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# New Expectations, New Technologies: Alternative Learning Models for Minnesota



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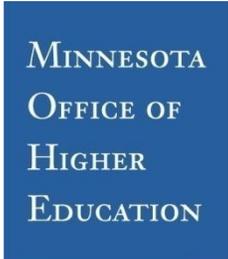
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The Minnesota Office of Higher Education is a cabinet-level state agency providing students with financial aid programs and information to help them gain access to postsecondary education. The agency also serves as the state's clearinghouse for data, research and analysis on postsecondary enrollment, financial aid, finance and trends.

The Minnesota State Grant Program is the largest financial aid program administered by the Office of Higher Education, awarding up to \$180 million in need-based grants to Minnesota residents attending accredited institutions in Minnesota. The agency oversees tuition reciprocity programs, a student loan program, Minnesota's 529 College Savings Plan, licensing and early college awareness programs for youth.

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# Introduction

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Adding to the recent discourse surrounding higher education as *the* pathway to the middle class, President Obama recently challenged the entire country to once again attain the highest proportion of college graduates in the world by 2020, having fallen behind in four-year degree attainment since the early 90's.<sup>1</sup> In the face of increasing cost,<sup>2,3</sup> declining resources,<sup>4</sup> the prevalence of non-traditional students seeking higher education opportunities,<sup>5</sup> as well as the increasing push for innovation and economic productivity in higher education<sup>6,7</sup> both institutions and policy makers must adapt to a new environment.

A new study by the Department of Education Statistics highlights a crisis of 'wasted learning' in the United States. The study found that 35 percent of students beginning college during the 2003-2004 academic year changed schools at least once, and in so doing lost an average of 13 credit hours. Of the 35 percent of students who transferred, 40 percent were not able to transfer any credits, losing an average of 27 credits.<sup>8</sup>

Massive credit waste appears when specifically examining the transition from community college to a four-year program: 45 percent of all bachelor's degrees are awarded to students who have transferred from a community college, yet researchers at NYU found that only 58 percent of community college graduates are able to transfer 90 percent or more of their credits when transitioning to a community college, and fourteen percent *lose* more than 90 percent of their credits. "The greater the [credit] loss, the lower the chances of completing a BA," conclude the study's authors.<sup>9</sup> The nonprofit organization Complete College America provides extensive literature further detailing these costs, which translate

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<sup>1</sup> White House. (2014). Higher education. Retrieved October 16, 2014, from <http://www.whitehouse.gov/issues/education/higher-education>

<sup>2</sup> National Center for Public Policy and Higher Education and Southern Regional Education Board. (2010, June). Beyond the rhetoric: Improving college readiness through coherent state policy. Retrieved from [http://www.highereducation.org/reports/college\\_readiness/CollegeReadiness.pdf](http://www.highereducation.org/reports/college_readiness/CollegeReadiness.pdf)

<sup>3</sup> The College Board. (2013). *Trends in college pricing: 2013*. Retrieved from <http://trends.collegeboard.org/sites/default/files/college-pricing-2013-full-report.pdf>

<sup>4</sup> Altbach, P. G. (2011). Patterns of higher education development. In P. G. Altbach, P. J. Gumport, and R. O. Berdahl (Eds.), *American higher education in the twenty-first century: Social, political, and economic challenges* (pp. 15-36). Baltimore, MD: The Johns Hopkins University Press.

<sup>5</sup> Levin, J. S. (2007). *Non-traditional students and community colleges: The conflict of justice and neoliberalism*. New York, NY: Pelgrave Macmillan.

<sup>6</sup> Hrabowski, F. A. (2014). Institutional change in higher education: Innovation and collaboration. *Peabody Journal of Education*, 89(3), 291-304.

<sup>7</sup> Slaughter, S. & Rhoades, G. (2004). *Academic capitalism and the new economy: Markets, state, and higher education*. Baltimore, MD: The Johns Hopkins University Press.

<sup>8</sup> Simone, S.A. (2014). Transferability of postsecondary credit following student transfer or coenrollment (NCES 2014-163). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubsearch>.

<sup>9</sup> Monaghan, D., & Attewell, P. (2014). The community college route to the bachelor's degree. *Educational Evaluation and Policy Analysis*, 36(1).

to hundreds of millions of wasted dollars.<sup>10</sup> A more widespread, systematic employment of prior learning assessments and competency credits would ensure that students are not repeating courses needlessly—a factor that drives up costs and attrition rates. While many universities offer challenge examinations or placement exams for incoming students, these are often restricted to one or two general education courses, and are clearly insufficient given the credit wastage outlined above.

