# ASSESSMENT AND LEARNING: BUILDING TEACHERS' ASSESSMENT LITERACY

For too long, interest in improving students' learning outcomes has been distracted by arguments about the relative merits of competing approaches to assessment, such as 'assessment *for* learning' and 'assessment *of* learning'. This paper seeks to return attention to the importance of understanding the symbiotic relationship between 'assessment *and* learning' in improving students' learning outcomes, and underscores the critical importance of building teachers' assessment literacy for the effective functioning of this relationship.

Assessment literacy – teachers' capacity to deeply understand and reflect on their assessment practices in theoretical and practical contexts – has moved to the centre stage of education. Many national educational systems, in pursuing the goal of improving their citizens' educational outcomes, expect that their teachers will deepen their understandings of the local, national, and international assessments that are increasingly impacting on teaching and learning.

Drawing on the growing demands on teachers of upper secondary education in South Australia, this paper poses four questions: Why 'assessment literacy'? How to represent assessment literacy? What role does the structure of the assessment and certification system play in identifying and nurturing teachers' assessment literacy? What assessment literacies might teachers develop to effect a productive relationship between assessment and learning?

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# Introduction

The first part of this paper considers the concept of assessment literacy. It looks at the origins of the term 'assessment literacy', and explores how assessment literacy has been able to consolidate its place in the educational landscape over the past 20 years. It ponders why the term 'literacy' has been adopted as a metaphor for the proficient application of knowledge and skills in assessment. It looks at the increasing value placed on teacher quality and the expectations held by policymakers for improving students' learning outcomes by an investment in the building of teachers' assessment literacy skills.

The second part of the paper looks at the representation of assessment literacy – how authors, professional associations, and organisations have devised lists, frameworks, and standards for the assessment literacies that teachers should develop. It becomes clear that such 'standards' are context specific and founded on assumptions about the role of teachers in the learning and assessment process.

The third part of the paper suggests that the assessment and certification system itself, by affording teachers varied roles in the system, can identify and nurture teachers' assessment literacy. Taking as an example the SACE Board of South Australia, an assessment and certification agency in Australia, the paper considers some of the assessment literacies expected of the teachers working in this system and some of the opportunities offered to teachers as a product of the system itself to develop their assessment literacies.

From the premise that students' learning outcomes can be improved by a better understanding of the relationship between assessment and learning, the fourth part of the paper surmises what a set of assessment literacy standards might look like if they addressed the assessment and certification system currently operating to deliver the South Australian Certificate of Education (SACE).

The paper concludes with some reflections on the relationship between assessment and learning, and suggests that after 20 years of focusing on 'assessment for learning', it is now time to understand the concept as 'learning and assessment'. The term 'learning and assessment' is a better reflection of the dependencies of the relationship and a key to understanding the assessment literacies that teachers need to develop. If assessment is undertaken to understand students' learning (Masters, 2013), then a reordering of priorities is perhaps now justifiable.

# Part 1: Why 'assessment literacy'?

'Assessment literacy', defined in this paper as teachers' capacity to deeply understand and reflect on their assessment practices in theoretical and practical contexts, has moved to the centre stage of education. Many national education systems, in pursuing the goal of improving their citizens' educational outcomes, expect that teachers will deepen their

understandings of the local, national, and international assessments that are increasingly impacting on teaching and learning.

# A metaphor

It is interesting to ponder on the term 'assessment literacy' itself, why it seems to have its beginnings in the early 1990s, and the varied meanings it has since acquired.

The term 'assessment literacy' entered the educational lexicon with the adjective 'assessment' qualifying the noun 'literacy', the substance of what is sought. One meaning of the term 'literate' is to be "competent and knowledgeable in a specified area" (New Shorter Oxford English Dictionary, p. 1604). The word 'literacy', coupled with the word 'assessment', acts as a metaphor signalling qualities such as proficiency, fluency, accuracy, and insightfulness; and connoting attributes such as familiarity, competence, resourcefulness, and control over the specific area of interest – in this case, the world of assessment.

Popularised by Richard J. Stiggins, the term 'assessment literacy' seems to have entered the literature in the early 1990s. Stiggins appreciated the power of assessment in improving student learning if conducted, interpreted, and communicated by people who were assessment literate. Stiggins was driven by the belief that "assessment [is] a key to success in learning, and that school improvement efforts would not be productive unless and until educators became masters of the basic principles of sound classroom assessment practices" (1995, p. 238).

