



Why Measurement Matters: The Learning Outcomes Approach – A Case Study from Canada¹

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Abstract

Learning outcomes assessment can be a valuable tool for improving educational quality and institutional accountability. When learning outcomes, learning experiences and assessment tasks are aligned, the learning outcomes approach can ground quality assurance and teaching, and learning improvements in direct evidence of student learning. We offer our experiences as an informal case study on the use and development of learning outcomes assessment for quality assurance purposes. Since assessment is the keystone of the learning outcomes approach, our reflections are more broadly driven by the question of how best to measure and demonstrate student learning. This question takes on challenging new dimensions when we consider the fact that the *evidence* collected through the assessment of learning outcomes must be sound enough to support multiple policy goals.

Résumé

L'évaluation des résultats d'apprentissage peut être un outil précieux pour l'amélioration de la qualité de l'enseignement et la redevabilité institutionnelle. Lorsque les résultats d'apprentissage, les expériences d'apprentissage et les tâches d'évaluation sont alignés, l'approche basée sur les résultats d'apprentissage peut constituer la base de l'assurance et l'enseignement de qualité, et les améliorations de l'apprentissage en évidence directe de l'apprentissage des étudiants. Nous proposons nos expériences en tant qu'étude de cas informelle sur l'utilisation et

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le développement de l'évaluation des résultats d'apprentissage pour les besoins de l'assurance qualité. L'évaluation étant la clé de voûte de l'approche basée sur les résultats d'apprentissage, nos réflexions sont plus largement guidées par la question de comment mesurer et démontrer au mieux l'apprentissage des étudiants. Cette question prend de nouvelles dimensions exigeantes lorsque nous considérons le fait que la preuve recueillie par le biais de l'évaluation des résultats d'apprentissage doit être suffisamment solide pour prendre en charge des objectifs stratégiques multiples.

Introduction

Learning outcomes are broad, yet direct statements describing what students should know and be able to do at the end of a course or programme (Kenny 2011). Many countries have adopted various forms of learning outcomes and adapted them to suit a variety of educational and policy needs. In Canada, learning outcomes have long formed the backbone of our quality assurance and credentialing frameworks, though we have only recently begun to validate and enhance those outcomes through the assessment of student learning (Deller, Brumwell and Macfarlane 2015). In the European Union, the Bologna Process' Tuning Project (Bologna Follow Up Group on Qualifications Frameworks 2005) has used learning outcomes as the basis of a 'common language of student success'. This common language has made it possible to align postsecondary programmes throughout EU member states and neighbouring countries, improve quality assurance processes and open new educational pathways for European students (Kennedy *et al.* 2006; González and Wagenaar 2008). This ability to 'multitask' has made learning outcomes very appealing to postsecondary policy makers, leadership and instructors around the world. Yet it is important to remember that the learning outcomes approach is not a panacea, but a tool. As with most tools, it is most effective when it is used knowledgeably and skilfully. When it comes to learning outcomes, 'effective use' requires assessment.

The Higher Education Quality Council of Ontario (HEQCO) is at the forefront of learning outcomes assessment in Canada. As an arm's-length agency of the provincial government, we conduct research and provide evidence-based recommendations towards the continued improvement of postsecondary education (PSE) policy and practice. Three core issues drive our research programme: 1) access to PSE for historically under-represented students; 2) system design; and 3) learning quality. This latter priority directs our work on learning outcomes assessments as a means of assuring quality and improving student learning. Though our analyses and recommendations typically focus on Canadian contexts, our research, publications, conferences, and webinars

reach a global audience. In recent years we have also forged connections with the PSE community in East Africa by means of our partnership with the Aga Khan University on the development of learning outcomes assessment initiatives.

