Implementing first-year assessment principles: An analysis of selected scholarly literature

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Abstract

Assessment plays an important role in students’ learning as students often frame their learning around their assessment tasks. Well-designed assessment can be used to facilitate first-year students making their social and academic transition to university. In 2009, Professor David Nicol prepared a framework for first-year assessment practices that included 12 principles. In this study, these principles were revisited and used to analyse papers from 2013 to 2016 in the journals: 'Assessment & Evaluation in Higher Education', 'The International Journal of First Year in Higher Education' and 'Student Success'. The purpose of the study was to determine how current literature addresses Nicol’s first-year assessment principles, whether there were any issues in implementing them and whether anything new is emerging in the field. Based on this analysis, proposals are made for modifying the principles and recommendations are made for future research.

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Introduction

Assessment is one of the most important features in curriculum design as “it powerfully frames how students learn and what students achieve. It is one of the most significant influences on students’ experience of higher education and all they gain from it.” (Boud & Associates, 2010, p. 1). Assessment is particularly critical in first year, where it can be used to help students transition into university by developing their foundational skills, guiding them towards effective study and supporting them in becoming independent learners (Gill, 2015). High quality assessment and feedback can reassure first-year students about their progress, maintain or stimulate interest in their studies, and help them to integrate into an unfamiliar environment (Nicol, 2009). While well-structured first-year assessment can play a significant role in helping students assimilate, poorly designed assessment can make students feel incompetent or lead to attrition (Horstmanshof & Brownie, 2013; Lizzio & Wilson, 2013).

In 2009, David Nicol produced a report on first-year assessment for the Scottish Enhancement Theme of First Year Experience that identified twelve best-practice principles for first-year assessment and feedback. The research for this paper undertook a meta-analysis of papers published on first-year assessment in three journals in the period 2013–2016, showing how the principles were implemented, identifying any issues and proposing areas for future research. This paper will firstly discuss the original principles, then present the methodology used, followed by the analysis for each of the principles and concluding with a summary of draft principles for first-year assessment practice.

Nicol’s principles for first-year assessment

Assessment forms an important part of students’ learning and many universities and researchers have proposed principles for assessment. One of the most notable of these was Boud & Associates (2010) seven propositions for assessment reform in higher education. Nicol’s (2009) framework was the most substantial work that the author could find that specifically addressed principles for first-year assessment, however. The framework was developed as part of the Scottish Enhancement Theme on the First Year Experience. Nicol expanded on his previous research, incorporating ideas from published studies of universities’ policies and practices that had been shown to be successful at the time.

The framework integrated 12 principles into two dimensions: engagement-empowerment and academic-social. The Academic-Social dimension reflects the importance of students integrating both academically and socially into university culture so that they develop a sense of belonging (Engstrom & Tinto, 2008; Nicol, 2009; Smith, Worsfold, Davies, Fisher, & McPhail, 2013). The Engagement-Empowerment dimension reflects the necessity of students engaging with their learning in order to empower them to take responsibility for their own learning and develop their own social cultures (Nicol, 2009). It is about giving students opportunities to become independent learners who are able to self-regulate and evaluate their own learning (Boud & Associates, 2010; Nicol, 2009). Well-designed first-year assessment has the potential to “not only align our educational intentions and impact, but also to work collaboratively with new students to develop an evidence-based culture of success” (Lizzio & Wilson, 2013, p. 393).
Figure 1 shows the 12 principles depicted in Nicol’s framework. These will be discussed in more detail later in the paper, together with the results of the meta-analysis.

**Methodology**

The research for this study was started in early 2017 and it was decided to include literature from the three previous years (2013-2016) in the meta-analysis as reflecting the most current literature available at the time. The literature was limited to three journals to make the research manageable and the three journals were chosen to ensure a focus on both assessment and the first-year learning experience.

The three journals selected for analysis were:

- *Assessment & Evaluation in Higher Education* (AEHE), chosen as it is the primary journal on assessment in the higher-education sector;
- *The International Journal of First Year in Higher Education* (IJFYHE), chosen because of its focus on first-year student learning in higher education; and
- *Student Success*, chosen as IJFYHE began publishing under that name in 2015.