Stiggins questioned whether the approaches to assessment in the United States of America, dominated in the 1980s and1990s by standardised testing regimes, improved student learning. He lamented the fact that for decades the emphasis had been placed on how to discover "ever more sophisticated and efficient ways of generating valid and reliable test scores" (2002, p. 759), rather than focusing on how to ensure that assessment instruments, procedures, and scores helped learners want to learn and feel able to learn.

For Stiggins, assessment literates knew the difference between sound and unsound assessments. They were not intimidated by the sometimes mysterious and always daunting technical world of assessment. The need was for teachers:

... who could come to any assessment knowing what they are assessing, why they are doing so, how best to assess the achievement of interest, how to generate sound samples of performance, what can go wrong, and how to prevent those problems before they occur. Most important, those who are truly sensitive to the potential negative consequences of inaccurate assessment never permit students to be put in a situation where their achievement might be mismeasured. (1995, p. 240)

Also in about the early 1990s the idea that "integrating assessment with instruction may well have unprecedented power to increase student engagement and to improve learning outcomes" (Wiliam, 2011, p. 13) began to gain traction. This movement was expressed by those thinking about 'formative assessment' and/or 'assessment for learning', both ideas that were often imprecisely defined, confused, and used interchangeably. According to Wiliam,

the earliest use of the term 'assessment for learning' appears to have been in the title of a chapter by Harry Black in 1986. The idea was refined by the Assessment Reform Group in the late 1990s. Importantly, these movements emphasised the need for teachers to widen their thinking about assessment, expand their assessment literacy, and act on assessment and learning in classroom assessments.

Notwithstanding these movements in the early 1990s, there were other strong forces at play that cemented the need to build teachers' assessment literacy. This was a time when the international landscape was characterised by extensive global economic restructuring and competitiveness. The call by many governments for mass upper secondary education and the training of all citizens had begun to be heeded. Future prosperity depended on harnessing the talents of all citizens and on harvesting the potential of all. "This was a period of intense social and economic transformation on a global scale, where the new and emerging divisions of labour were reflected in new division of curriculum — and accompanying new divisions in assessment" (Mercurio, 2003, p. 176).

The arrival of major international testing programs to evaluate various aspects of a nation's health can be seen in this light. The Trends in International Mathematics and Science Study (TIMSS) (introduced in 1995), the Programme for International Student Assessment (PISA) (introduced in 1997), and the Progress in International Reading Literacy Study (PIRLS) (introduced in 2001), were established in response to OECD member countries' demands for regular and reliable data on the knowledge and skills of their students and the performance of their education systems (relative to others).

National testing programs, such as the *No Child Left Behind Act* (introduced in 2002) and the *Race to the Top* reforms (introduced in 2010) in the United States of America, and the National Assessment Plan – Literacy and Numeracy (NAPLAN) (introduced in 2008) in Australia, complement these international testing programs. As the following ministerial statement indicates, international and national testing programs continue to make their presence felt in Australia, and raise expectations of improvements in teacher knowledge and skills:

The aim of these improvements is to ensure that by 2025 Australia is ranked as a top five country in the world for the performance of our students in Reading, Science, Mathematics, and for providing our children with a high-quality and high-equity education system.

The aim of reaching this goal by 2025 will be legislated to galvanise our nation's focus on improving schools. Australia's future prosperity depends on embracing a high-skill future and therefore depends on lifting the performance of our schools.

Joint Media Release, Hon. Julia Gillard MP, Prime Minister of Australia, and Hon. Peter Garrett MP, Minister for School Education, 3 September 2012.

#### **Teacher Quality**

What these international and national testing programs had in common with the 'formative assessment' and 'assessment for learning' movements was a focus on improving students' learning outcomes. Paradoxically, these also placed the spotlight on teacher quality. In a sense, teachers themselves became the object of assessment.

The first, and most important, lesson is that no education system can be better than the quality of its teachers.

