Developing University Students' Assessment Literacy Theory and Practice

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Abstract

Assessment literacy skills are increasingly recognized as being important for student success in higher education. However, as a field of study, it is not well-researched except in the context of language assessment. This paper delves into critical theoretical underpinnings and practical strategies that can be used to develop assessment literacy among university students. Based on a constructivist view, this paper discusses how social interactions and cultural practices interplay to shape students' conceptual understanding of assessment. It argues that effective assessment literacy embodies understanding the purposes of assessment, interpreting criteria, and using feedback to improve constantly. This means integrating the development of assessment literacy into curriculum design using experiential learning and developing self-regulated learning strategies. The goal is to provide a primer for university educators and instigate reflection and debate on how best to support students when engaging with diverse assessment practices to enhance their academic achievement and skills for lifelong learning.

Keywords: assessment literacy, competence-based assessment, pedagogy, higher education, feedback

Introduction

Assessment literacy is a necessary skill set for contemporary students in higher education. It is essential to facilitate and enhance learners' academic achievement by equipping them with the knowledge, understanding, and competency required to engage successfully with university assessment tasks (Andrade, 2005). Effective assessment literacy skills allow students to evidence their achievement(s) more effectively, potentially leading to higher grades and better overall learning outcomes.

In recent years, the importance of assessment literacy in enhancing student achievement of prespecified learning outcomes (Holmes, 2019a) and promoting educational equity (Andrade, 2005) has gained traction in higher education and assessment research (Man et al., 2022) though, other than in the field of language assessment literacy, it remains an under researched area. Assessment literacy is a multifaceted construct that involves students understanding assessment's principles, practices, and purposes. It encompasses a range of different competencies, including, among other things: understanding the purposes and types of different assessments, interpreting assessment requirements, and marking criteria correctly, using marking criteria to inform learning, and receiving and acting upon feedback i.e. utilizing the information from feedback to inform future learning (McMillan, 2007; Sadler, 2010). It includes comprehending and responding to various assessment types and their intended functions, interpreting assessment requirements correctly and accurately, and using information from assessments for development and improvement (McMillan,

2007). Well-developed assessment literacy allows students to identify the goals, or intended goals, of the various assessments they will engage with and understand the rationale for the assessment method used by the assessor. When students understand the purposes, processes, and requirements of assessment, both generally and specifically, about the competencies or learning outcomes they are being assessed against, they can comprehend better and successfully engage with the different types of assessments they encounter throughout their academic journey (Smith et al., 2011). Assessment literacy encourages the development of metacognitive skills, self-regulated learning strategies, and a growth mindset, all of which are arguably necessary for academic success and future success in employment (Dweck, 2006; Flavell, 1979; Yeager & Dweck, 2019). Assessment literacy development is a dynamic, iterative process that occurs over time through students' engagement with assessment practices (Andrade, 2005). This involves both formal instruction and experiential learning experiences. I would argue that we cannot assume that contemporary students will develop 'good' assessment literacy skills without either being taught them or provided with clear opportunities to develop them within the curriculum. One of the main reasons is that the range and type of assessments used in higher education have changed considerably, from examinations and essays being the main dominant form to using a wide range of alternative methods offering greater authenticity, inclusivity, relevance, and validity. Assessments involving, among other things, presentations, group projects, individual projects, reports, info graphics, practical work, and professional conversations

require students to have a different skill set to be successful in examinations. Yet lecturers cannot assume that students will know how to successfully engage with various assessment types. Without well-developed assessment literacy, students may struggle to adapt to different assessment formats or contexts, thus limiting their ability to demonstrate their full range of knowledge, skills, and competencies (Shepard, 2000) and hindering their achievement.

Theoretical Framework

Different theoretical frameworks provide insight into the concept of assessment literacy. For this paper, constructivism will be used. Constructivism suggests that learning is an active process of constructing and co-constructing, meaning through interaction with the environment and others (Holmes, 2019b; Piaget, 1952; Vygotsky, 1978). From this perspective, assessment literacy may be viewed as a cognitive process whereby students develop their understanding of assessment's purposes, practices, and processes through their experiences and interactions with others, including both lecturers and their peers, in educational settings. When used as a lens to view assessment literacy, constructivism focuses on its social and cultural dimensions, emphasizing the role of social interactions, language, and cultural practices in shaping students' understanding of assessment. Although the development of 'good' assessment literacy is an individual cognitive process, from a constructivist perspective, it can be argued that it may not be able to be taught solely by the lecturer as it is influenced by a range of factors outside of the lecturer's control.

