# Curricular Elements for Learner Success—21st Century Skills

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## Abstract

Institutions of higher education are widening access to meet demand and to realize the benefits of an educated citizenry. Widened access has resulted in increased learner diversity, and consequently, differing expectations for teaching and learning. Achieving desired learning outcomes in this context suggests the need to examine curricular design, pedagogical approaches, and related learning theories. This paper identifies curricular elements for learner success, such as the flipped classroom, course redesign, and high impact practices, and links these to self-regulated learning to increase learner responsibility for the achievement of desired higher education outcomes—21st century skills for a global world.

**Keywords:** curricular elements, learner

## 1. Introduction

Demand for higher education is driving change. Between 2006 and 2013, global enrollments increased from 25% to 33% of the total population of the 5-year age group following high school completion (The World Bank, 2015). The total number of students participating increased from 28 million in 1970 to 165 million in 2009, with growth projected at 262 million in 2025 (Organisation for Economic Co-operation and Development, 2014). This growth is motivated by a recognition of the benefits of higher education for individuals and society (Baum, Ma, Payea, 2013). These include stable employment, financial well-being, healthy lifestyles, increased tax revenues, decreased reliance on government-funded programs, and civic engagement (Baum et al., 2013).

Consequently, formerly elite systems of higher education have opened their doors to encourage all to enter, and many nations are now characterized by universal participation (Blessinger & Anchan, 2015). The European Commission has set goals to broaden access to learners from under-represented groups such as those from disadvantaged socioeconomic backgrounds, geographical locations, and ethnicities to achieve greater social equity ("Europe 2020 Target," n. d.). The aim is that 40% of 30-34 year olds will have completed a tertiary level education by 2020 (European Commission, 2015). Similar movements in the U.S. are based on the increasing percentage of jobs that require some form of post-secondary education. To meet this demand, and to remain competitive with other nations in terms of college attainment, the goal is for 60% of working age Americans to obtain a postsecondary degree or credential by 2025 (Lumina Foundation for Education, 2016).

Approaches are being adopted to accommodate increasingly diverse learner populations and prepare graduates for their future roles in the workplace and in society. To address the life situations and needs of these learners, and ensure that access is accompanied by success, institutions have turned to a range of delivery methods (e.g., online, hybrid) as well as the use of open education resources, technology-enhanced learning, high impact practices, competency-based learning, and educational partnerships with employers, among others. In other words, coursework must be conveniently offered, affordable, and well-designed to align with and result in requisite skills and abilities.

Many of these movements, once on the periphery of educational practice, are now mainstream. An illustration of this is online learning. The views of chief academic officers regarding the importance of online learning to strategic planning has increased from 49% in 2002 to 63% in 2015 (Allen & Seaman, 2016), attesting to the role of flexible delivery in meeting new opportunities. Another example is the collaboration of higher education institutions to develop and share open educational resources (e.g., OER Commons, OpenCourseWare, Connexions, Open Learning Initiative; Educause, 2010), thus reducing the cost of higher education for students. Increasingly, research attests to the efficacy of high impact practices, and particularly participation in multiple such practices (Finley & McNair, 2013; Kuh, 2008). Accordingly, institutions are redesigning courses to incorporate elements of these practices. These examples

demonstrate responsiveness to current needs and the ability to adapt and change.

This paper briefly presents a profile of today's university student, reviews desired learning outcomes for higher education, and examines student and instructor beliefs about learning. It then presents responsive pedagogical practices with a focus on the shared responsibility of the learner and the instructor in the learning process. The aim of the paper is to identify curricular and pedagogical elements that can be applied or adapted to a variety of higher education contexts to support institutions in meeting diverse learner needs and demonstrating the value added by a university education.

## 2. Learner Profiles

Students enrolling in higher education institutions are no longer coming directly from secondary school and enrolling full time with a sole focus on their university experience as was the case traditionally. Many are the first in their families to pursue higher education, work full-time, are raising children or caring for family members, have financial constraints, and face challenges in terms of available time for study, currency with technology, and navigating unfamiliar institutional systems and processes. In the United States, 38% of students in higher education institutions are 25 years of age or older, 58% work while enrolled, and 26% are raising children (Lumina Foundation for Education, n. d.).

Institutions are also enrolling greater numbers of traditionally underserved students, such as women, ethnic minorities, and those from disadvantaged backgrounds. Female enrollments now surpass those of men in most parts of the world although fewer of them obtain doctoral degrees (Chien, 2014). From 1996-2010, enrollments in U.S. institutions of higher education increased by 11% for White students, 240% for Hispanics, and 72% for Blacks (Lumina Foundation for Education, n. d.). However, while 40% of White students attain degrees, only 24% of Native Americans, 23% of Blacks, and 15% of Hispanics are similarly successful (Lumina Foundation, n. d.). In the United Kingdom, although more students are gaining access to higher education, those from advantaged backgrounds are still much more likely to attend selective universities than their counterparts from disadvantaged backgrounds (Department of Business, Innovation and Skills, 2016). These statistics point to a continuing gap in access and completion.

