
LEARNING PROGRESSIONS AND ONLINE FORMATIVE ASSESSMENT
NATIONAL INITIATIVE – DISCOVERY PHASE

FINAL REPORT

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Representatives on the agencies' advisory groups consulted:

- Australian Curriculum, Assessment and Reporting Authority (ACARA) F–12 Curriculum Reference Group
- ACARA Aboriginal and Torres Strait Islander Advisory Group
- ACARA National Assessment, Data, Analysis and Reporting Reference Group
- ACARA Students with Disability Advisory Group

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- Australian Institute for Teaching and School Leadership (AITSL) Professional Growth Network
 - AITSL School Leadership and Teaching Expert Standing Committee
 - AITSL Teacher Education Expert Standing Committee
 - National Online Learning Services Steering Group (NOLS)
 - National Schools Interoperability Program Steering Group (NSIP).

Vendors interviewed:

- ACER
- Alares/SchoolBox
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- Ayra Analytics
- Bardic Systems
- Brightpath
- Canvas (Instructure)
- Cognitive AI
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2 Context

A central finding of the *Through Growth to Achievement: Report of the Review to Achieve Educational Excellence in Australian Schools* (Excellence Review) was that learning progressions can help teachers adapt their teaching to better support students' learning. The Excellence Review proposed that aligned, online and on-demand formative assessments, combined with professional learning and resources, can assist teachers to use and interpret learning progressions in order to improve the learning growth and attainment of every student every year.

Following the Excellence Review, the former Australian Government minister for education and training established an expert reference panel to shape a shared vision for learning progressions and formative assessment. The expert reference panel, consisting of Ms Christine Cawsey AM, Laureate Professor John Hattie and Professor Geoff Masters AO, delivered its report in November 2018. The report offered a vision for 'more effective classroom teaching and assessment practices made possible by the provision of on-demand, quality resources and aligned professional learning'.

At the end of 2018, all states, territories and the Commonwealth signed the *National School Reform Agreement* which includes two related national policy initiatives:

- i. Enhancing the Australian Curriculum to support teacher assessment of student attainment and growth against clear descriptors; and
- ii. Assisting teachers to monitor individual student progress and identify student learning needs through opt-in online and on demand student learning assessment tools with links to student learning resources, prioritising early years foundation skills.

The two national policy initiatives are closely related and Ministers agreed to bring them together and progress a Learning Progressions and Online Formative Assessment National Initiative (the initiative). Governance arrangements were put in place to oversee the initial discovery phase of this initiative, including establishing a Project Management Board and a Project Management Office.

Education Services Australia (ESA); the Australian Curriculum, Assessment and Reporting Authority (ACARA); and the Australian Institute for Teaching and School Leadership (AITSL) were contracted to provide services to the discovery phase of the initiative.

The objectives of the discovery phase were:

- further refinement of the scope and phasing to deliver a proof of concept
- learning progression design and process with initial focus on elements of literacy (reading and writing), numeracy (number sense and algebra), and creative and critical thinking
- technical requirements and selection criteria for assessment resources linked to the learning progressions
- user requirements, key issues and likely demand for system design
- system and vendor integration needs and workable approaches
- digital learning resources, including existing resources and new requirements
- models for professional learning that support embedded learning and cater for the different learning needs of the profession
- an overarching communication and engagement strategy (in association with contentgroup™, commissioned directly by the Project Management Board).

This report presents key findings from the discovery phase of the initiative and makes recommendations for an alpha phase of further work.

3 Executive summary

The discovery phase of the Learning Progressions and Online Formative Assessment National Initiative (the initiative) has left no doubt as to the importance of the initiative for education in Australia. The approach adopted in this phase – to consult extensively with the education profession – revealed a remarkable consistency of views among the teachers and school leaders across the country who were consulted. The overarching recommendation of this report is for education ministers to endorse a proposal for an alpha phase of further work to develop an innovative online, opt-in service that will support teachers to implement learning progressions and practise formative assessment to improve student learning.

