Critical Thinking These skills are concerned with learning about 'how' rather than 'what'.	Explains, analyses, investigates, measures, explores, asks, recognises, identifies, separates, sorts, collects, describes, gathers, argues, reasons, organises, discerns, observes, assesses, selects	Categorising – sorting information Defining – recognising discriminating features Pros and cons – recognising advantages and disadvantages Analysing case studies – analysing, evaluating and expressing opinions Investigations, data collection, interviews Researching Debating Discussions

Area for Assessment	Typical Outcome Verbs	Sample Assessment Activities
Skills in Synthesis and Creative Thinking These skills are about the ability to combine the familiar with the new in different ways and in unfamiliar contexts.	Develops, displays, interprets, initiates, summarises, infers, generalises, changes, coordinates, plans, constructs, presents, determines, graphs, compares, contrasts, designs	Summary writing – journals Analogies Concept maps Dialogues Portfolios Narratives Poems Diary – journals Designing Experiments
Skills in Problem-solving These skills are concerned with recognising problems and determining possible solutions.	Asks, investigates, observes, answers, applies, listens, solves, develops, recognises, relates, infers, forms, assesses, interprets, selects, describes, predicts, explains, argues, demonstrates, decides, hypothesises, reasons, estimates, compares, contrasts, generalises, designs, constructs, identifies	Problem-solving principles Problem recognition Finding solutions Question development for problem-solving Selecting best strategies Research Critical dialogue, learners as researchers

Area for Assessment	Typical Outcome Verbs	Sample Assessment Activities
Skills in Application and Performance These skills are concerned with the application of knowledge, skills and understanding through performance.	Recites, directs, moves, instructs, reproduces, communicates, acts, demonstrates, applies, cooperates , discerns, observes, develops, discusses, relates, catches, contributes, expresses, displays, engages, interprets, coordinates, strikes, constructs, performs, presents, draws, reads, designs, speaks, initiates, participates	Paraphrasing Finding applications Models Projects – poster evaluations Demonstrations Musical performance Dance performance Dramatic performance Physical performance Artistic performance – role-play Debates Peer tutoring
Skills in Evaluation These skills are concerned with applying knowledge to make judgement.	Decides, discerns, summarises, selects, predicts, evaluates, argues, reasons, measures, computes, infers, generalises, relates, compares, contrasts, concludes, assesses	Essay writing Reports – written and oral Mind maps Evaluative reports – oral/written Graphing – diagrams Problem posing Presentations

Source: Assessing and Reporting Using Stage Outcomes: Part 1 Assessing, Board of Studies NSW 1996

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