Given our mutual interest in improved accountability mechanisms and the enhanced experience of student learning, we offer our experiences as an informal case study on the use and development of learning outcomes assessment for quality assurance purposes. The learning outcomes approach described here is, by necessity, an iterative process as our institutions resist policies that they perceive to be demanding uniformity. Like many African institutions, our colleges and universities do not appreciate quality assurance requirements that are imposed from afar and out of touch with their unique culture of teaching and learning. Our process has developed in light of these concerns, with the understanding that each institution needs to adapt and customise the learning outcomes approach in order for it to be truly effective. This article illustrates how learning outcomes can serve as the basis of postsecondary quality assurance activities that are flexible enough to work with and showcase institutional individuality.

This article is an adaptation of Fiona Deller's keynote address to the East African Higher Education Quality Assurance Network's 2015 conference in Nairobi. The article begins with a review of the crucial role assessment plays in the learning outcomes approach. The article then explores the HEQCO's four categories for interpreting and organising learning outcomes, with a focus on how this typology can be used to identify areas where assessment is needed to demonstrate student learning. Since assessment is the keystone of the learning outcomes approach, our reflections are more broadly driven by the question of how best to measure and demonstrate student learning. This question takes on challenging new dimensions when we consider the fact that the evidence collected through the assessment of learning outcomes must be sound enough to support multiple policy goals. The article concludes with a short discussion of the 'ripple effects' that learning outcomes assessment can offer to all levels and operations of postsecondary education, from student engagement through to quality assurance.

Why Assess Learning Outcomes?

Learning outcomes can demonstrate the value of postsecondary credentials in terms of student learning. In many jurisdictions, including Ontario, credential frameworks already describe the degree to which graduates at each credential level are expected to have mastered certain skills and competencies (Council of Ontario Universities (COU) 2011; Deller *et al.* 2015; Lumina Foundation 2014). At the course and programme levels, courses can be designed so that

‘learning outcomes, learning experiences, and assessment tasks cohere internally and build towards program outcomes’, using a model also known as constructive alignment (Goff *et al.* 2015:8). Colleges and universities also use learning outcomes to set institution-wide goals for student learning. When all of these tiers of outcomes align, the postsecondary sector gains a great deal of clarity and focus. However, unless learning outcomes are assessed, there are few other gains to be had in their implementation. This is because assessment makes learning outcomes meaningful by grounding them in empirical data. That is, assessment can provide evidence of student learning, which can then be used to inform broader programme-level, institutional, and policy concerns.

The need for evidence of student learning is becoming ever more critical to postsecondary education (PSE) systems around the world. As many governments are reducing expenditures in order to weather the tough economic climate, institutional accountability is at a premium. As the cost of PSE rises, student debt loads increase, and entry-level jobs grow harder to secure, students and stakeholders are beginning to question whether PSE delivers a viable return on investment. As more and more individuals obtain postsecondary credentials, institutions and employers are increasingly looking beyond attainment rates to consider other ways of determining and demonstrating the effectiveness of PSE. It is against this backdrop that the learning outcomes approach is gaining traction as a means of ensuring that our postsecondary systems are accountable, accessible and of the highest quality. The effectiveness of learning outcomes, however, depends upon assessment. Learning outcomes assessment can provide us with the empirical evidence needed to inform change and growth in the postsecondary sector.

When assessment is supported by a well-articulated learning outcomes framework, it can enrich a postsecondary institution in many ways. For example,

- When outcomes are assessed at the course or programme level, the data can be used to ground *quality assurance, programme evaluation* and *teaching and learning improvements* in evidence of student learning.
- At the same time, instructors can create a *formative learning* experience for students by using the data to identify strengths and areas needing further support.
- When students are assessed upon entering PSE and prior to graduation, institutions can demonstrate value added – a significant contribution to *institutional accountability*.
- Assessment data can be used to improve *student mobility* by verifying that students are prepared to pursue graduate or professional education and, eventually, the labour market.

In other words, learning outcomes frameworks and assessments provide us with a common language for articulating student success and educational quality. In this way, assessment offers some much-needed weight and clarity to PSE.