It has become clear through the discovery phase that the real focus of this initiative is not the tools – the learning progressions and the assessments – but supporting and assisting the decisions teachers make about how to address their students' learning needs. To ensure their approach is truly evidence-based, teachers need to be able to access information that supports their judgements. They need access to resources, plans and practices that are informed by evidence and are associated with the greatest impact on student learning. This initiative offers an opportunity to build that evidence base of best practice while simultaneously providing a national approach to solving some fundamental difficulties in assessing and addressing student learning that teachers face every day.

3.1 What is the challenge and how should we meet it?

The core work of teachers in classrooms is to optimise student progress by using curriculum and assessments to monitor learning and inform their practice. Teachers all use versions of a teaching and learning cycle that encompasses planning, assessment and feedback to assist students to learn. Learning is achieved with more efficiency and effectiveness when teachers create or access quality resources and are adept at using them. It is understood that students will progress more quickly if their teachers know where they are in their learning and then teach to that point of need.

For the teachers consulted, personalising teaching is a noble goal that is necessarily limited in its realisation. Personalising or differentiating teaching for each student, in every lesson, across the curriculum is unrealistic. In their effort to identify individual learning achievement and differentiate teaching, Australian teachers and school leaders describe facing significant gaps across national education infrastructure and what has been presented to them by state and territory authorities. This exacerbates the issues. Teachers and school leaders have an Australian Curriculum, a National Assessment Program, and now also National Literacy and Numeracy Learning Progressions. However, the connections between these elements are not evident, and the structures are not sufficient to support teachers to implement curriculum and personalise teaching to improve learning. Every school involved in the discovery phase research described an array of digital systems, programs, assessments and other resources that they have sourced, developed and/or purchased in an attempt to assist teachers with their core work.

As a nation, we require our teachers and school leaders to do much more than plan, teach and assess; we also implicitly expect them to do the work of curriculum designers, test developers, psychometricians and data analysts. We have heard teachers say workload is an issue. Teachers expect to work hard, but their feedback is that too much is being expected of them, and left to them. They struggle to make connections across what is presented to them nationally and locally to determine where their students are in their learning. This creates uncertainty; and it is the uncertainty that becomes a burden. Are they making the best decisions? Are they choosing the right resources? Are they doing enough?

The discovery phase has clarified the 'pain points' shared by teachers and school leaders around the country, and offers insights into solutions that will meet the needs of teachers working to improve student learning progress. This report contains a proposal for an alpha phase for consideration by education ministers. Alpha and beta phases will be key to continuing a measured and evidence-based and profession-informed approach to this major infrastructure development. It is clear that the initiative cannot be conceived as a short-term deliverable, but should be understood as developing a new and important feature in the national education landscape to assist teachers in their day-to-day

work, and that will need to be curated and maintained. The initiative will not be finalised in two or three years' time. It will be an ongoing process that will underpin a sustained transformation in practice for teachers, to deliver improved learning progress for students.

3.2 The work undertaken in the discovery phase

The discovery phase of this initiative was well received by stakeholders and education professionals and was viewed as a prudent approach to evidence-based reform. Teachers and school leaders appreciated the extensive engagement undertaken with the profession as a starting point before embarking on solutions design. Other potential users, including students, parents, jurisdiction and sector representatives and vendors, were also consulted during the discovery phase.

There were three primary workstreams in the discovery phase, each led by a different agency:

1. learning progressions and assessments, led by the Australian Curriculum, Assessment and Reporting Authority (ACARA)
2. user-centred design research, delivery system and digital resources, led by Education Services Australia (ESA)
3. evidence base for professional learning and implementation assistance and a framework for evaluation, led by the Australian Institute for Teaching and School Leadership (AITSL).

The work undertaken in the discovery phase has produced clear findings derived from research and evidence as well as extensive consultation that inform the proposal for an alpha phase. On the basis of these findings, several products that are effective as individual assets for national school reform have already been developed. These products will provide a useful basis to the activities of an alpha phase. Key products are included as attachments to this report, with additional products also available for reference.