The ProQuest Database was used to search for papers in AEHE and IJFYHE using the filter of ‘Anywhere except in the full text’ and the dates 1 January 2013 to 31 December 2016 for AEHE and 1 January 2013 to 31 December 2015 for IJFYHE. AEHE was searched for papers that used the term ‘first year’ and IJFYHE was searched for the term ‘assessment’. The Journal *Student Success* was not in ProQuest at the time, so its own search engine was used for the period 2015–2016.
The research was undertaken in three phases:

i. The first entailed screening the papers for their relevance to first-year assessment. Generic papers on assessment, papers about evaluating first-year programs or papers on the first year in post-graduate degrees were excluded, thus reducing the number to 34 as shown in Table 1.

ii. The second phase was a detailed analysis of each paper to identify the assessment methods used and to map the principles from Nicol’s framework (2009) focussed on in the paper.

iii. In the third phase, the papers were thematically coded for the 12 principles using the tool NVivo®. The results from the first and second phases were then compared and, where there were differences, the paper was re-analysed and the results adjusted.

There are limitations to the research in that the analysis was undertaken by one person using only three journals. To compensate for this, the three stages of analysis mentioned above were used, but others may have coded differently or bias may have crept into the analysis.

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**Table 1: Journal papers considered for analysis**

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**Overview of papers and principles upon which they focussed**

Figure 2 shows the papers used in the analysis and the thematically coded principles for each paper.

The next section articulates the analysis of the papers against each of Nicol’s principles. Where an assessment practice spans more than one principle, it has only been discussed once, where the author thought it was most appropriate.

**Recommendations from papers using principles for first-year assessment**

**Principle 1: Help clarify what good performance is (goals, criteria, standards)**

Although academics provide students with assessment criteria for required work, first-year students often have difficulty understanding requirements, thus making it difficult to judge their own efforts and produce high-quality results (Nicol, 2009). Twenty-three papers (67.6%) focused on this principle.

Lizzio and Wilson (2013) suggest that it is not only students’ performance outcome or grade that is important but also the amount of effort that the students need to carry out an assessment task.
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**Figure 2: Papers and Principles**
Implementing first-year assessment principles: An analysis of selected scholarly literature

The cognitive load on the student could be a result of the intrinsic nature of the task or it could be because of the extraneous load that students experience because of poorly-defined tasks that lack clarity. Clear guidelines are needed to reduce cognitive load on first-year students especially as they may not yet have the required cognitive schema for university study (Lizzio & Wilson, 2013).

One way of developing a shared understanding of what good performance entails, suggested in many of the papers, was to use exemplars. Students were provided with exemplars of different standards and asked to use rubrics (or criteria) to evaluate them (Baker & Zuvela, 2013; Bell, Mladenovic & Price, 2013; Bird & Yucel, 2013, 2015; Smith et al., 2013; Yucel, Bird, Young & Blanksby, 2014). Authors reported that the process helped students develop their ability to judge their own assessment tasks or those of peers. Both Baker and Zuvela (2013) and Walker and Hobson (2014), however, warn against showing exemplars as models, as students may copy them too closely. Walker and Hobson (2014) proposed that students should be taught the processes required to achieve the expected quality so that they better understand how to reach the required standard.

No issues were identified with this principle with authors agreeing that the time spent on developing a shared understanding of good performance helped students become successful learners.

**Principle 2: Encourage ‘time and effort’ on challenging learning tasks**

Nicol (2009) maintains that it is essential that students be actively engaged in their learning and spend time learning both in and outside of the classroom. Carefully designed assessment facilitates student learning in a coherent, integrated way (Nash, Crimmins & Oprescu, 2016; Nicol, 2009).

This principle was evident in 19 of the papers studied (55.9%), with most authors staging assessment tasks so that students receive feedback on one task or part of a task before undertaking the next. Activities scheduled appropriately throughout the semester thus give students opportunities to practise skills required for assessment (Baker & Zuvela, 2013; Bell et al., 2013; Leung, Hashemi Pour, Reynolds & Jerzak, 2015).

**Principle 3: Deliver high-quality feedback information that helps learners to self-correct**

Feedback will have little impact if it is poor quality or if students do not know how to use it (Nicol, 2009). Nineteen papers (55.9%) focussed on high-quality feedback. If students receive a lower-than-expected grade, they may become discouraged or leave university (Horstmanshof & Brownie, 2013; Potter & Bye, 2014; Robinson, Pope & Holyoak, 2013). It is therefore essential that students be supported and feedback is timely, constructive and encourages them to persist and become more self-aware (Horstmanshof & Brownie, 2013; Lawrie et al., 2013). Denton and Rowe (2015) suggested that feedback needs to include interaction and found that using a transmission form of feedback, where the lecturer provides feedback without any interaction, did not improve students’ performance.