While the incentives to assess learning outcomes are sound, the road ahead is far from clear. In recent years, learning outcomes have spread rapidly across the postsecondary sector. In fact, the expanded presence of learning outcomes at the postsecondary level has outstripped our abilities to validate those outcomes through assessment, both in terms of the quantity and diversity of outcomes and the comparability of the language used. The reality is that learning outcomes assessment tends to be treated as an afterthought. Often it is not given much serious attention until the majority of the outcome development and mapping work has been completed. Additionally, not all institutions use the same terminology to articulate skills and competencies, which affects the extent to which outcomes can be compared and interpreted reliably. With this in mind, efforts on learning outcomes assessment need to be accelerated before the learning outcomes approach as a whole can begin to bear fruit.

The HEQCO's response to these circumstances has been structured around a typology including four different classes of postsecondary learning outcome appropriate to the Ontario contexts: *basic cognitive skills*, *discipline-specific skills*, *higher-order cognitive skills* and *transferable skills*. Together, these categories can be used to guide postsecondary outcomes assessment and, in doing so, create a shared foundation for postsecondary learning quality. The next section of this paper reviews the four categories and brings into greater focus the different assessment and policy considerations for each domain.

Learning Outcomes Assessment and the Four Domains

The HEQCO's four domains of learning outcomes represent the types of learning outcomes most commonly employed in PSE. The typology was developed to help bridge the gap in the language used to describe the skills expected of postsecondary students. Each domain operates as a 'catch-all' that can be used to sort and make sense of the overgrowth of learning outcomes in use today, with the goals of establishing the common ground and common language necessary for valid assessment. The typology was first proposed by Weingarten (13 February 2014) and outlines four classes of learning outcomes:

1. basic cognitive skills, such as literacy and numeracy;
2. disciplinary content, referring to the knowledge and content students are expected to have acquired in their field of study;
3. higher-order cognitive skills, such as problem solving and critical thinking; and

4. transferable life skills, sometimes called ‘soft skills’ or ‘essential skills’ and including behavioural and personality attributes such as initiative, resilience, and time management.

During the course of our work in this field, we have acknowledged that considerable overlap can and does exist between these areas. However, we have also been able to establish the ways in which the domains – whether studied individually or collectively – can be used to refine and target assessment efforts. This section takes a closer look at each category in terms of measurement considerations and possible applications of assessment data.

Basic Cognitive Learning Outcomes

Basic cognitive skills include literacy and numeracy (Weingarten 13 February 2014). These basic literacy and numeracy skills make up the foundation of every level of education and, in recent years, have been restructured around learning outcomes in many countries. On the one hand, the Organisation for Economic Co-operation and Development (OECD) has correlated literacy and numeracy proficiency with increased labour market participation and higher wages, highlighting the clear benefits of well-developed basic cognitive skills (OECD 2013). On the other hand, literacy and numeracy skills are a point of perennial concern in Canada, as OECD assessments of Canadians’ skill levels show no real improvement over the last twenty years (Dion and Maldonado 2013).

Though literacy and numeracy make up a significant part of the K-12 curriculum, basic cognitive outcomes are also important in PSE, as these skills are foundational to more complex study as well as to employability. At the elementary and secondary levels, literacy and numeracy are measured against provincial curriculum standards for each grade. There are no comparable standards in PSE and the definitions and assessments used by individual institutions vary considerably. While Ontario’s colleges and universities are committed to producing literate and numerate graduates, the current approach to teaching and assessing basic cognitive outcomes is unsystematic.

The identification of basic cognitive skills requires that we distinguish foundational skills from associated, though more abstract, higher-order cognitive outcomes. In other words, it is not always easy to determine where literacy and numeracy end and more specialised communication and mathematical skills begin. Despite the difficulties it presents, this distinction is essential to designing meaningful, appropriate outcomes assessments at the postsecondary level. As students enter PSE with a broad range of skill sets and abilities, it is increasingly clear that postsecondary institutions need to establish a baseline level of competency for basic cognitive outcomes and assess these skills upon admission to ensure that students possess a strong

base of literacy and numeracy skills upon which more complex skills can be built (Dion and Maldonado 2013).