3.3 Learning progressions and assessments

ACARA's National Literacy and Numeracy Learning Progressions (NLNLPs) were developed to support the teaching and assessment of literacy and numeracy. The NLNLPs help teachers to identify students' current literacy and numeracy skills, determine next steps in learning and monitor learning progress over time.

During the discovery phase, the NLNLPs were rigorously scrutinised and found to be fit for purpose and robust in their current form and structure (see **Attachment 2** for a description of the analysis methodology and findings). Several recommendations were made including:

1. make refinements to content such as improving consistency and clarity of indicators
2. create milestones indicating curriculum expectations of achievement for each sub-element
3. develop common numerical measurement scales underpinning the NLNLPs
4. develop student and parent-friendly versions of the NLNLPs.

In this discovery phase, content refinements to the NLNLPs have already been made, and the updated, improved NLNLPs can form the backbone of the development in the alpha phase. The other recommendations are proposed for completion in the alpha phase.

ACARA has developed a definition and framework for national learning progressions aligned to the Australian Curriculum that is informed by the work on the NLNLPs and by the most current research and evidence. It is important to clarify the relationship of national learning progressions to the Australian Curriculum. National learning progressions sit within the broader framework of the Australian Curriculum. They supplement and underpin the Australian Curriculum; they do not replace the Australian Curriculum. Where learning progressions exist, they can help inform the refinement of the Australian Curriculum.

In the discovery phase, AITSL's work has led to a definition of formative assessment drawing on definitions used by W. James Popham and Dylan Wiliam. Formative assessment assists teachers to use their professional judgement to target

their teaching practices and better understand how well students have learnt what has been taught, the progress they have made and the progress they need to make. Formative assessment is a regular feature of classroom practice, though teachers may not necessarily label their routine observations, interactions, questions and checks on student learning that help them monitor student understanding as ‘formative assessment’. In the alpha phase, a fundamental task will be to share and embed nationally consistent definitions of ‘learning progressions’ and ‘formative assessment’, as well as other key concepts. The proposed definitions for national learning progressions and formative assessment are shown in Figure 1.

Definition of national learning progressions

National learning progressions describe the skills, understandings and capabilities that students typically acquire as their proficiency increases in a particular aspect of the curriculum over time. They describe the learning pathway(s) along which students typically progress in particular aspects of the curriculum regardless of age or year level, and are designed to help teachers ascertain the stage of learning reached, identify any gaps in skills and knowledge, and plan for the next step to progress learning.

Definition of formative assessment

Formative assessment is an adaptive process where assessment evidence of student learning is used by teachers to modify their instructional practices or by students to adjust their learning strategies. An assessment functions formatively to the extent that evidence gathered during learning is interpreted and used, by teachers and students, to make better teaching and learning decisions.

Formative assessment has the greatest impact on learning when assessments are aligned with a validated construct of learning progress, and when followed by evidence-informed teaching interventions and frequent, embedded formative feedback.

Figure 1: Definitions of national learning progressions and formative assessment

During the discovery phase, ACARA mapped assessments of literacy and numeracy currently used in Australian schools to the NLNLPs. There is a close alignment of these assessments to the progressions, making them suitable for use in the alpha phase. The mapping also identified gaps in the availability of assessments for all sub-elements of the NLNLPs. The alpha phase of this initiative should explore opportunities to work with interested jurisdictions and providers to expand the range of assessments in literacy and numeracy, applying quality assurance criteria and innovative design.

ACARA also investigated learning progressions and assessments in the general capability of critical and creative thinking (see **Attachment 3** for a report on the project’s investigations into creative and critical thinking). However, while several decades of data and research have established a robust basis for literacy and numeracy learning progressions, the same is not true for other aspects of the curriculum. There is little empirical data to support development of national learning progressions in other aspects of the curriculum, including critical and creative thinking and, in addition to this challenge, the discovery phase found little enthusiasm for such work from teachers. Literacy and numeracy are understood to have fundamental importance as the building blocks for learning in all areas of the curriculum. Gaps in student learning in literacy and numeracy can impede access to learning in the rest of the curriculum. Teachers perceive value in the alpha phase focusing on literacy and numeracy.