Marker reliability and quality were the other foci for papers coded to this principle. Some papers reported on moderation meetings held prior to the start of semester to discuss rubrics and exemplars with tutors. The purpose was to ensure that everyone understood the standards, determine how they would mark and how they would explain the criteria and rubrics to students (Bird & Yucel, 2013, 2015; Iannone & Simpson, 2015; Yucel et al., 2014). Menéndez-Varela and Gregori-Giralt (2016) found that rubrics helped provide guidance to students on what they needed to do in the future, arguing...
that rubrics should be an instructional resource supporting learning, rather than a ‘scoring tool’.

The biggest issue in providing useful feedback seems to be that quality is compromised if academics are burdened with short turn-around times and/or too many students (Crimmins et al., 2016; McDonnell & Curtis, 2014; McNaught & Benson, 2015; Palmer, Levett-Jones, Smith & McMillan, 2014).

**Principle 4: Provide opportunities to act on feedback**

Nicol (2009) suggests that this principle requires creating opportunities for students to receive early feedback (on drafts or formative tasks) and then making sure that students engage with the feedback and determine how they can use it in future assignments. Nineteen papers (55.9%) described scaffolded assessment tasks that implemented this principle.

In their study on students’ perceptions of feedback, Robinson et al. (2013) found that very few students reported using their feedback. They proposed the use of positive feedback that offers reassurance and provides advice on how to improve. There is a need to explain how students should interpret and use feedback (Baker & Zuvela, 2013; Wharton, 2013). Socratic questioning (in comments or in class) may be valuable in initiating dialogues about feedback (Wharton, 2013).

One way of ensuring that students act on feedback is to oblige them to interact with the feedback before they undertake the next task. Crimmins et al. (2016), for example, included a reflection on feedback activity where students were asked to determine what the feedback indicated and identify areas for improvement. This was then used to formulate questions for their tutor in a face-to-face session. Bird and Yucel (2015) implemented an in-class exercise in which students identified issues requiring action and developed an action plan to be submitted with the final report showing how they planned to address the issues.

**Principle 5: Ensure that summative assessment has a positive impact on learning**

Nicol (2009) defined summative assessment as assessment that ‘is concerned with making judgements about the extent to which students have achieved the learning outcomes specified in the curriculum’ (p. 35). Only six papers (17.6%) were coded against this principle.

Only two of these papers discussed examinations. Surgenor (2013) found that when examinations comprised a large percentage of the final grade in a subject, students perceived assignments through the year as ‘precursors to the real assessment’ rather than learning opportunities (p. 299). However, Iannone and Simpson (2015) found that an oral summative assessment task was effective for learning, as tutors could address specific misconceptions at the time of the oral.

Most assessment in first year will be both summative and formative: summative because it is graded and may not need to be repeated, and formative because it has the potential to build skills and learning for future tasks (Wharton, 2013). This principle might be rephrased as: Ensure that all assessment has a positive impact on learning.

**Principle 6: Encourage interaction and dialogue around learning (peer and teacher-student)**

Nicol (2009) maintains that lecturers need to provide a variety of opportunities for students to work with their peers and academic staff to promote social bonding and critical thinking. This principle was a common one with 13 papers (38.2%) addressing it specifically.

Peer assessment was integrated into many of the assessment initiatives studied (Bird & Yucel,
Implementing first-year assessment principles: An analysis of selected scholarly literature

2013, 2015; Hodgson, Chan & Lui, 2014; Horstmanshof & Brownie, 2013; Kearney, Perkins & Kennedy-Clarke, 2016; McDonnell & Curtis, 2014; Mostert & Snowball, 2013; Yucel et al., 2014). Peer review is recommended to help students understand the marking criteria or provide feedback to students before submitting their final task. McDonnell and Curtis (2014) used an adaption of the peer review process which they termed ‘democratic’. In this schema student pairs evaluated their own and the other’s work and then met with the lecturer to determine the mark each should get. McDonnell and Curtis argue that the incorporation of dialogue helped students to self-regulate and improved subsequent work.

