

Teachers' assessment literacy and design competence framework

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Introduction

Teachers play a central role in facilitating learning and empowering learners (Pastore & Andrade, 2019). They must possess a high level of assessment literacy to properly fulfil their role of implementing teaching and facilitating students' learning (Hattie, 2009). Without it, the quality of educational provision can be impacted (Looney et al., 2018).

The expectations placed on teachers in relation to their assessment knowledge and skills tend to focus on their ability to design and implement assessment with students, and to use assessment data to inform teaching practices (Brookhart, 2011). Much of the emphasis in the literature is on the mechanical processes involved in assessment, and on what is required by individual teachers (DeLuca & Bellara, 2013).

Our holistic approach conceptualises assessment literacy as relating to teachers' assessment competence, sound practices, socio-cultural understandings, and how these are embedded within the educational context (DeLuca et al., 2019). The focus is on the body of teachers within a school; many practicing teachers are at a novice stage in their professional practice (Xu, 2017) and teaching needs to be supported by school structures for optimal student learning (Crichton & McDaid, 2016).

Methodology

The aim of this study was to develop an assessment literacy and design competency framework for use across International Baccalaureate (IB) programs and to inform professional learning resources. The framework was designed to summarise the scope of assessment literacy that needs to be addressed within the IB.

The research undertaken in developing the framework comprised three elements:

- a literature review
- a scan of IB documents
- consultations with IB staff.

The framework provides a description, methodology (the attitudes, behaviours, knowledge, and skills related to each element of assessment literacy) and resources for each of the main elements identified. The resources are intended to be additional to IB documents and include exemplar courses, and other reference materials.

The framework is being used within the International Baccalaureate Organization to inform professional development for teachers and to inform curriculum and program design.

Key findings

Figure 1 shows the seven elements identified in the framework: assessment knowledge and skills; formative assessment; assessment identity; professional development; school environment; engagement of learners; and integrating digital assessment. Each element is essential individually, but also needs to work in conjunction with the other elements.

Figure 1 The seven elements of the assessment literacy and design competency framework



Assessment knowledge and skills

The knowledge, skills and attitudes incorporated in definitions of assessment literacy are influenced by changes in attitudes towards education and assessment over time (Yan & Cheng, 2015), and equally influenced by teacher career development (Coombs et al., 2018). Ideally, all teachers have sufficient skills and knowledge to evaluate the extent to which assessment materials can generate reliable and valid data (Choi et al., 2021). Across a school, the teaching body needs to be proficient in several fundamental areas of assessments:

- developing and grading rubrics for open-response tasks (Brookhart, 2011)
- using assessment data to monitor learner progress and to identify ways to enhance learning
- using assessment results in their teaching practices (Mertler, 2009).

Formative assessment

Formative assessment is regarded as the backbone of good teaching practice (Moss & Brookhart, 2009). It is important that all teachers are aware of the philosophies that underscore formative assessment and the wide range of approaches that comprise formative assessment, from questioning (Kyriacou, 2010) to observation, and to project work. In addition to providing opportunities for learners to demonstrate skills and knowledge in curricula areas, teachers should draw on cross-curricula knowledge in responding to real-world contexts. Further, they should incorporate opportunities to showcase transversal attributes such as digital literacy, collaboration, creativity and critical thinking (Paramore, 2017).

Assessment identity

Assessment literacy is a multi-dimensional construct that includes affective elements that shape the role of teachers in assessment (DeLuca et al., 2019). Teachers' feelings, emotions, values, and beliefs about assessment derive from their own personal experiences. Teachers' positive beliefs and attitudes about the role that assessment plays in improving learning, as well as confidence and belief in their assessment skills, are an important part of their identity (Gotch & McLean, 2019). Aligning teachers' assessment practices with the relevant legislative and cultural context is also of crucial importance (Birenbaum et al., 2015).

Professional development

Having support and encouragement from school leaders can greatly enhance teachers' professional development (Adie et al., 2020). Teacher assessment practices continue to be highlighted in many countries as an area in need of further professional development. In this paper, we analyse the assessment focus within the Australian Professional Standards for Teachers (APSTs). Teachers should feel free to try out innovative and experimental approaches to assessment in their professional practices, and to have access to the expertise needed to do so. Schools can create enabling structures for assessment literacy among teachers by ensuring alignment between teachers' assessment strategies and principles set out in official school policies (DeLuca et al., 2016). Continuous access to good quality professional learning opportunities will ensure that teachers employ best practices and approaches to assessment.

School environment

In supportive environments, schools create enabling structures for assessment literacy among teachers (DeLuca et al., 2016). Supportive environments are those in which school leaders clearly articulate the importance of using data to inform improvements (ACER, 2016). Data-informed decision-making is important for school improvement (Schildkamp et al., 2019) and one way to empower teachers to optimise data use in schools is by using data teams (Crone et al., 2016). These teams can help analyse assessment data, design interventions and support colleagues to use data in informing teaching practices.

Engagement of learners

In addition to developing their own assessment literacy, teachers should also support learners to gain assessment literacy. This means ensuring that learners understand success criteria and engage in self- and peer- assessment. Further, peer- and self-assessment are important for learners to become independent; teachers can facilitate this by modelling how to make judgements about the quality of work (Dixon et al., 2011). Using questioning, probing and other instructional practices can enhance the effectiveness of assessment by helping learners to identify their strengths and areas for improvement (Duckor & Holmberg, 2019).

Integration of digital assessment

Digital assessments can improve efficiency in marking, moderating, and storing information, enabling teachers to use their resources better (Oldfield et al., 2012). These assessments provide opportunities to assess complex knowledge and reasoning that may not be possible to assess through traditional, paper-based methods (Jamil et al., 2012). To make the most of digital assessment, teachers need to undergo training in digital assessment design and undertake digital assessments themselves (Walker, 2007). Greater exposure to digital assessment can also improve teachers' abilities to design digital assessments. Professional development needs to constantly evolve as digital technologies evolve.

Conclusion

Assessment literacy has clearly evolved significantly over time and continues to evolve. While much of the current work in assessment literacy focuses on using assessment, there is much less focus on designing assessment or interpreting its outcomes, and the kind of competencies that teachers need to have to succeed in designing, implementing and enhancing assessments (Koh & Chai, 2016).

Equally, while digital technologies create new opportunities for assessment, very little attention has been paid to how teachers can make the most of digital tools in their assessment practices (Whitelock, 2011). More research is needed to fully evaluate how the changing nature of assessments is impacting teachers' assessment literacy.

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