This paper focuses on potential strategies to facilitate degree completion, with special attention to the higher education experience for non-traditional students in Minnesota. The majority of federal and statewide persistence and completion metrics capture only first-time, full-time student data, resulting in figures that fail to represent the full college-going population. Definitions of nontraditional students vary, but the umbrella term includes part-time students, students who work full-time, student parents, and returning students. All these factors are highly correlated with age, so that students over age 24 typically are classified as nontraditional. The potential for overlap between factors creates a spectrum ranging from “minimally nontraditional” to “highly non-traditional” students.<sup>11</sup>

Completion and retention rates for non-traditional students tend to be lower, often considerably so, than those of first-time, full-time students. A recent study analyzing National Student Clearinghouse (NSC) data found that 33.7 percent of non-first-time students completed their degree, compared to 54.1 percent of first-time students.<sup>12</sup> In another report, NSC found that, while older students were more likely to graduate when enrolled part-time than traditional-age students, all part-time graduation rates were well below those of full-time students.<sup>13</sup>

Viewing age as a proxy for non-traditional status, non-traditional students represent a growing percentage of enrollment within the Minnesota State Colleges and Universities System (MnSCU). As of 2010, students between the ages of 25 and 34 made up 21.7 percent of all enrolled students in the system, up from 18.7 percent in 2006.<sup>14</sup> Community and technical colleges were especially attractive to non-traditional students, with students over 25 years old comprising 42.2 percent of the enrollment at these institutions.<sup>15</sup> Recognizing the potential of this multifaceted demographic to strengthen the enterprise of higher education in Minnesota informed our selection of alternative learning approaches.

Due to Minnesota’s unique political landscape and its commitment to a high tuition/high student aid model,<sup>16</sup> searching for quality, efficient, and low-cost models of higher education is of great

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<sup>10</sup> Complete College America. (2011). *Time is the enemy: The surprising truth about why today’s college students aren’t graduating...and what needs to change*. Washington, D.C.: Author.

<sup>11</sup> Choy, S. (2012). *Nontraditional undergraduates*. National Center for Education Statistics. Retrieved from <https://nces.ed.gov/pubs2002/2002012.pdf>

<sup>12</sup> InsideTrack. (2014, October). *National study of non-first-time students shows disturbing completion rates*. Retrieved from <http://www.insidetrack.com/2014/10/27/national-study-non-first-time-students-shows-disturbing-completion-rates/>

<sup>13</sup> Shapiro, D., Dundar, A., Ziskin, M., Yuan, X., & Harrell, A. (2013, December). *Completing college: A national view of student attainment rates-fall 2007 cohort* (Signature Report No. 6). Herndon, VA: National Student Clearinghouse Research Center.

<sup>14</sup> Ong, V. (2011, June). *MnSCU: Retooling Minnesota for recovery*. Saint Paul, MN: Minnesota 2020. Retrieved from <http://www.scribd.com/doc/57238711/Retooling-Minnesota-for-Recovery>

<sup>15</sup> Ibid.

<sup>16</sup> St. John, E. P., Daun-Barnett, N., & Moronski-Chapman, K. M. (2013). *Public policy and higher education: Reframing strategies for preparation, access, and college success*. New York, NY: Routledge.

importance. In 2011, higher education in Minnesota faced an 11 percent cut of state-based funding effectively increasing the expected family contribution for student aid and resulting in the state's inability to grant full awards given the high tuition/high aid model.<sup>17</sup> Since it is unlikely that state and public support for higher education will increase in the near future, *it is necessary to begin to envision alternatives for the state's population to earn higher degrees and competencies.*

In seeking cost-effective solutions that address the linked issues of credit wastage and degree attrition while broadening access, we turn to approaches that challenge the traditional brick-and-mortar, lecture-based model. Our paper surveys three often-overlapping alternative approaches: *competency-based education, work-based education, and online-based options.* Exploration of these alternative models reveals a broad range of possibilities for increasing degree quality and completion rates *under nurturing circumstances.* If the State of Minnesota desires to employ any of these models effectively, it must first identify whether and where those nurturing circumstances exist, including the likely student audience.

Our exploration of alternative models begins with a conceptual overview and a brief history and analysis of the three chosen alternative models. Investigation of exemplars will define the necessary nurturing circumstances in the course of evaluating each model's relative merits as a template for innovation in Minnesota. If the state of Minnesota is to develop an implementation plan for one or more alternative models of higher education, assessment must be an integral part of that plan. Finally, we will make recommendations that balance projected outcomes and trade-offs of each model.