Hon. D. Cameron, MP, Prime Minister of UK, in Department for Education, UK, 2010, p. i

Given the broad consensus that teacher quality is the single most important in-school factor influencing student achievement (OECD, 2005; Australian Institute for Teaching and School Leadership, 2012; Hattie & Yates, 2013), it is not surprising that governments have developed comprehensive sets of interlocking standards for teacher graduates, teachers, and principals in an effort to secure improvements in student learning outcomes. According to Hargreaves and Fullan (2012):

Teaching is at a crossroads: at the top of the world. Never before have teachers, teaching, and the future of teaching had such elevated importance. There is a widespread agreement now that of all the factors inside the school that affect children's learning and achievement, the most important is the teacher – not standards, assessments, resources, or even the school's leadership, but the quality of the teacher. Teachers really matter. And the good news is that there is now a sense of great urgency in politics, in the teaching profession, and also among the public about the need to get more high-quality teachers. More and more people care about the quality of teaching. And this is putting teachers and teaching at the forefront of change. (p. xii)

But rather than teaching being "at the top of the world" as suggested by Hargreaves and Fullan, it could be argued that teacher quality is now being construed as the problem and that what we are witnessing is the assessment and regulation of teachers' competencies.

The seven national policy platforms, which the Australian Government recently endorsed as forming the foundation of the national educational agenda to be achieved by June 2015, can be viewed in this light. The policies are: Australian Professional Standards for Teachers; Australian Professional Standard for Principals; Accreditation of Initial Teacher Education Programs in Australia: Standards and Procedures; Nationally Consistent Registration of Teachers in Australia; Certification of Highly Accomplished and Lead Teachers in Australia; Australian Teacher Performance and Development Framework; and the Australian Charter for the Professional Learning of Teachers and School Leaders. Similar standards, tied to legislation and funding, have been introduced by governments in other countries (e.g. USA, UK, and Singapore) to "contribute to the professionalisation of teaching and raise the status of the profession" (Australian Institute for Teaching and School Leadership, 2012, p. 2).

The questions being posed are: Do teachers have the necessary knowledge, skills, and competencies to improve students' learning outcomes? What are the assessment literacies that teachers should have? Are teachers assessment literate?

# Part 2: How to represent assessment literacy?

This second part of the paper looks at the representation of teachers' assessment literacy – how authors, professional associations, and government organisations have described assessment literacy standards. Meeting these standards plays an increasingly important role in teachers' professional careers. There are many examples of assessment literacy standards – some express an individual's thoughts on the matter, and others represent the views of government. What becomes clear is that the assessment literacy standards are context specific and founded on assumptions about the role of teachers in the teaching, learning, and assessment process. Three different approaches to the representation of assessment literacy standards will be examined.

#### Standards

The first example is the *Standards for Teacher Competence in Educational Assessment of Students*, developed by the American Federation of Teachers, National Council on Measurement in Education, and National Education Association in 1990:

- 1. Teachers should be skilled in choosing assessment methods appropriate for instructional decisions.
- 2. Teachers should be skilled in developing assessment methods appropriate for instructional decisions.
- 3. Teachers should be skilled in administering, scoring, and interpreting the results of both externally produced and teacher-produced assessment methods.
- 4. Teachers should be skilled in using assessment results when making decisions about individual students, planning teaching, developing curriculum, and school improvement.
- 5. Teachers should be skilled in developing valid pupil grading procedures that use pupil assessments.
- 6. Teachers should be skilled in communicating assessment results to students, parents, other lay audiences, and other educators.
- 7. Teachers should be skilled in recognizing unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information.

These standards were intended for "teacher educators as they planned and implemented teacher preparation programs; guiding teacher professional developers as they plan and implement in-service programs; guiding teacher self-assessment; and guiding educational measurement specialists in their conceptualization of student assessment for a range of research and development purposes" (Brookhart, 2011, p. 10).

Brookhart (2011, p. 7) takes the original seven standards and expands them to eleven, to include two major areas not covered in 1990 – formative assessment and standards-based reform. The following examples give a flavour of some of her suggestions for revision:

- 1. Teachers should understand learning in the content area they teach.
- 6. Teachers should have the skills to provide effective, useful feedback on student work.
- 8. Teachers should be able to administer external assessment and interpret their results for decisions about students, classrooms, schools, and districts.
- 10. Teachers should be able to help students use assessment information to make sound educational decisions.