Additionally, globally mobile students currently number close to 5 million (ICEF Monitor, 2014). In Europe, this population increased by 114% from 2000 to 2010 (ICEF Monitor, 2014). Western Europe has the largest overall number of in-bound students followed by North America (Institute of International Education [IIE], 2016). In some countries, such as the United Kingdom and Australia, international students, many of whom speak English as an additional language, comprise approximately 22% of the total enrollment (IIE, 2016). This potentially has an enormous impact on institutional practice in terms of needed support for English proficiency development and cultural adjustment. Prospective international students indicate that speaking English fluently is their top goal (ICEF Monitor, 2016).

These learners have differing levels of preparation, educational backgrounds, perspectives on learning, expectations, values, and behaviors, all of which impact their success. Closing the gap between students who possess the requisite cultural capital (Bourdieu, 1986) for higher education and those who do not is a critical need, attested to by the gap in completion among learners according to ethnicity, for example, as well as access to the most selective institutions. It necessitates a different approach to teaching and learning, one characterized by shared responsibility for developing the skills and attributes needed for success not only in higher education but in future roles in the work place and society. As such, some nations, such as Australia, have adopted standards outlining a commitment to providing an appropriate learning and living environment for international students. (Australian Universities Quality Agency, 2009). Other nations must follow suit. As institutions widen participation, they must determine how to ensure the success of all students.

## 3. Outcomes of Higher Education

Another factor impacting higher education is the emphasis on accountability, which has resulted in the need for institutions to demonstrate the value of university coursework. This involves examining curricular and pedagogical approaches and learning theories that provide insight into learner success, particularly how learning experiences can be designed to achieve desired outcomes. Before this can be accomplished, however, institutions must determine the outcomes they are striving to meet, both within and across disciplines.

While professional standards and accrediting bodies offer guidance for discipline-specific learning outcomes, broader learning outcomes, often called essential learning outcomes, have also been identified. The goal is for graduates to possess both discipline-specific expertise and broad skills and knowledge, which will enable solutions to complex challenges and innovation (American Association of Colleges and Universities [AAC&U], 2007, 2011, 2015). Employers emphasize the need for "education practices that involve students in active, effortful work—practices including collaborative problem solving, internships, research, senior projects, and community engagements" (Hart Research Associates, 2013, para 6). They "consistently rank outcomes and practices that involve application of skills

over acquisition of discrete bodies of knowledge . . .[and] strongly endorse practices that require students to demonstrate both acquisition of knowledge and its application" (Hart Research Associates, 2013, page 6).

Desired learning outcomes for higher education such as communication, critical thinking, problem-solving, and innovation have wide support. Ninety-three percent of private sector and nonprofit employers surveyed agreed that "a candidate's demonstrated capacity to think critically, communicate clearly, and solve complex problems is *more important* than their undergraduate major" (Hart Research Associates, 2013, page 4). The task for institutions and instructors is to determine which learning experiences are most effective for their students and in which learning contexts. "Recommended learning outcomes can and should be achieved through many different programs of study" (AAC&U, 2008, p. 4). Programs must have clear goals and be consistently assessed to determine outcomes. The development of these 21st century skills should be the aim of higher education. This requires a departure from traditional practice in which instructors impart knowledge to students.

## 4. Instructor and Student Roles

Traditional learning paradigms emphasize discipline-based content and teacher-centered practices. These are still evident in higher education although they were critiqued as early as 1970 when Paolo Freire conceptualized education as either a banking or a libertarian system (Freire, 1970). The former involves the teacher depositing information in the student, who passively receives, memorizes, and repeats. The libertarian approach entails a partnership between the student and teacher. The student is engaged in thinking rather than being an empty vessel to be filled. The libertarian classroom is one in which dialogue and real communication occur. The latter view supports development of the outcomes reviewed earlier.

Determining how to effectively address teaching and learning within the diverse context of higher education is both a challenge and an opportunity. Changing learner profiles in higher education have resulted in the admission of learners from a wide range of backgrounds who have diverse expectations and beliefs about teaching and learning, including instructor and student roles, perceptions of those roles, and related behaviors, many of which be based on traditional paradigms. However, achieving 21st century skills requires that the educational experience prepare learners to innovate, create, and contribute to the knowledge economy.