Providing quality critique in peer review does not come naturally to students (Hodgson et al., 2014), so it is imperative to provide opportunities for discussion of criteria and standards and to teach students evaluative skills if peer review is to be effective (Hodgson et al., 2014; Yucel et al., 2014). Mostert and Snowball (2013), for example, found that students believed they had put effort into providing feedback but did not receive adequate feedback in return.

Peer review, although challenging to implement, has been found to be useful for helping students become independent learners who are able to judge their own work and that of others. Grading students’ peer reviews may help to improve the effort students expend and the quality of their critique (Hodgson et al., 2014; Kearney et al., 2016). Mostert and Snowball (2013), for example, found that students believed they had put effort into providing feedback but did not receive adequate feedback in return.

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Principle 7: Facilitate the development of self-assessment and reflection in learning

Nicol (2009) suggested that providing students with formal opportunities for self-assessment can help them become autonomous learners capable of judging their own work. Students need opportunities to practice judging their own work to develop their assessment literacy (Smith et al., 2013). Nine papers (26.4%) addressed this principle.

Self-assessment and reflection were implemented in various ways. Kearney et al. (2016) developed their Authentic Assessment for Sustainable Learning (AASL) model that combined lecturer assessment (40%) with self-assessment (30%) and peer assessment (30%) to provide a summative grade. Self-assessment was undertaken after peer review, which allowed critical comparison to their peers. Crimmins et al. (2016) developed a model for written, reflective and dialogic feedback (WRDF) using three types of feedback: written feedback; teacher-guided reflection on feedback; and dialogue between the teacher and student. Potter and Bye (2014) implemented a strategy whereby poorly-performing students undertook a self-reflection task and then met one-on-one with their tutor to identify goals and plan for future assessment. These methods helped students to self-regulate and request help, leading to improved outcomes in subsequent assessments and higher rates of retention.

Principle 8: Give choice in the topic, method, criteria, weighting or timing of assessments

Nicol (2009) proposed that providing students with choice empowers them and encourages them to be creative or undertake in-depth learning. However, none of the papers proposed giving students choice in criteria, weighting or timing of assessment tasks. Some allowed for choice of topic but only two papers (5.8%) focussed on choice and were coded as specifically addressing this principle. One of these, Surgenor (2013), surveyed students about their assessment preferences and found that they preferred a broad range of assessment methods spread through the semester.

Only Varsavsky and Rayner (2013) offered high-achieving students an alternative challenging assessment task that provided
opportunities to explore the discipline beyond standard requirements. While all students appreciated being offered the choice, only 11.5% in biology and 29.3% in chemistry opted for the alternative task. Students appeared concerned about their ability to undertake the more challenging task and expected that they would obtain higher grades with the traditional assessment. Those who took up the challenge, however, enjoyed the intellectual stimulation and felt that it enhanced their learning.

The lack of papers on this principle is not surprising given the importance placed on standards and equity (Nicol, 2009). The question is whether choice of method or criteria is appropriate at first year, where you need to provide guidance to students and spend time making sure that they understand assessment expectations? The other consideration is that first-year cohorts are often large, and choice may make management complex and be confusing for students. On the other hand, the need for flexible, future-oriented learning experiences that offer students choice and cater for their diversity is acknowledged (Wanner & Palmer, 2015).

This principle could, perhaps be reworded to say: **Provide students with choice in assessment to cater for student diversity.** The advantage of this wording is that it allows flexibility of assessment to cater for students from different backgrounds or abilities without suggesting that this must be linked to specific attributes of the assessment task (topic, method, criteria, weighting or timing).

**Principle 9: Involve students in decision-making about assessment policy and practice**

In the journals analysed, no papers were found that reported on students developing assessment policies and practices, nor could papers be found in literature outside those studied that specifically addressed using first-year students to do so. Nicol (2009) acknowledges that involvement of first-year students in policy-making is rare, suggesting that students should be asked to provide feedback on their assessment experiences to foster improvement. For this principle to be more attainable, it could be revised to say: *Use student feedback to improve assessment policies and practices.* The idea of students as partners with academics in their learning is one that is gaining momentum in higher education (Matthews, Groenendijl, & Chunduri, 2017), so this principle will need further research, particularly as to its applicability to first year students.