The second example is the *Australian Professional Standards for Teachers* developed by the Australian Institute for Teaching and School Leadership (AITSL) in 2011. This work lists seven standards within three domains of teaching: professional knowledge, professional practice, and professional engagement. Standard 5, "Assess, provide feedback and report on student learning", is described through five focus areas:

- 5.1 assess student learning
- 5.2 provide feedback to students on their learning
- 5.3 make consistent and comparable judgements
- 5.4 interpret student data
- 5.5 report on student achievement. (pp. 16-17)

An interesting feature of this set of standards is that each focus area (5.1, 5.2, etc.) is expanded for four career stages – graduate, proficient, highly accomplished, and lead. Thus the assessment literacy needs of teachers are defined differently, according to the stage the teacher is at. It is also interesting that the building of teachers' assessment literacy is not restricted to theoretical understandings of principles and techniques of assessment, but that assessment (a part of the professional practice domain) cannot be isolated from curriculum and pedagogy (a part of the professional knowledge domain) and self-awareness as a teacher and assessor in community of learners (a part of the professional engagement domain).

The third example is the learning and assessment system developed by Masters in 2013. Masters posits a set of five design principles:

- 1. Assessment should be guided by, and address, an empirically based understanding of the relevant learning domain.
- 2. Assessment methods should be selected for their ability to provide useful information about where students are in their learning within the domain.
- 3. Responses to, or performances on, assessment tasks should be recorded using one or more task 'rubrics'.
- 4. Available assessment evidence should be used to draw a conclusion about where learners are in their progress within the learning domain.
- 5. Feedback and reports of assessments should show where learners are in their learning at the time of assessment and, ideally, what progress they have made over time.

Masters (2013) admits that there are considerable practical challenges in implementing learning and assessment system of this kind:

These challenges include changing widely held perceptions that educational assessment is fundamentally a process of judging student success; the development of deep understandings of how learning occurs within specific learning domains as a basis for establishing where leaners are in their learning; the promotion of more coherent systems of assessment across a range of educational contexts; and the promotion of higher levels of assessment literacy across the profession. (p. 8)

It is undeniable that Masters is making strong links between 'assessment' and 'learning'. Masters argues for:

the use of educational assessment to understand rather than to judge learning, for conceptualisation of assessment as an integral part of effective teaching and learning ... and for designing educational assessment around a coherent learning assessment 'system', the elements of which work together to explore where learners are in their thinking. (p. 63)

These three models of 'standards' demonstrate the extent to which they are context-specific; there are some generalities but the standards are also closely aligned to the assumptions in the teaching, learning, and assessment system itself. The presentation of teachers' assessment literacy as 'standards' or 'principles' underscores that they reflect philosophically held positions.

# Part 3: What role does the structure of the assessment and certification system play in identifying and nurturing teachers' assessment literacy?

In this third part of the paper it is suggested that the assessment and certification system itself, by affording teachers varied roles in the system, implicitly or explicitly determine the assessment literacies that teachers need. In some cases, the assessment and certification system itself provides opportunities for teachers to develop their assessment literacy.

## Positioning

Teachers' assessment literacy will depend to some extent on how they are positioned in the curriculum and assessment system. For example, some systems require teachers to be insiders, involved in the assessment processes of conceptualising, conducting, judgment-making, and feedback giving (e.g. 'school assessment' systems); some systems afford teachers both insider and outsider status, for instance, through involvement in a variety of roles including judgment-making processes as moderators or markers (e.g. 'school assessment and external assessment' systems); and other systems position teachers as outsiders, where assessment processes are taken out of their hands and conducted by others appointed by awarding agencies (e.g. 'standardised assessment' systems). Interestingly, it is becoming a common expectation that teachers should be at home with the demands of each of these assessment systems.

Some idea about how teachers are positioned within a system can be gleaned by understanding the operation of the functions of curriculum and assessment within a jurisdiction. In Australia, the curriculum and assessment functions at the upper secondary level reside within the same jurisdiction. There seems little perception in the Australian community that these two functions may constitute a possible conflict of interest and should be separated, as is the view in countries such as Singapore (which divides the functions between the Ministry of Education and the Singapore Examinations and Assessment Board), Hong Kong (which divides the functions between the Education Bureau, and the Hong Kong Examinations and Assessment Authority), and New Zealand (which divides the functions between the Ministry of Education and the New Zealand Qualifications Authority).