These factors include preexisting individual and collective expectations and understandings about assessment, ongoing peer interaction(s), and informal out-of-classroom discussions. Existing understandings and expectations will, for a typical student entering university aged 18, be heavily influenced by their 13 or so years of compulsory education. Arguably, schools and their assessment systems, with a reliance on formal examinations and tests based on prescriptive syllabuses with correct and incorrect answers, do not adequately prepare learners for the different and diverse forms of assessment used within universities (Money et al., 2009). Compulsory education does not typically encourage learners to recognize that knowledge and understanding of phenomena may be contested, subjective, and incomplete, yet within higher education, these assumptions are taken as given. It must also be recognized that viewing assessment literacy through a constructivist lens requires teachers to acknowledge that some students may choose to disregard or downplay university/lecturer guidance about assessment and, instead, place as much, or even more significant, reliance on the information provided by their peers, from social media, and informal learning groups, even though these sources of information may sometimes be less accurate, and potentially incorrect. Lecturers should recognize that this may lead to confusion and misunderstanding among learners. To ensure that students are fully cognizant of and able to be successful in assessment practices, teaching staff needs to consider developing their assessment literacy collaboratively and constructively so that learners may recognize what is valid and 'correct' and accurate sources of assessment information. It also follows that different academic disciplines and pedagogical approaches may do this differently, yet the fundamental components of assessment literacy will remain the same, regardless of the disciplinary area.

Methodology

An extensive online literature search was conducted, focusing on peer-reviewed articles and books published in the last 20 years. The search terms included "assessment literacy," "student assessment literacy," "assessment for learning," and "higher education assessment." Key sources older than 20 years were included when foundational or highly relevant. The literature was critically analyzed to identify trends, gaps, and key themes in assessment literacy. This analysis informed the theoretical framework and the design of the study's primary data collection tools.

Fundamental Components of Assessment Literacy

In its very broadest sense, the term 'assessment literacy' may refer to anything that effectively contributes to students' proficiency in navigating higher education assessment practices. A cohesive definition is provided by Smith et al. (2011), who articulate it as

> Students' understanding of the rules surrounding assessment in their course context, their use of assessment tasks to monitor or further their learning, and their ability to work with the guidelines on standards in their context to produce work of a predictable standard (Smith et al., 2011, pp. 4546).

They suggest that this comprises three elements. Firstly, students need to understand the *purposes of assessment* and how it connects with their learning trajectory. Secondly, they need to be aware of the *assessment processes* and how they might affect their capacity to submit responses that are on task, on time, and completed with appropriate academic integrity. Thirdly, *opportunities for learners to practice judging their responses to assessment tasks must be provided* so that students can learn to identify what is good about their work and what could be improved (Smith et al., 2011). Each of these three is important for students to develop effective assessment literacy skills, and they are briefly considered here.

Understanding the Purposes of Assessment

With respect to students' understanding of the purposes of assessment, learners need to be able to comprehend the different purposes of higher education assessment. This includes the three main purposes: formative, summative, and diagnostic assessment (Black & Wiliam, 1998). They should understand that assessments serve multiple, sometimes contradictory functions (Taras & Davies, 2012), including the assessment *of* learning for grading purposes to let the student know their current level of attainment and assessment *for* learning to provide developmental feedback for future learning. These purposes include, among other things: providing feedback, diagnosing learning needs, guiding instruction, making judgments about the quality of work, and informing educational decision-making (Brown et al., 2013).

Understanding the Processes of Assessment

Learners need to be aware of and understand the different processes used within universities to accurately interpret assessment criteria, requirements, and the required performance expectations (Sadler, 2010). This involves aspects such as understanding the grading criteria used to mark work, identifying the key requirements of different types of assessment (such as examination, essay, report, info graphic, and presentation), identifying and understanding module-specific assessment requirements, and being able to produce assessment submissions that meet the required criteria and academic standard within the required timescale.