Teacher and learner expectations vary. Instructors may view their role as presenting content rather than teaching students how to learn or how to overcome difficulties in the learning process (Dembo & Seli, 2012). One instructor might focus attention on the consequences of not attending class or adhering to deadlines, while another may demonstrate commitment to helping students learn needed strategies to become successful. Students may simply want to know how to get a good grade, expect content to be delivered in clearly organized lectures, and not understand the benefit of interacting with other students to get feedback or broaden their perspective, particularly if they view these peers as less knowledgeable than themselves, and especially, less knowledgeable than the teacher (Andrade & Evans, 2015; Cox, 2009). Instructors, however, may be disappointed if students do not engage in questioning and critical thinking but simply expect them to dispense knowledge (Cox, 2009). Pedagogical interventions and approaches must take these varying beliefs into account.

The theory of mindset intelligence (Dweck, 2000) provides insight into students' views of learning, and how these views govern behavior. Students may view intelligence as a fixed trait—something they are born with and cannot change. These students tend to focus on performance, avoiding tasks at which they may fail, and limiting themselves to those they can already do well in order to look smart. To them, high grades are evidence of their intelligence. In contrast, learners with a growth mindset believe that they can expand and improve on their abilities. They are more likely to take risks, and recognize that making errors is part of learning.

The theory of self-regulated learning can help learners see how to develop their abilities through goal-setting and strategy use. It helps learners take greater responsibility for controlling the factors that impact their learning. One of the most practical frameworks for self-regulated learning consists of six dimensions: motive, methods, time, social environment, physical environment, and performance. These dimensions correspond to the questions why, how, when, with whom, where, and what (Dembo & Seli, 2012; Zimmerman & Risemberg, 1997; Zimmerman, 2002). Instructors who integrate these concepts into their materials, discussions, and feedback can help learners be more successful through goal-setting, strategy development, time management, help-seeking, controlling physical and emotional distractors in the environment, and reflecting on performance to monitor progress, modify strategy use, and inform goal revision.

Self-regulation can be taught and can positively impact student achievement. It can help students transition from a fixed view of intelligence to a growth mindset as they see their potential for learning and achievement. By exploring these theories, educators can identify new approaches for navigating the changing landscape of higher education and building capacity for effective pedagogical practice.

## 5. Responsive Practices

Higher education faculty members may not have had pedagogical training, and may teach as they were taught. Students may believe that they should be fed information or think they cannot improve their inherent abilities through effort. Thus, traditional practices persist. Some institutions are introducing teaching standards, or requiring teaching certification as part of the tenure process. This training should include how to facilitate a growth intelligence mindset in students and how to overcome learning obstacles. This section examines promising pedagogical practices with the potential to change teaching and learning paradigms and address the diversity of values, beliefs, and experiences of teachers and learners in higher education. These paradigms also support the development of self-regulation.

The flipped classroom encourages active and applied learning. In this model, time is repurposed so that students listen to lectures outside of class and engage in group work, projects, problem-solving, and application in class (Educause, 2012). Flipped classrooms may involve a hybrid approach with one or more class sessions per week offered online, or at minimum, lectures, discussion forums, and possibly practice exercises and assessments offered through an online learning management system. Instructors facilitate learning by structuring in and out-of-class work, clarifying content, encouraging critical thinking, and monitoring progress. The model frees students from a focus on note-taking; instead, it emphasizes comprehension and reflection (Educause, 2012). "The flipped model puts more of the responsibility for learning on the shoulders of students while giving them greater impetus to experiment" (Educause, 2012, p. 2). As such, it supports self-regulation. It also helps students change their views of education.

Aspects of the flipped classroom can be incorporated into course redesign. Courses selected for redesign are typically gateway courses, defined as having large enrollments, being foundational in nature, and which students may be at risk of failing (John N. Gardner Institution, 2016). One such project involved the redesign of 57 courses affecting 141,000 students. It enabled an estimated 10,000 additional students to pass these courses, and resulted in efficiency gains of $5 million in faculty resources over an 8-year period ("Pushing the Barriers," 2015). Faculty redesigned their courses by clarifying learning goals and developing a teaching strategy aimed at achieving improved learning outcomes with fewer resources. Redesign was based on the following principles: establish greater consistency across sections, emphasize active learning, offer individualized assistance, provide frequent online assessments with immediate feedback, ensure sufficient time on task and track progress, use fewer faculty resources per student, utilize technology, and collaborate (National Center for Academic Transformation, 2014). The power of making somewhat minor changes such as these has the potential to result in extensive improvements.

Additionally, much research and discussion in higher education has focused on high impact practices, defined as learning experiences characterized by student involvement and application (Kuh, 2008). These typically consist of first-year seminars, writing intensive courses, learning communities, common intellectual experiences, collaborative projects, service or community-based learning, internships, diversity/global learning, and capstone experiences although institutions may define and develop their own high impact practices. What may be more compelling, and have wider application, however, are the pedagogical elements behind these practices: performance expectations set at appropriately high levels; a significant investment of time and effort by students over an extended period of time; interactions with faculty and peers about substantive matters; experiences with diversity; frequent, timely and constructive feedback; structured opportunities to reflect and integrate learning; opportunities to discover relevance of learning through real‐world applications; and public demonstration of competence (Kuh & O'Donnell, 2013).