In Australian jurisdictions the curriculum and assessment functions are considered to be two sides of the same coin. The current dual roles held by the practising teacher in (1) teaching and assessing his or her own students, and (2) assessing other teachers' students, need to be understood in this context. In Australia it is acceptable, desirable, and even perhaps unavoidable, that teachers are involved in the school and external assessment processes. This involvement supports the development of interactive relationships between the teaching, learning, and assessment processes.

## **Curriculum-based Approach**

Another idea about how teachers are positioned within a system can be gleaned by understanding the approach to certification and selection that is adopted by the jurisdiction. In jurisdictions that adopt a 'curriculum-based approach' rather than an 'aptitude-based approach' to certification and selection for higher education (Andrich & Mercer, 1997) – that is, where achievement scores are based on performances in school subjects and not on a general ability or aptitude test – teachers have a significant involvement in the curriculum and assessment processes. Furthermore, if those jurisdictions that adopt a curriculum-based approach also include a school assessment component, the involvement of teachers is even greater.

For some 150 years Australia has had a tradition of using curriculum-based approaches for the purposes of selection for further education and other pathways, and for some 30 to 60 years has also used school assessment processes. In 2013, for example, each of the eight jurisdictions with responsibility for conducting assessments at the upper secondary level in Australia includes a proportion of school assessment (in the range of 50% to 100%) as part of its assessment regime. In South Australia, the 'assessment cocktail' (Stobard, 2008, p. 114) is 70% for the school assessment and 30% for the external assessment.

Within the South Australian system, teachers are afforded significant insider roles in both teaching and assessment. Teachers are required to take on the roles of both curriculum designers and assessment designers; that is, they are given considerable latitude, within subject specifications, to devise learning and assessment programs for their students and to be involved in the assessment of their own students and those of other teachers.

#### **Teachers as Curriculum Designers**

With regard to the teaching of a subject, teachers in South Australia have considerable scope, particularly in those subjects that have framework syllabuses, to devise learning programs that deliver sound learning outcomes to students. Importantly, an essential assessment

literacy is understanding how learning occurs within the particular subject area; understanding the alignment between what is being learned, the construct of interest, and how it is best assessed; and being able to be an expert in their field, to be an adept user of "pedagogical content knowledge" (Schulman, 1987) or, as it has more recently been described, "technological pedagogical content knowledge" (Mishra & Koehler, 2006). When thinking about the assessment literacies that teachers might need in the future, it will be important to consider these literacies against a backdrop of teaching and learning in the information-rich age, an age where technology is transforming the way students and teachers go about knowing, understanding, and doing — transforming how students and teachers think and learn.

#### **Teachers as Assessment Designers**

With regard to the assessment of a subject, teachers in South Australia are also given considerable scope to devise and conduct assessments, judge the quality of the performance, and provide students with feedback as part of the school assessment component; to prepare their own students for the external assessments (insider status); and to be involved in the moderation of school assessments and/or marking of external assessments of students taught by other teachers (outsider status).

A factor shaping the expectations of teachers' assessment literacy in South Australia is that teachers are working within a standards-based assessment system – one that defines two or three major 'assessment types' for the school assessment and one 'assessment type' for the external assessment (e.g. assignments, investigative reports, performances, products, and examinations), each with specified conditions under which the assessment is to take place, and assessment design criteria to be used for judging performance against specified performance standards (an assessment rubric consisting of five levels) to guide the awarding of grades.

As mentioned above, the South Australian system has a 70% school assessment component (referred to in other jurisdictions as 'course work' or 'performance assessment') and a 30% external assessment component (examinations, performances, or products). Given that both the school and external assessments are summative and that the school assessments are externally moderated by teachers using social moderation techniques (Linn, 1993), and not statistically moderated against the external assessment component, the system invests high levels of expectations in teachers' assessment literacy.

This paper has shown that the nature and scope of the assessment literacies required by an assessment and certification system are formed by the assumptions for teaching, learning, and assessment on which the system is founded. Through its policies and procedures the system explains, either implicitly or explicitly, its position on the principles and purposes of assessment in the system. It presumes particular assessment literacies of its teachers.

# Part 4: What assessment literacies might teachers develop to effect a productive relationship between assessment and learning?