Providing opportunities for students to learn to identify what is 'good' about their work through practicing judging their responses to assessment tasks. Assessment literacy requires students to have the capacity to utilize information from assessments to inform future learning and decision-making (Shepard, 2000) i.e. learning to identify what is good about their work and what could be improved in future work. This means they must recognize the need to engage with feedback from the assessor, their peers, or other stakeholders and act upon it. Students need to understand the purpose of feedback, how to interpret feedback from multiple sources, and how to use it to

improve their learning (Hattie & Timperley, 2007). Lecturers must provide clear opportunities, places, and spaces within the curriculum for learners to practice judging their responses to assessment tasks so they may learn to recognize what is 'good' about their work. Formative, low-stakes assessment opportunities may need to be designed into the curriculum to facilitate the development of competency in analyzing assessment results, identifying areas for improvement, and setting achievable and manageable goals for learning. This enables students to take proactive steps to address learning gaps (Nicol & Macfarlane-Dick, 2006).

How do Assessment Literacy Skills Help Students?

A wide range of benefits of well-developed assessment literacy skills are identified in the literature. The most important ones are summarized below.

Promoting Lifelong Learning

Assessment literacy contributes to academic success in a learner's current program of study, yet also to them being a lifelong learner (Riley & Claris, 2008). When students develop competency in assessment practices, they are better equipped to succeed and engage in learning and skill development beyond formal sessions (Shepard, 2000). Assessment literacy can play a crucial role in developing lifelong learning skills, attitudes, and values. Lifelong learning is about acquiring knowledge and developing the capacity to learn, adapt, and grow throughout one's life (Laal, 2011). It is, arguably, necessary for success after university. Assessment literacy can play an essential role in promoting lifelong learning skills, attitudes, and values among students through, for example, helping to develop confidence in their ability to utilize feedback to achieve current learning goals and identify and set future goals. Such goals may be beyond their current program of study. Facilitating the development of critical thinking and problem-solving skills and encouraging self-regulated learning contributes to the development of the intellectual engagement necessary for future, lifelong learning.

Development of a Growth Mindset

Assessment literacy encourages the development of a growth mindset, the belief that abilities and intelligence can be developed through effort and perseverance (Dweck, 1986, 2006). When students understand that assessments are not just measures of existing competence but opportunities for growth and improvement, they should be more likely to approach learning with a positive attitude, a willingness to take on challenges and be more resilient to setbacks, such as failing an assignment. By recognizing that lecturer-provided feedback is a source of information for improvement rather than a judgment of their capabilities, students should be able to use feedback to improve their academic achievement. By using feedback developmentally, learners can recognize that setbacks and failures are opportunities for further learning and development rather than insurmountable obstacles and catastrophes. This mindset shift can encourage a commitment to continuous improvement and self-development.

Facilitating the Development of Critical Thinking and Problem-Solving Skills

Assessment literacy promotes the development of critical thinking and problem-solving skills. Through actively engaging with assessment tasks, students learn to critically analyze information, evaluate evidence, and draw reasoned conclusions (Ennis, 2018). Over time, as they progress to a degree, they develop the ability to identify patterns, connections, and discrepancies in their learning, leading to deeper understanding and insight. Assessment literacy can enable students to more critically evaluate information and different sources, assess their learning needs, and develop better problem-solving skills (Topping, 1998).

Promoting the Development of Self-Regulated Learning

Assessment literacy contributes to developing self-regulated learning skills, encouraging and empowering students to take ownership of their learning and become self-directed learners (Flavell, 1979). When students understand assessment criteria and expectations, they can better set clear learning goals, plan their study and learning strategies, and monitor progress effectively. They learn to manage their time, resources, and effort better to achieve specific learning goals. Assessment literacy also promotes metacognitive awareness, the ability to reflect on and regulate one's learning process (Nicol & Macfarlane-Dick, 2006). Students learn to evaluate their learning strategies, identify areas for improvement, and adjust and improve their approaches to learning accordingly.

Developing Curiosity and Intellectual Engagement

Assessment literacy develops curiosity, intellectual engagement (Shepard, 2000), and enthusiasm for learning. When students recognize and understand that one of the purposes of assessment is to provide learning and feedback opportunities rather than just act as a judgment of existing achievement, they should become more motivated to engage with learning activities for personal and professional development and explore new ideas and concepts both within and outside of the curriculum. This helps develop a sense of intellectual curiosity and a desire to deepen their understanding of the world around them. Assessment tasks that encourage inquiry, exploration, and experimentation may particularly contribute to developing intellectual curiosity and act as a springboard for student interest.