**Principle 10: Support the development of learning groups and communities**

University students need to assimilate academically and socially at university with assessment facilitating social integration through group projects and assignments (Nicol, 2009). While peer review of assessment was common in the papers analysed (see Principle 6), and in-class group activities were used to help students understand criteria or feedback (Principles 1 and 4), only 4 papers (11.8%) discussed the use of collaborative projects.

Two papers used group assessments in science laboratory environments. Leung et al. (2015) implemented a model for four-person teams learning how to use an oscilloscope, with only one member from each team being evaluated, reducing marking time by 75%. The method had the advantages of enhancing students' collaborative skills and reducing the time and resources required in the laboratory. Varsavsky and Rayner (2013) implemented an advanced-level assessment task for high-achieving students in biology and chemistry (see Principle 8), with the former involving solitary students and the latter groups. The authors observed that students' comments indicated that group activities added social integration and enjoyment to the project that was missing from the experience of solitary students.
This principle seems underrepresented in the literature especially as group collaboration has been shown to help students as actively process information and generate discussion, ultimately increasing their knowledge (Hodgson et al., 2014).

**Principle 11: Encourage positive motivational beliefs and self-esteem**

It is essential that students feel motivated in the first year as motivation is ‘linked to self-confidence, self-efficacy... and self-esteem’ (Nicol, 2009, p.40). Nicol proposes that self-esteem and motivation are enhanced when students experience success early in the program by focusing on what they have learnt rather than their performance. Most of the papers analysed included some sort of early low-stakes or ungraded assessment task or activity designed to help students build their skills and experience success, but only nine (26.5%) were coded against this principle because they specifically addressed or researched motivation.

First-year lecturers need to understand the purpose of early assessment tasks in alleviating students’ anxiety, supporting their learning or providing them with feedback that they could act upon (Gill, 2015). Potter and Bye (2014) noted that if students do poorly this may affect their commitment and confidence, generating increased rates of attrition. They stress the importance of motivating students to participate in support activities provided for those who problems. Lizzio and Wilson (2013) undertook research with 257 first-year students to determine how students evaluate assessment tasks and how this affects their motivation and performance, finding that motivational content and perceived value of a task predicted their level of engagement, which was the only predictor of students’ grades. They suggest that students’ performance is more related to how they approach their learning and what they want to achieve than whether they feel anxious or confident about the task.

While no issues were found with this principle, motivation was largely ignored in the literature analysed. Taking Lizzio and Wilson’s (2013) study into account, perhaps the wording of the principle could be adapted to: Motivate students to approach assessment as a way of learning in order to increase students’ self-efficacy and confidence to succeed.

**Principle 12: Provide information to teachers that can be used to help shape their teaching**

Assessment should provide information to students about their learning, but also provide information to teachers so that they can adapt to meet the needs of their students (Nicol, 2009). Five papers (14.7%) were coded against this principle and four of the five emphasised providing additional support for students rather than teachers adapting their teaching.

The only paper reporting on teachers changing their teaching as a result of assessment was the WRDF strategy (Crimmins et al., 2016), which uses face-to-face meetings as part of their feedback strategy, with teachers reporting that feedback in these sessions was mutually beneficial and that students gave them information that enabled them to improve their teaching and subsequent feedback. Perhaps this principle has not been articulated because it is tacitly implied, but if teachers are not using assessment to inform their teaching then this is an issue that needs addressing.

Principle 12 could be reworded to: Use students’ performance and feedback to enhance teaching and curriculum design to meet the needs of learners.

**Additional principle: Engage students with the academic discourses and conventions of the discipline, higher education and their future profession.**

One aspect of first-year assessment not addressed by Nicol (2009) in the principles, is...
the need to use assessment to introduce and socialise students to the multiple academic discourses and conventions of higher education (Beatty et al., 2014; Palmer et al., 2014; Yager et al., 2013). It is difficult for students to learn the practices and discourses of an institution if those practices are inconsistent, however. Terminology often differs between disciplines and students experience confusing information of expectations across their course (Gill, 2015).

Many of the papers analysed focussed on academic literacy as part of assessments that include academic writing (Beatty, Collins & Buckingham, 2014; Hamilton, 2016; Palmer et al., 2014). Hamilton (2016) warns against having too high expectations of first-year students and highlights the need to scaffold learning of academic literacies.