The overall question of whether national learning progressions are developed for other aspects of the Australian Curriculum beyond literacy and numeracy depends on empirical evidence and policy intent. The proposed online system will be designed to make it possible to incorporate other national learning progressions and assessments if it is subsequently decided that this is both a policy goal and is empirically supported. The system will also provide data

that could be used to inform these progressions and refine those developed for literacy and numeracy. Continuing research into critical and creative thinking in the alpha phase will allow this proposition to be tested further.

3.4 User-centred design research, system delivery and digital resources

Formative assessment is part of the everyday practice of teachers across Australia, and many are highly skilled and experienced in implementing it. However, the user-centred research approach led by ESA has provided insights into the challenges teachers and school leaders experience in their effort to teach, assess and plan to optimise the learning and growth of all their students. Those insights have informed proposals for the design of the solution (see **Attachment 1** for a full set of user profiles and insights). It appears there is no perfect model to copy in terms of international practices and digital resources. A scan of products used in the United States, Canada and Europe revealed useful models and experience but no mature examples of online formative assessment implemented in a federated system. This initiative affords an opportunity for Australia to be world-leading in an innovative solution design.

It is recommended that the proposed online system be conceived as an ‘ecosystem’ that can integrate with existing and potential technologies and digital programs, rather than a colossus that encompasses and replaces all existing systems. This recommendation responds to advice from schools that they are comfortable working with some existing resources and would prefer to retain them, but would welcome improved alignment of these resources to core frameworks such as the NLNLPs and quality-assured assessments. This also acknowledges the experience of several jurisdictions that experienced challenges in their attempts to develop and deliver major technology systems. A modular build, based on an integrative design, is an innovative and lower risk proposal.

A component of the national education infrastructure is the Learning Services Architecture: the technical standards developed to enable better operation of systems across boundaries. Jurisdictions have previously agreed to implement data standards, interoperability measures and data hubs but there is inconsistent implementation of these agreed national standards around the country. A coordinated national approach using an open technology framework is proposed to facilitate data exchange between the processes and systems required to plan, deliver and assess student learning (see **Attachment 8** for a report on the proposed Open Technology Framework). This initiative provides an opportunity to accelerate efforts by school system authorities and software companies in the Australian market to establish an effective and secure innovative digital learning ecosystem for Australian schools.

3.5 Professional learning and implementation support

For learning progressions and online formative assessment to impact positively on student learning, teachers and school leaders need access to quality professional learning and enabling conditions for effective implementation over time. Professional learning and implementation support should seek to build the capability and disposition of teachers and school leaders to embed effective assessment practices in schools and to use learning progressions and assessment resources in a way that promotes each student’s improved learning progress.

AITSL has previously identified principles of effective professional learning, drawing on evidence and research. Professional learning is most effective when it is sustained and embedded in the work of schools and teams. The principles will inform the design and testing of professional learning prototypes in the alpha phase. The discovery phase highlighted the need for teachers to access professional learning that is targeted to their individual needs and the needs of their schools (see **Attachment 10** for a report on potential national professional learning approaches). In the alpha phase, teachers and school leaders may benefit from assistance to identify the existing strengths, understandings and practices of teachers in relation to learning progressions and formative assessment. Practice relevant to the use of learning progressions and formative assessment is described in multiple areas of the *Australian Professional Standards for Teachers* and the *Australian Professional Standard for Principals*. These standards are useful organisers for differing levels of expertise and professional learning needs. Like students, teachers and schools will need a certain level of flexibility to adapt the professional learning offering, if they are to engage and access support to realise the benefit of the learning progressions and online formative assessments.