Influencing Assessment Processes

By developing critical thinking skills and a deeper understanding of assessment principles, students may become agents of change, providing feedback to lecturers about the suitability and adequacy of assessment processes and practices. This may enable them to challenge inequitable assessment practices (Black & Wili am, 1998) and advocate for fairer, more authentic, inclusive assessment methods. Through doing so, this potentially allows them to contribute to the creation of more equitable and inclusive learning environments.

Strategies to Develop Students' Assessment Literacy

Actual teaching or facilitation of developing assessment literacy skills through a constructivist pedagogy (Holmes, 2019b; Zajda, 2011) is important in enabling students to understand assessment processes, purposes, and practices in higher education. At a superficial level, this may involve explicit instruction on assessment concepts, discussions about assessment purposes, guidance on interpreting marking/grading criteria, and using feedback effectively (McMillan, 2007). Lecturers should provide students with clear explanations of different assessment types, their purposes, and the criteria used to evaluate performance (Boud, 2010). Student learning should be scaffolded, beginning with basic concepts and gradually progressing to more complex topics. Having and using clear, unambiguous assessment briefs, using clear grading criteria, providing exemplars, and explaining why an assessment method has been chosen to assess the specific competence(s) or learning outcome(s) all contribute to developing students' assessment literacy. However, to do it well requires more than this. The following summarizes some of the critical elements of developing assessment literacy.

Design a Constructively Aligned Curriculum

Integrating assessment into curriculum design ensures alignment between learning objectives/outcomes, instructional activities, and assessment modes (Biggs & Tang, 2011). Assessments should be aligned with the program learning

goals/competencies and provide students with opportunities to demonstrate their understanding, knowledge, and competency. This involves carefully designed assessment tasks used at key points within the program of study. Assessments that cater to learners' diverse needs and interests allowing for differentiation and personalization (Andrade, 2005), should be used where possible. Assessment literacy development should be embedded at the curriculum design stage, emphasizing its importance rather than seeing it as a bolt-on to the existing curriculum.

Encourage Experiential Learning Experiences, Peer Assessment and Collaboration

Learning through experience, through structured and semi-structured learning opportunities such as engaging in formative low-stakes assessment tasks, providing peer feedback, and reflecting on one's learning (Jasper, 2013; Moon, 2004) contribute to the development of assessment literacy. Using collaborative learning approaches (Barkley et al., 2014) alongside peer assessment is also helpful. Peer assessment and collaboration provide students valuable opportunities to engage in dialogue, receive feedback from their peers, and deepen their understanding of assessment processes (Man et al., 2022). To promote peer assessment and collaboration, lecturers should create structured opportunities and allow time within the curriculum (Arter & McTighe, 2001). This may involve designing peer review protocols, training on effective feedback practices, and establishing norms for respectful, ethical, inclusive, and constructive peer interactions. Additionally, lecturers should scaffold peer assessment activities, beginning with low-stakes tasks and gradually increasing complexity as students become more proficient (Topping, 1998). A constructivist approach would suggest that learning activities that provide opportunities for students to develop their assessment literacy in authentic contexts (Ashford et al., 2013), receive feedback on their performance, reflect on their learning process, and, through doing so, develop their knowledge, skills and understanding experientially are likely to be more effective than simple didactic instruction.

Engage Students in Personal Goal Setting, Track Progress, and Encourage Self-Assessment and Reflection

Goal setting, progress monitoring, self-reflection, and self-assessment can allow students to take ownership of their learning journey (Zimmerman & Schunk, 2007). In addition to the formally articulated learning course/program objectives or goals in the form of competency statements or learning outcomes, students should be encouraged to set their own personal learning goals to track their progress towards them and assess their achievement. In doing so, they can develop better engagement, a sense of achievement or accomplishment, and improved motivation.