The conceptualisation of basic cognitive learning outcomes presents a number of other challenges. One concerns the lack of conceptual clarity around literacy and numeracy, which affects the extent to which we can measure these skills effectively. Another concerns the lack of clarity in postsecondary policy around the foundational importance of basic cognitive outcomes for higher learning. While individual postsecondary institutions use a variety of definitions and assessment tools to measure literacy and numeracy skills, there is still confusion about the importance and value of basic cognitive outcomes for all students in all disciplines in any course of postsecondary study.

Fortunately, international assessments, such as the OECD's Programme for International Student Assessment (PISA) and Programme for the International Assessment of Adult Competencies (PIAAC), help to make up for some of the inconsistencies present in outcomes assessment at the institutional level. PISA and PIAAC generate massive data sets through common indicators, such that the information collected can be used to evaluate the health of education systems and inform policy directions. These assessment programmes are motivated in part by the evidence linking basic cognitive proficiency to improved economic standing, as well as the 'need to align higher education outcomes in key areas across borders in a time of growing graduate mobility' (Ewell 2012:37).

International assessments face challenges with regard to the relevance of the tests to participants and the usefulness of the data collected. Since international assessment data are intended for high-level analysis and planning, individual scores are not normally made available to participants. It is also difficult to measure and compare student outcomes across regions that do not necessarily have the same educational and technological infrastructure. Even given these methodological concerns, international assessments reliably produce one important effect: with every reporting cycle, these measurements return literacy and numeracy to the forefront of the national conversation about education.

Strong literacy and numeracy skills have been linked to many positive outcomes in life, including increased wages and labour market participation. Despite this, more work needs to be done at the postsecondary level to conceptualise literacy and numeracy as skills in their own right rather than as 'background' skills implicit in higher-level disciplinary work. This lack of focus is facilitated by the unclear position allocated to basic cognitive skills in policy frameworks.

Those who do wish to assess basic cognitive skills at the postsecondary level will find a number of reliable tools at their disposal, especially for the assessment of students entering a course of study. Fewer tools are available to measure the added value of PSE to these skills.

Discipline-specific Learning Outcomes

Basic cognitive learning outcomes address the skills students need in order to process complex information and develop specialised skills. This learning, which has traditionally been the focus of PSE, can be broken down further into a range of discipline-specific learning outcomes. Discipline-specific outcomes determine whether or not a student has acquired the particular abilities required for success in their chosen field of study. Although many discipline-specific outcomes have long histories, there is still much debate about how they should be assessed.

Discipline-specific learning outcomes are stated most explicitly in professional programmes, such as engineering and medicine, where accreditation standards exist and mirror these outcomes (Tamburri 2013). This type of outcome also surfaces in non-professional programmes that clearly align with specific careers or sectors. In these instances, discipline-specific outcomes are often informed by jurisdictional accrediting bodies, partner institutions, and/or programme advisory committees representing relevant employers. Although accreditors have traditionally been concerned with improving curricula and pedagogy, there has been a recent shift towards using quality assurance frameworks to ensure that professional standards are being met (Ewell 2009). External stakeholders and employers in particular want evidence that graduates are equipped to join their respective professions. Regular assessment programmes for discipline-specific learning outcomes can help to maintain stakeholder confidence in the quality of professional training programmes.

While discipline-specific outcomes can improve the structure and coherence of a programme, their external functions are not limited to defining career pathways. Discipline-specific outcomes are increasingly common in non-professional university programmes, as a means to clarify programme structure and ensure educational quality. An additional purpose for this domain has arisen from the increase in international student mobility, as institutions are placing greater emphasis on credit transfer. Discipline-specific outcomes have emerged as a means of recognising learning across jurisdictions, and as North American institutions look to attract foreign students, many colleges and universities have adopted discipline-specific learning outcomes as a means of remaining competitive with the world's leading institutions (Tamburri 2013). In this context, learning outcomes are fast replacing credit hours as the preferred unit of measurement for learning.