In this fourth part of the paper a set of assessment literacy standards are put forward for teachers operating at the upper secondary education level in South Australia. These key assessment literacy standards are offered from the premise that students' learning outcomes can be improved by effecting a productive relationship between assessment and learning.

The form and style of the assessment literacy standards are modelled on an approach developed by McMillian (2000). McMillian lists the big ideas upon which programs for the development of assessment literacy might be based. Although the assessment literacy standards are presented as isolated ideas for the major parts of the curriculum, assessment, and certification process within which the SACE operates – conceptualising, conducting, judgment-making, and feedback-giving – they are best considered as interrelated and co-dependent.

# **Assessment and Learning**

#### Conceptualising

- Assessment is being clear about purposes
- Assessment is understanding the construct of interest
- Assessment is understanding how learning occurs in the content area
- Assessment shapes learner identity and the kind of learning that takes place
- Assessment is about thinking and learning in technically rich contexts
- Assessment is about understanding themselves as teachers and assessors

#### Conducting

- Assessment is about gathering evidence using a variety of methods
- Assessment is about validity
- Assessment is about fairness
- Assessment is about feasibility
- Assessment is about understanding the technical aspects of using marks and grades
- Assessment is about understanding what influences performance for individuals and cohorts

#### Judgment-making

- Assessment is a human activity
- Assessment is about interpretation
- Assessment is about decision-making based on evidence
- Assessment is about making judgments against standards
- Assessment is about making inferences
- Assessment is appreciating the consequences of decisions
- Assessment is not values-free

#### **Feedback-giving**

- Assessment benefits student learning
- Assessment is an integral part of effective teaching and learning
- Assessment is communicating what achievement looks like
- Assessment is about making use of reliable records
- Assessment is about modifying teaching practices
- Assessment is conducted in the main by teachers.

Two observations about such a listing are made. First, it is important to appreciate that although the assessment literacy standards are context specific, they do not necessarily spring from or belong to only on assessment paradigm (e.g. 'traditional assessment' or 'alternative assessment'). Assessment systems are rarely pure. Invariably, the assessment systems that are in place at the upper secondary education level cannot be pigeonholed easily as pertaining to one assessment paradigm or another. Furthermore, teachers are increasingly being required to work across several assessment systems – be they local, national, or international assessment systems. The demands on teachers' assessment literacy are high.

Second, that there are some themes running through the list of assessment literacy standards. Some standards deal with the technicalities of assessment, others remind us of the consequences of the inferences that we draw from assessment information, and yet others talk to the positioning of the teacher-assessor himself or herself – to the teacher examining their own teaching in the light of the act of assessment; in "teachers [needing] to come to understand their own frameworks of knowledge, understanding, and values – their own preconceptions – and how they shape their conceptualizations, interpretations, judgements and decisions (Scarino, 2013, pp. 323-324).

# Part 5: Reclaiming learning

For some time now, I have found the terms 'assessment for learning', 'assessment of learning', and 'assessment as learning' somewhat uncomfortable. They seem to be the wrong way around. We are dealing with learning; the word 'assessment' should follow learning.

That the 'assessment of learning' in its various forms made incredible inroads into the psyche of nations is undeniable. Over the past 150 years we have seen the "middle class examinations" (Roach, 1971) weave their way through the fabric of schools and the community. Assessment is ubiquitous. These are "testing times ... assessment, in the form of tests and examinations, is a powerful activity which shapes how societies, groups and individuals understand themselves" (Stobard, 2008, p. 1).

Assessment overshadows learning. International test results, as performance indicators of the health of education systems and institutions, have overstepped their brief as proxies about student learning and school and teacher effectiveness.

The efforts made in the 1990s to reorient assessment in the service of learning were understandable. Some harnessing of the assessment juggernaut needed to take place and redirection was warranted. So too was the focus on assessment literacy. If assessment was to be used in ever increasing fields for ever increasing purposes, it was reasonable to expect that teachers, and others, were assessment literate; that the information that assessment provides was not misread and misused. We were looking for "potent connections" (Stiggins, 2002, p. 1) between assessment and learning, and ways to stop assessment running away in its own direction. It is now time to return to 'learning and assessment'. In understanding the relationship between the two, it is time to focus on the main enterprise, learning.

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