Assessment at first year should also be used to introduce students to the discourses and ways of thinking within a discipline. Two examples of this were evident in the papers analysed. Walker and Hobson (2014), discuss the difficulties that law students have in understanding how to write and think in the way required in law. Lluka and Chunduri (2015) used the Threshold Learning Outcomes (TLOs) for biology to identify the concepts that their biology students needed to know in first year and then link these to a grading matrix to ensure that students achieved those outcomes. Authentic assessment tasks, linked to the discipline, can be implemented from first year to help students prepare for their future profession.

First-year assessment should both introduce students to the ways of thinking in the discipline and highlight the expectations of assessment in higher education. A draft wording for a new principle would be: Engage students with the academic discourses and conventions of the discipline, higher education and their future profession.

Conclusions

The principles from Nicol's framework, that were most evident, related to students’ social and academic engagement (Principles 1–7). Students were given little choice in assessment methods, criteria and practices (Principle 8) and the question is asked whether choice is appropriate at first year where students require guidance and help in understanding criteria. A suggestion is made to reword this principle to make it more focussed on student diversity: Provide students with choice in assessment to cater for student diversity. Students were also not reported as being involved in decision-making about assessment policy and practice (Principle 9). A rewording of Principle 9 is suggested to reflect a more achievable outcome: Use student feedback to improve assessment policies and practices. Few papers reported on group projects although many used group activities to support assessment practices (Principle 10). Principle 11 has been rephrased to highlight the use of assessment as motivation for learning: Motivate students to approach assessment as a way of learning in order to increase students' self-efficacy and confidence to succeed. Surprisingly, only one paper reported on teachers specifically using assessment to shape their teaching (Principle 12). Further study is needed to determine whether these principles are being neglected or whether they are not being researched or published. It is suggested that Principle 12 be rephrased as: Use students’ performance and feedback to enhance teaching and curriculum design to meet the needs of learners. While assessment for learning was a focus in most of the papers, the terms ‘summative’ and ‘formative’ assessment are being blurred. For this reason, it is suggested that Principle 5 be reworded as: Ensure all assessment has a positive impact on learning. A new principle has been suggested: Engage students with the academic discourses and conventions of the discipline, higher education and their future profession. The proposed revised principles are shown in Figure 3.
Implementing first-year assessment principles: An analysis of selected scholarly literature

Adapted principles are indicated in bold and italics.

The papers analysed have evidenced good practices but it is not clear how widespread this is. Only two papers (Gill, 2015; Surgenor, 2013) analysed what was happening across the first-year at a university and both identified problems.

Superior design and implementation of first-year assessment has been shown to help students adapt to university and prepare them for future studies and work. This study has brought together the literature from three journals for the past three years to show how the principles identified by Nicol (2009) have been implemented to provide guidance to academics teaching first-year students to identify and implement good practice. Given the limitations of the research, suggestions for revised principles are preliminary and would need further investigation with input from both students and academics.

Figure 3: Revised principles for first-year assessment

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<td>1. Help to clarify what good performance is (goals, criteria, standards)</td>
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<td>2. Encourage 'time and effort' on challenging learning tasks</td>
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<td>3. Deliver high-quality feedback information that helps learners to self-correct</td>
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<td>4. Provide opportunities to act on feedback (to close any gap between current and desired performance)</td>
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<td>5. Ensure that all assessment has a positive impact on learning</td>
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<td>6. Encourage interaction and dialogue around learning (peer and teacher-student)</td>
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<td>7. Facilitate the development of self-assessment and reflection in learning</td>
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<td>8. Provide students with choice in assessment to cater for student diversity</td>
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<td>9. Use student feedback to improve assessment policies and practices</td>
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<td>10. Support the development of learning groups and communities</td>
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<tr>
<td>11. Motivate students to approach assessment as a way of learning in order to increase students' self-efficacy and confidence to succeed</td>
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<tr>
<td>12. Use students' performance and feedback to enhance teaching and curriculum design to meet the needs of learners</td>
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<tr>
<td>13. Engage students with the academic discourses and conventions of the discipline, higher education and their future profession.</td>
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(Adapted from Nicol, 2009, p.5 – italics indicate principles that have adapted or been added.)

References


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enhancing integration and empowerment in the first year. Retrieved from http://dera.ioe.ac.uk/11605/1/First_Year_Transforming_Assess.pdf