Provide Timely and Constructive Developmental Feedback

Feedback plays a central role in the assessment process, providing students with valuable information about their strengths and areas for improvement (Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2006). Timely and constructive developmental feedback is fundamental to effective assessment practice (Gibbs, 1995; 2006; Merry et al., 2013; O'Donovan et al., 2016). Providing constructive, clear feedback that is specific, actionable, aligned with learning objectives or program competencies, and focuses on areas for improvement while recognizing students' strengths and achievements (Nicol & Macfarlane- Dick, 2006) should be integral to the teaching team's practice. Feedback processes should encourage active student engagement with all sources of feedback, whether formal or informal, encouraging reflection on performance and using this to set goals for improvement (Sadler, 2010).

Create opportunities within the Curriculum for Feedback Dialogue and Encourage Students to Ask Questions about Assessment

Engaging in discussions with learners about feedback encourages dialogic exchange (Hattie & Gan, 2011; Price et al., 2011). Through asking students about their views and perspectives, addressing their concerns, encouraging them to reflect on feedback, and, importantly, working collaboratively and collectively to co-construct understanding about assessment, lecturers can facilitate an environment where feedback acts as a driver for growth, development, and lifelong learning. An approach of the lecturer as facilitator, rather than the lecturer as the source of all knowledge, encourages open dialogue and inquiry, helping to empower students to seek clarification, express concerns, make suggestions, and engage in reflective discourse (Sadler, 2010).

Use Rubrics, Exemplars, and Explicit Assessment Briefs with Clear Feedback

Marking rubrics and exemplars along with clear, detailed, and unambiguous assessment briefs that are understandable by students provide them with the criteria for success and concrete models of exemplary work or work of the required standard for success (Andrade, 2005; Moss et al., 2006). By helping to deconstruct learners' preexisting/pre-university assessment experiences and misconceptions and outlining the required standards and expectations, rubrics and exemplars allow students to recognize better what they are expected to do. Collectively, assessment rubrics, exemplars, explicit assessment briefs, advice, guidance, and support to help students respond to feedback form the basic building blocks from which assessment literacy can be developed.

Use Authentic Assessment Tasks

Authentic assessment tasks require learners to apply their knowledge and skills to solve real world problems and help develop creativity, innovation, and adaptability (Pellegrino et al., 2001). Authentic assessments require students to produce work that a discipline graduate could be expected to do in their occupation (AshfordRowe et al., 2013; Gulikers et al., 2004). Authentic assessment tasks can contribute to better student engagement with assessment processes because they can see the relevance of the specific assessment to their future career. In doing so, this can lead to improved motivation and better achievement.

Challenges and Barriers to Developing Assessment Literacy

Despite its importance, developing assessment literacy can be challenging for students and lecturers. Some of the challenges faced by students include ambiguity, or perceived ambiguity, in assessment criteria, the hidden curriculum, subjectivity in lecturers' assessment practices, misinterpretation of feedback, misunderstanding of the purpose of feedback, an inability to contextualize and integrate feedback into their personal view and act upon it, disagreement with feedback, emotional fear of failure, negative emotional responses to feedback, and limited pre-university exposure to diverse assessment methods (Giroux & Penna, 1983; Hattie & Timperley, 2007; Hinchcliffe, 2020; Moss et al., 2006; Shepard, 2000; Zeidner, 2007).

Addressing these challenges requires intervention from lecturers. However, lecturers may be equally challenged. They may not always have the requisite skills to develop learners' assessment literacy, or, more commonly, they may not see it as being part of their role or responsibility. They may mislabel it as generic 'study skills' or assume that students will somehow develop good assessment literacy independently without the lecturer's involvement. They may believe that using time to develop assessment literacy rather than deliver content can dilute the curriculum.

The Hidden Curriculum and Clarity of the Terminology Used in Assessment Criteria

One of the primary challenges students face, particularly those from a widening participation background, who may be more impacted by it, is the hidden curriculum (Gireaux & Penna, 1983; Hinchcliffe, 2020; Jackson, 1968). Part of the hidden curriculum involves the taken-for-granted and often long-held assumptions lecturers may hold about assessment requirements and grading criteria that are not formally articulated to learners. For example, an assessor may feel that certain journals or authors should not be referenced and award a lower grade to students with such citations. Alternatively, they may expect a written assessment artifact to contain several references from journals of a certain 'quality.' Some may dislike direct quotations and downgrade work containing them. Some may expect a student's referencing to be perfect, marking down if a full stop or comma is in the wrong place, whereas others may not, as they look for the spirit rather than the letter of referencing in student work. Yet if these taken-for-granted assumptions are not articulated to students, how can they be expected to know about or adhere to them? When used with detailed marking rubrics and formative developmental feedback, articulating assessment requirements through explicit assessment briefs can help demystify these aspects of the hidden curriculum. Assessment criteria provide the standards against which student work is evaluated, guiding understanding of what is expected. However, when criteria lack clarity or are written in a format or use terminology that students do not understand, they may struggle with the expectations and benchmarks for success, hindering their ability to evidence their attainment.