The discovery phase also revealed that a lack of consistent language about practices and concepts hampers teachers' ability to collaborate effectively – as they would like to do (see the *Environmental scan of professional learning and implementation support for formative assessment*). Furthermore evidence about high impact practices is not consistently shared or translated into practice in schools. Indeed, the evidence about high impact practices is slender. This project presents an opportunity to research, develop and disseminate a national evidence base about effective teaching practices and resources, beginning with embedding consistent language and understanding. Over time the teachers' engagement with the learning progressions and online formative assessment ecosystem will validate and reinforce our evidence base about what works best.

3.6 Monitoring and evaluation framework

During the discovery phase, AITSL led work to articulate how the initiative will contribute to raising levels of achievement in Australian schools, and drafted a framework for progressive monitoring and evaluation that can be iterated as the initiative progresses through design, development, implementation and refinement (see **Attachment 11** for the program logic and draft monitoring and evaluation framework) .

This initial monitoring and evaluation framework should be adopted and adapted throughout all stages of the initiative with further development work undertaken during the alpha phase.

3.7 Communication and engagement

The importance of key audiences being able to understand and effectively engage with information about the initiative was identified at the outset. During the discovery phase, the agencies worked to an overarching communication and engagement strategy, developed by contentgroup™, which acted as a guide to support and target all communication on the initiative. A website was established (www.lpofai.edu.au) to share information about the discovery phase; a Teacher Practice Reference Group was convened to bring the voice of the profession to the foreground; the three education agencies involved in the initiative engaged closely with their existing advisory groups and took every opportunity to engage widely with as many stakeholders and different audiences as possible.

Communication and stakeholder engagement should remain at the heart of all activity during the alpha phase, and all such activity should continue to be guided by a coordinated communication and engagement strategy. The strategy will build on the insights from the discovery phase, and value propositions and key messages will be refined as the work during the alpha phase evolves.

An overarching high-level communication and stakeholder engagement strategy to bind the work of the three education agencies into a single, cohesive, compelling program of communication activity remains a high priority for clearly explaining and delivering the alpha phase.

3.8 Conclusion

The discovery phase has identified twin aims: for each student's learning to be maximised and for Australia to have a high-quality education system that has an optimal impact on student growth and achievement. The initiative may be conceived as having short- and long-term goals.

In the short-term, the alpha phase would develop prototype solutions as well as additional products to support teachers to work more efficiently and effectively, and address their immediate challenges by:

1. prototyping a user-friendly, system functionality and service that automatically connects the data and systems teachers want to use and that presents information about students' learning progress and achievement in meaningful, accessible ways including:
 - a. dashboard functions for teachers and student with progress visualisation and feedback

- b. formative assessment delivery and observation data capture
- c. auto-suggestion of relevant digital resources
- d. single sign on with seamless teacher and student registration and mobile device support
2. sharing enhanced NLNLPs and aligning them to the Australian Curriculum and to assessments, in machine-readable format
3. prototyping multi-entry point professional learning for teachers and school leaders to support and assist teachers in effective implementation.

We should also be planning for transformation of practice in the longer-term. The system we develop now should build on current good practice and support the deft capture of teacher judgements, including their classroom observations and formative assessments. This will inform an evolving empirical evidence base of effective practices to underpin a suggestion engine that will identify quality plans, resources and processes to optimise student learning progress, and provide data that can be used to continue to refine national learning progressions.

3.9 Recommendations

The discovery phase has established a robust, evidence-based foundation for a further phase of work. The achievements, findings and products derived from the discovery phase can support an alpha phase that should continue to be strongly informed by teachers and school leaders as it moves to design, prototyping and testing.