The European Union's Tuning Project has had considerable impact on the global interest in discipline-specific learning outcomes. The project emerged in the wake of the Bologna Accord in 1999 as a means of ensuring the mobility

of credentials and the consistency of quality standards across EU countries. Learning outcomes developed by the Tuning process can be mapped through all levels of a programme or credential, ensuring alignment, accountability and clear direction for curriculum development (Lennon *et al.* 2014; Tuning Educational Structures USA 2014). The Tuning process, which involves gathering advice from subject matter and policy experts, has since been exported successfully to postsecondary systems in Latin America (2005), US (2009), Russia (2011), Africa (2011), Australia (pilot study 2010) and Canada (2011) (Beneitone *et al.* 2007; Institute for Evidence-Based Change 2012; Tuning Russia 2013; Yopp and Marshall 2014). Tuning Africa, in particular, entered its second phase in 2015 and has expanded its focus to additional disciplines and degrees as well as matters relating to credit transfer and sector management (What is Tuning Africa? 2016).

To the extent that they are mirrored in accreditation standards, discipline-specific learning outcomes create clear pathways from PSE to the labour market in professional disciplines. Through initiatives, such as the Tuning process, many institutions are using discipline-specific outcomes to provide quality assurance, improve student mobility and smooth transitions into the workforce. The unique structure of discipline-specific outcomes raises questions for assessment with regard to whether quality assurance and student achievement can be measured at the same time, and whether it is appropriate to assess discipline-specific outcomes in a generic context (Barrie, *et al.* 2014; Brooks 2011; Christodoulou 2014; Heiland and Rosenthal 2011). However, PSE's protracted focus on discipline-specific learning outcomes gives this domain a level of clarity that the other categories of learning outcomes and higher-order cognitive outcomes, in particular, are not afforded.

Higher-order Cognitive Learning Outcomes

Higher-order cognitive skills include critical thinking, problem solving and communication (Weingarten 13 February 2014). Employers have been vocal about the need to teach students how to analyse complex information, make credible judgements and arrive at effective solutions; these abilities are highly valued in almost every line of work (Benjamin 2013; Borwein 2014; Canadian Council of Chief Executives 2014). In PSE, the drive to advance higher-order cognitive outcomes comes from professional and less career-specific programmes alike. Highly discipline-specific programmes such as engineering recognise the need for future professionals to be able to make sound, responsible decisions, while general arts and science programmes view higher-cognitive outcomes as skills that can help graduates transition into a variety of careers (Kaupp, Frank and Chen 2014; Wabash National Study of Liberal Arts Education 2009).

Although the learning outcomes approach helps educators and students identify and develop higher-order cognitive skills, critical thinking, problem solving and communication are often considered to be among the most difficult outcomes to define, teach and assess.

Most credential frameworks and degree profiles ascribe great importance to higher-order cognitive outcomes, though there is little consistency in how these outcomes are framed and described. It is common, for instance, for qualifications frameworks adapted from the European Union's *Dublin Descriptors* to embed skills in critical-thinking, communication and problem-solving across various competency areas and credential levels (Bologna Follow Up Group on Qualifications Frameworks 2005; Council of Ministers of Education, Canada 2007; Quality Assurance Agency 2008; Ontario Ministry of Training, Colleges, and Universities 2009; Council of Ontario Universities 2011). No operational definitions are provided for these skills. Instead, the content and value of these outcomes are indirectly conveyed by the competency areas. These point to a much broader trend in the higher-order cognitive domain: stakeholders recognise the value of critical-thinking, problem-solving and communication skills, but there is no consensus on how to conceptualise them, much less how to assess them.