Ambiguous or vague criteria can lead to confusion, frustration, and inequities in student achievement (Moss et al., 2006). However, no matter how clear the criteria are to the academic who may have developed them, they may not be clear to the learner. For example, assessment criteria that use terminology such as 'excellent,' 'very good,' and 'good' are open to interpretation and, as such, may not be adequate. An academic's concept of 'excellent' work may be far removed from an undergraduate's. A criterion statement that work should be 'highly original' may make sense to an academic, yet not to a student.

Similarly, a statement that work should be of a 'high standard' is meaningless to a learner if they do not know a high standard. As far as possible, marking criteria should avoid using words or phrases open to subjective interpretation by different assessors and may be interpreted differently by students. This may require teaching teams to collectively develop and agree on marking criteria and work with students to ascertain if they understand them.

Feedback Not Being Acted Upon

Students may feel that feedback is not worth acting upon as they perceive it to be assignment-specific (Duncan, 2007), and they will not be doing that assignment again; hence, they will ignore it. They may not see links from one assessment and feedback process to another nor recognize that it is their responsibility to convert the assessor's comments into actionable feedback. Responding to feedback is a fundamental component of assessment literacy, yet there is good evidence to suggest that for many students, their engagement with and use of it is often poor (Crisp, 2007; Duncan, 2007; Murtagh & Baker, 2009; Orsmond et al. 2005; Price et al. 2011). Effective feedback provides specific information about the strengths and weaknesses of student work, highlights areas for improvement, and offers actionable suggestions or recommendations for improving future work. However, students may struggle to identify actionable insights (Bloxham & Campbell, 2010). They may regard feedback as more of a judgment of their performance rather than an opportunity for learning and growth. Misinterpretation of feedback can lead to disengagement, lack of motivation, and perpetuation of misconceptions, misunderstandings, and lower achievement (Hattie & Timperley, 2007). Lecturers should not assume that students are all the same. Feedback may need tailoring to different student groups, particularly as they progress through their program of study (Henderson et al., 2021).

Fear of Failure and Assessment Anxiety

Fear of failure and assessment anxiety can impede students' engagement and hinder their development of good assessment literacy skills. Assessment anxiety is typically characterized by apprehension, worry, and physiological arousal in assessment situations. This may impair learners' performance and undermine their confidence and achievement. Some students may try to avoid assessment tasks they perceive to be challenging due to a fear of failure. This may lead to avoidance behaviors, disengagement, late submission of work, reduced self-efficacy, and limited opportunities for growth and learning (Zeidner, 2007).

Limited Exposure to Diverse Assessment Methods

Students' exposure to diverse assessment methods may be limited, particularly in the first year of university. This can lead to a narrow understanding of assessment practices. As previously discussed, traditional assessments, such as examinations and essays, have dominated higher education, and some students may have only been exposed to these assessment methods before commencing university.

Summary

This paper has summarized the benefits for students with well-developed assessment literacy skills. As such, an argument can be made for universities to consider placing greater emphasis on developing assessment literacy within taught programs.

Conclusion

Developing students' assessment literacy requires input from lecturers to create environments that support their understanding and mastery of assessment principles, practices, and processes. I would argue that within a coherent academic program, this needs addressing at the program rather than module level. It needs embedding, not just to exist as an additional 'bolt-on' to existing teaching that some staff and students may regard as less important than disciplinary knowledge and skills. It requires a multifaceted strategic approach that encompasses explicit instruction, constructively aligned curriculum design, exemplars, dialogic feedback provision about the purposes and use of feedback, opportunities for self-assessment, peer collaboration, and constructivist/constructivist pedagogical approaches that inculcate students into the expectations of university assessment requirements. By adopting these approaches, lecturers can create learning environments that enable students to develop the assessment literacy skills they need to be successful to evidence their achievement to the best of their ability.

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