As a result of work completed during the discovery phase the following actions are recommended:

1. **Note** the key findings from the discovery phase, as documented in this final report and its attachments, which show that:
 - a. teachers and schools need this initiative
 - b. there are challenges or pain points for teachers commonly experienced across the profession, which are often associated with having too little time to do the work they need to do
 - c. teachers and schools are already seeking and using online solutions but are struggling to identify quality, relevance and impact of products
 - d. there is no single existing solution that will address all of the challenges
 - e. teachers vary in their familiarity with learning progressions and formative assessment, and will require assistance in the form of appropriate professional learning to build their confidence.
2. **Note** the key products developed as a result of the discovery phase that can support and advance future national activity, including:
 - a. *Version 3 of the National Literacy and Numeracy Learning Progressions*
 - b. *Audience profile and learning needs analysis* which provides a body of research and insights generated by the extensive consultation with teachers and the broader education community
 - c. *National Literacy and Numeracy Learning Progressions: Mapping methodology, key findings and recommendations for refinement*
 - d. *Critical and creative thinking: A report on existing and future work*
 - e. *A framework for national learning progressions and aligned assessments*
 - f. *Key advances in educational measurement*
 - g. *Digital resources quality assurance, metadata specifications and digital content specifications*
 - h. *Online digital content analysis report*
 - i. *Draft content specifications for existing, third-party and new digital content report*
 - j. *Search functionality and system integration needs for the suggestion engine*
 - k. *Open Technology Framework report*
 - l. *Open Technology Framework consultation report*
 - m. *Literature review: Formative assessment evidence and practice*
 - n. *Professional learning specifications and trial*
 - o. *Program logic and evaluation framework*
 - p. *Environmental scan of professional learning and implementation support for formative assessment.*

3. **Agree** to proceed to an alpha phase to develop and test a prototype service for supporting and assisting teachers to implement learning progressions and use online formative assessment to improve student learning, that will involve the following activities:
 - a. consulting on and testing of hypotheses and functional prototypes with stakeholders and users
 - b. prototyping standards-based integrations with key vendors and stakeholders, including development and use of machine-readable NLNLPs
 - c. developing a user story map of features and iterative improvement based on ongoing consultation with users
 - d. updating the Schools Online Thesaurus to include the language of the NLNLPs
 - e. confirming suitability of identified technical standards and gaining agreement for their use going forward
 - f. defining a minimum viable product to inform a beta phase
 - g. developing the suggestion engine functionality to facilitate the transition of search functionality from the National Online Learning Services to the proposed ecosystem
 - h. developing common measurement scales underpinning the NLNLPs and calibrating existing assessments to the scales
 - i. adding milestones to link NLNLPs to the Australian Curriculum
 - j. developing student and parent-friendly versions of the NLNLPs
 - k. identifying opportunities to commission and partner with other organisations to explore further enhancement of the NLNLPs, in particular to assist teachers of students with diverse needs
 - l. undertaking continued research into learning progressions and assessments for critical and creative thinking
 - m. applying and testing the criteria and process against existing assessments and identifying new assessments aligned to the NLNLPs for access through the system
 - n. working with interested partners to research and apply advances in educational measurement to explore innovative assessments and innovative system design
 - o. developing digital resource prototypes that test the protocols, rubrics and frameworks developed in the discovery phase
 - p. creating a digital content plan
 - q. developing a standards-aligned rubric to help identify readiness of teachers and school leaders to adopt learning progressions and online formative assessment
 - r. reviewing existing professional learning materials and designing, developing and testing of professional learning prototypes
 - s. testing and adapting the initiative's draft monitoring and evaluation framework
 - t. beginning data collection, analysis and baselining for evaluation purposes
 - u. developing a communication and engagement strategy that explains and connects the work of alpha phase and builds the vision for the end system for users
 - v. capturing detailed design documentation including definition of a minimum viable product
 - w. preparing a proposal for a beta phase informed by the minimum viable product.

4. **Endorse** Version 3 of the National Literacy and Numeracy Learning Progressions to replace Version 2 on the Australian Curriculum website, and to provide the basis for further activity during the alpha phase.

5. **Endorse** the adoption of nationally consistent definitions of 'learning progressions' and 'formative assessment' as presented in this report, to establish and embed a shared understanding and basis for work in the alpha phase.

6. **Agree** that the views and needs of the teaching profession will continue to inform the initiative in the alpha phase.

Recommendations specific to the findings of the various work streams are at the end of each chapter in this report and provide the details behind these high-level project recommendations.