The challenge we face here is the opposite of the situation with respect to basic cognitive outcomes. Basic cognitive outcomes appear to be undervalued in PSE, though educators understand quite well how to teach and assess literacy and numeracy skills. In contrast, higher-order cognitive outcomes are highly valued, but we lack agreement on definitions. Both sets of circumstances produce similar effects: institutions respond to these grey areas by developing their own concepts and interventions for assessment, but these are difficult to translate across contexts, which, in turn, can affect the quality and cohesion of PSE within the sector as a whole.

Although we identify critical-thinking, problem-solving and communication skills as distinct higher-order outcomes, the differences between them are unclear. For example, as we noted earlier, literacy as a basic cognitive skill and communication as a higher-order skill can be challenging to differentiate. Critical thinking, meanwhile, is difficult to define clearly and to link to demonstrable behaviours. One option has been to understand problem-solving and communication skills as components of critical thinking, essentially as tools one uses to resolve situations or convince others that one's argument is sound (Benjamin 2013). Another possible solution may lie in the multi-dimensional working definition created by the Education Testing Service, which identifies analytical, synthetic and causal dimensions of critical thinking that are clear enough to ground assessment tasks (Liu, Frankel and Roohr Crotts 2014). These

arguments have failed to convince everyone, hence critical thinking remains a vague concept. This gap perpetuates difficulties uptake and use of learning outcomes assessments and frameworks, because institutions and programmes interpret critical thinking a number of different ways. Since one goal of the learning outcomes approach is to create a common language of skills and abilities linked to demonstrable outcomes, critical-thinking and other higher-order cognitive skills pose a particular challenge.

A number of measurements approach higher-order cognitive outcomes through problem-solving and communication skills, since the definition of critical thinking is much disputed. The Collegiate Learning Assessment (CLA+), for instance, calculates critical-thinking scores based on the quality of analytic reasoning, problem-solving and communication skills reflected in participants' written responses to case-based tasks (Benjamin 2013). Even so, others have contested that this holistic approach fails to account for other components of critical thinking, such as informal logic (Possin 2013). While critical thinking may remain a vague concept, we do know that students can be taught component skills like analytic reading, dissecting arguments, differentiating between deductive and inductive reasoning, and so forth. The challenge for assessment lies in striking the right balance between known factors and other less well-defined components.

The CLA+ is one of the better-known critical-thinking assessments on the market today. The CLA+ uses open-ended, case-based written assessment tasks to measure how well students 'formulate hypotheses, recognize fallacious reasoning, and identify implicit and possibly incorrect assumptions' (Benjamin 2013:3). In doing so, the CLA+ eschews the multiple-choice format usually preferred by commercially available standardised tests because, according to the creators of the instrument, students do not necessarily have to exercise their critical-thinking capacities to choose between a set of possible answers (Benjamin 2013). Instead, the CLA+'s open-ended format provides students with a short case study that mirrors complex, real-world problems. Since students are given all of the information they need to analyse the case, and the tasks are presented in a variety of contexts, the CLA+ claims to measure the communication and problem-solving skills regardless of discipline (Benjamin 2013).

However, it has been argued that the CLA+'s lack of discipline-specific context ignores the extent to which prior subject-area knowledge and problem-solving experience factor into a student's critical thinking process (Banta and Pike 2012). This may cause students from some programmes, especially those in which critical thinking is taught through simulations, case studies, and problem-based learning, to underperform on what is primarily an exercise in close reading and written analysis. Additionally, others have suggested that the

CLA+'s emphasis on a holistic conception of critical thinking overlooks the significance of informal logic and critical-thinking strategies (Possin 2013). This criticism is levelled primarily at the validity of the CLA+'s assessment scores rather than at the test itself, since the CLA+ implicitly includes these skill components. The implication of this oversight, however, is significant: since components of critical thinking are not included in the scoring matrix, the CLA+ may be a better measure of rhetorical skills than of critical thinking proper.