Though student self-report data provides evidence of the efficacy of high impact practices in terms of learning (Finley & McNair, 2013; Kuh & O'Donnell, 2013), institutions need multiple assessment mechanisms for examining their effectiveness and also for addressing issues related to their implementation. Chief academic officers' perceptions of student success initiatives on their campuses, specifically high impact practices and summer bridge, orientation, and early warning, indicate that although widely adopted, these initiatives tend to be limited to the first year and participation may be low unless they are required (Barefoot, Griffin, & Koch, 2012). Although these programs primarily focus on helping students make social and academic connections leading to improved retention and graduation, fewer than half of the respondents in the study felt that these practices, specifically first year seminars, learning communities, early warning, undergraduate research, and service learning, had achieved targeted outcomes.

Similarly, despite two-thirds of chief academic officers viewing distance education as critical to their strategic planning and half of them believing that learning outcomes for such courses is somewhat superior or superior to face-to-face courses, they report that fewer than 30% of their faculty accept the value and legitimacy of distance learning (Allen & Seaman, 2016). Thus, initiatives involving technology-supported instruction (e.g., flipped classrooms and redesigned courses with online components) may not be widely accepted or adopted. To address these issues, more sophisticated and triangulated forms of assessment of these responsive practices accompanied by strategic implementation and monitoring may help demonstrate their success, and if not, identify changes that need to be made.

## 6. Reflections & Conclusions

Learning theories, such as mindset intelligence and self-regulated learning, provide a lens for increased understanding of how pedagogy can impact learning and also serve as a basis for curriculum design. Table 1 provides a summary of the elements of course redesign, high impact practices, and the flipped classroom, and maps these to the dimensions of self-regulated learning. As indicated earlier, the application of self-regulated learning dimensions can potentially address beliefs about intelligence and learning in ways that encourage improvement.

The comparison in the table indicates significant overlap across the approaches and illustrates an important point—the dimensions of self-regulated learning align closely with the elements of responsive pedagogical practices, regardless of the particular approach. This alignment indicates the potential for these pedagogies to positively impact teaching and learning in higher education. However, as indicated, practices may not be effective if they are not accompanied by appropriate structures, assessments, and oversight. Pilots may be successful due to the commitment of those involved—generally those most supportive and informed about a specific curricular model. However, when pilots are extended more broadly, they may suffer from a lack of vision, an understanding of rationale, needed training, resources, or limited commitment.

Assessment is critical in determining what is working and what is not so that changes can be implemented. Tools such as the VALUE rubrics, associated with the essential learning outcomes desired by employers, may prove helpful in determining student achievement, and thus the efficacy of curricular and pedagogical approaches (AAC&U, 2009). Institutions need to develop their own versions of these approaches based on their students, faculty, and institutional missions. These need to be scalable to have real impact. The principles of curricular redesign and learning theory presented provide insight into possible practices for designing effective learning experiences.

As higher education institutions widen access to a diversity of learners, they have new opportunities to explore curricular design and pedagogical methods that enable all learners to be successful. This involves addressing instructor and learner beliefs about learning through the adoption of engaging curricular and pedagogical approaches that result in the achievement of learning outcomes for the 21st century global world such as critical thinking, problem-solving, written and oral communication, collaboration, information literacy, and global competencies. The profiles, learning theories, and curricular and pedagogical elements shared can initiate campus discussions, resulting in plans and strategies for changing policy and practice in ways that support successful learner outcomes.

Table 1. Curricular & pedagogical approaches

| Course Redesign | High Impact Practices | Flipped Classroom | Self-Regulated Learning |
|---|---|---|---|
| Redesign the whole course | | Structure in and out-of-class work | |
| Require active learning | Structured opportunities to reflect and integrate learning; opportunities to discover relevance of learning through real‑world applications | Projects, problem-solving, and application; encourage critical thinking | Performance; methods of learning |
| Increase interaction among students | Interactions with faculty and peers about substantive matters | Group work | Social environment |
| Build in ongoing assessment and automated feedback | Frequent, timely and constructive feedback | | Performance |
| Provide students with one-to-one, on-demand assistance from trained personnel | | | Methods of learning |
| Ensure sufficient time on task | Significant investment of time and effort by students over an extended period of time | | Time |
| Monitor student progress and intervene when necessary | | Monitor progress; clarify content | Performance |
| Measure learning, completion, and cost | Public demonstration of competence | | Performance |
| | Performance expectations set at appropriately high levels | | Motive |
| | Experiences with diversity | | Social environment |

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