Since critical thinking is such a vague concept, we focus on those instruments that measure it indirectly through problem-solving and communication skills. But as our discussion of the CLA+ illustrates, it is difficult for assessment measures to account for students' disciplinary knowledge base and frames of reference. Rubrics like those in the Association of American Colleges and Universities (AAC & U) VALUE initiative have been better able to grapple with the overlap of higher-order cognitive skills and disciplinary knowledge, but because they rely primarily on the judgement of instructors, they can be unreliable when applied to large samples (AAC & U 2014). Since much of critical thinking occurs invisibly or without clear links to discrete and observable behaviours, problem-solving, communication and analytical skills (such as informal logic) still seem to be the most promising roads to access the teaching and assessment of higher-order cognitive outcomes.

Transferable Skills Learning Outcomes

Transferable skills are 'prime qualities that make and keep us employable' (Goleman 1998:4). These outcomes can help students succeed not only academically but professionally and personally as well (Weingarten 2014). 'Transferable' reflects the fact that these skills are thought to be generic and applicable across a range of activities, though transfer is not necessarily automatic and adaptation may be required (Jackson 2013). Students need to understand how and when transferable skills can be used to their advantage, both within their fields of study and on the labour market.

Stakeholders sometimes equate transferable skills with graduate employability, which presupposes that the generic nature of such skills makes them valuable and applicable in any professional context. However, some researchers argue that this equation neglects to take learning transfer into account as a distinct stage in the skills development process (Cameron *et al.* 2011; Jackson 2013). Many of the key premises of learning transfer can be used to illuminate the nature of transferable skills and learning outcomes. Specifically, questions of metacognition – how and why we think and act the ways in which we do – can help explain the 'how' and 'when' of learning and skills transfer.

Metacognition refers to ‘the mind’s ability to reflect on how effectively it is handling the learning process’ (Conley 2013), the ability to ‘stop and think’ or ‘step back and reflect’ (Behar-Horenstein and Niu 2011). These descriptions position metacognition at the heart of the higher-order cognitive processes. Our problem-solving and communication activities are functions of our ability to think critically and ask questions* – that is, our capacity for metacognition. But metacognition is also central to transferable skills, which are essentially tools and techniques that we use to navigate between and engage with various situations (Conley 2013). Our ability to transfer learning is what sets the basic cognitive, discipline-specific and higher-order cognitive domains in motion.

Transferable skills help us to leverage our learning and frames of reference to apply our skills in unfamiliar contexts. When employers look for flexibility, resourcefulness and adaptability, they are naming transferable outcomes that can ease the transition from school to work. Yet these qualities are far from simple to teach and assess. Transferable outcomes depend as much on personality as on curriculum. Just as some students might display a knack for mathematics while others might require additional supports, some students are naturally inclined to work well in teams while others need to develop this skill.

While the postsecondary sector is only beginning to turn its attention to transferable skills, employers have been vocal about their importance for some time. When surveyed, it appeared that Canadian employers have repeatedly prioritised interpersonal, communication and problem-solving skills over aspects like industry-specific knowledge, time management and computer skills (Canadian Council of Chief Executives 2014; Refling and Borwein 2014). Most recently, an 11-person panel of Canadian economists and PSE experts was asked to study developing trends in skills training for science, technology, engineering and mathematics (STEM). This field has long been considered to be an area in need of highly-skilled professionals, so its conclusion that ‘in an uncertain future, a premium will be put on workers’ adaptability’ was unprecedented (Expert Panel on STEM Skills for the Future 2015:162). Yet even in STEM, employers, experts and educators are growing ever more aware of the value of transferable skills, particularly to prepare students to be able to change course should the need arise.

This makes the need for further research into the teaching and assessment of transferable skills all the more urgent. Some promising tactics are appearing, such as case studies, problem-based learning and situational judgement tests, but we still have very few validated tools capable of collecting useful data (Jackson 2013; Hoidnand Kärkkäinen 2014). The postsecondary sector, moreover, has yet to demonstrate interest in developing and measuring

transferable skills outcomes (Weingarten 13 February 2014). Still, these skills are just as valuable to postsecondary students as they are to early learners, with pre-school and school readiness programmes in Canada having long used measures such as the Early Development Index to help children with diverse needs successfully transition to kindergarten. Ontario's K-12 sector is also beginning to recognise the importance of transferable skills for student success; in February 2014, People for Education (2014) launched *Measuring what Matters*, a multi-year initiative developing educational outcomes for creativity, citizenship, health, quality learning environments and social-emotional skills. As such, PSE may be able to expand on the work of the early childhood and K-12 education sectors to develop and assess transferable skills outcomes.

Basic cognitive and disciplinary outcomes allow students to navigate the world, while higher-order cognitive outcomes allow them to engage it critically. Transferable skills outcomes, however, transcend language and discipline. These capacities help us adapt our learning to different situations and thus carry it from the classroom to the labour market and beyond. While we know little about how to teach and assess transferable skills at the postsecondary level, we understand some of the underlying phenomena – learning transfer, creativity and resilience. We also know that we begin developing these skills early in life, so we can look to the ways transferable outcomes are assessed in early learning, elementary school and secondary school as we develop measures that are appropriate for PSE. As interest in transferable skills builds, research will gain the momentum to follow.

Conclusion

Learning outcomes assessment can be a valuable tool for improving educational quality and institutional accountability. When learning outcomes, learning experiences and assessment tasks are aligned, the learning outcomes approach can ground quality assurance and teaching and learning improvements as direct evidence of student learning.

At this point in time, enthusiasm for the learning outcomes approach has outstripped our abilities to assess student skills reliably. To this end, the HEQCO has created a four-part typology of learning outcomes that can be used to identify common language and common ground for assessment. While this process has been developed with the needs of Ontario's postsecondary system in mind, it depends, not unlike the Tuning methodology, on institutions and faculty members defining for themselves what educational quality looks like. It can also be adapted and applied in other postsecondary

cultures to clarify and focus assessment efforts. We believe the flexibility of our approach may be especially useful to the postsecondary community in East Africa, as it can be tailored to suit the needs of a rapidly growing sector and of low resource/high demand institutions.

As we have indicated, the learning outcomes approach is not without its growing pains. Assessment, in particular, even with the help of our typology, can be difficult to navigate. Although literacy and numeracy – basic cognitive skills – are known to effect positive outcomes across one's lifetime, PSE tends to view them as background skills implicit in higher-level disciplinary studies. Discipline-specific skills benefit from clarity of focus not offered to the other domains, and yet the question of how to balance these outcomes with basic cognitive, higher-order cognitive and transferable skills is still a point of contention. Higher-order cognitive skills are valued by government, institutions and employers alike, but they resist our best efforts to define and measure them. Transferable skills hold great potential for easing students across postsecondary transitions, but PSE is only beginning to look at how early childhood and K-12 educators are already assessing these skills.

With all of these grey areas, good leadership is crucial to fostering the learning outcomes approach and an institutional culture of assessment. As instructors and the faculty are students' primary points of contact within a postsecondary institution, their engagement is key. Senior leadership needs to support assessment as well as mapping activities, so that the faculty can understand just how valuable their assessment data is to the continued health of the college or university.

If implemented properly, the learning outcomes approach can serve the purposes both of accountability and quality measurement. However, it is not enough to revise policy infrastructure and map outcomes across credentials. In order for a system to be truly outcomes-based, we need to prove that students are graduating with the skills they need to succeed. Assessment remains the keystone of the learning outcomes approach at the postsecondary level, though it is not always taken seriously. If given proper consideration, learning outcomes assessment could be an invaluable source of strength and flexibility for a system in transition.

Note

1. This article is an adaptation of Fiona Deller's keynote presentation to the East African Higher Education Quality Assurance Network's 2015 conference in Nairobi, Kenya.

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