## **Exploring the Evidence: Alternative Models**

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Competency programming and work-based learning have existed as options for non-traditional degree seekers for many years, but are gaining new relevance and emerging from the margins of US higher education due to a combination of federal attention and technology innovations in content delivery. The latter factor has also fueled a dramatic proliferation of massive online open courses. . In this section, we examine the use of competency-based, work-based, and online-based educational programs in order to provide background information and identify defining characteristics for each approach. We also highlight potential challenges to implementation and the potential benefits to the State of Minnesota, as well as opportunities for assessment of each of these alternative models based on existing programs.

### **Competency-based Education**

Competency-based education arrived in the US during the 1960s as a reaction to perceptions that students were not prepared for life after degree attainment. Malan (citing Van der Horst & McDonald, 1997) identifies six distinguishing features of competency-based education.<sup>18</sup> Here is a brief summary of these features, adapted and consolidated from those on Malan's list:

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<sup>17</sup> Minnesota Budget Project (2011). Governor's budget cuts higher education as demand increases. Retrieved from: <http://minnesotabudgetbites.org/2010/02/17/governors-budget-cuts-higher-education-as-demand-increases/#.VDh1SOdq39o>

<sup>18</sup> Malan, S.P.T. (2000). The 'new paradigm' of outcomes-based education in perspective. *Tydskrif vir Gesinsekologie en Verbruikerswetenskappe* 28, 22–28

- Explicit learning outcomes (for both acquired skills and the accompanying proficiency assessment standards);
- A flexible time frame and an adaptable program to master skills that allows for a variety of learning methods to be pursued (a “student-centered” approach);
- Criterion-referenced testing of required outcomes; and
- Certification based on demonstration of learning outcomes.

## Competency-based solutions: prior learning

Prior learning assessment, a key feature of both competency-based and traditional degree programs, represents one of the oldest tools for registrars to minimize credit waste (Klein-Collins, 2013). Prior learning assessment does not ask, “Which institution taught your English 101 course?” but rather, “How well can you write?” Like so many features of modern higher education, prior learning assessment has its roots in the G.I. Bill. The American Council on Education (ACE) began reviewing military training programs and established themselves as a source of informal recommendations for competency credit. Today, ACE maintains a detailed database on courses it has evaluated, which includes government, business and nonprofit programs, with recommended credit equivalencies.<sup>19</sup>

The National College Recommendation Service (NCRS) performs a similar service for civilian credit equivalency recommendations through their College Credit Recommendations Directory (CCRS). Minnesota public universities are listed as “cooperating institutions” that have expressed a willingness to accept NCRS credit recommendations. We identify two potential improvements to this setup. First, each institution is given the opportunity to post a “profile” on the site, breaking down what types of prior learning it recognizes.<sup>20</sup> At this time, none of the MnSCU schools have created profiles. In addition, the NCRS “course credit directory” contains detailed experience equivalency recommendations including specific objectives and instruction content often citing ACE review: for example, completion of a course in Basic Traffic Collision Investigation for the New York City Fire Department. The NCRS also maintains a Course Credit Directory which summarizes work-related programs and often cites ACE review for specific credit recommendations. Completion of a course in Basic Traffic Collision Investigation for the New York City Fire Department, for instance, comes with a recommendation of “3 semester hours in Fire Science, Criminal Justice, Police Science, or Safety Engineering.”<sup>21</sup> At present, organizations based in New York and New Jersey dominate the list.

## Competency-based solutions: Direct assessment

Letting time be the variable in the learning process is one of the great contributions of competency-based education, and represents one of the more promising solutions to what is described as the time-to-degree crisis. Competency-based education has potential to ‘break the link between seat time and learning.’ This breakage need not be complete, however. In the following section we will examine the

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<sup>19</sup> New America Foundation. (n.d.). *Prior learning and competency-based education: A background primer*. Washington, D.C.: Author. Retrieved from [http://pnpi.newamerica.net/prior\\_learning\\_and\\_competency\\_based\\_education](http://pnpi.newamerica.net/prior_learning_and_competency_based_education)

<sup>20</sup> See for example Bethel University’s profile: [http://www.nationalccrs.org/colleges\\_universities/profiles/bethel\\_university.html](http://www.nationalccrs.org/colleges_universities/profiles/bethel_university.html)

<sup>21</sup> CCRS Online Directory: New York City Fire Department. (October 24, 2014). National College Credit Recommendation Service. Retrieved from [http://www.nationalccrs.org/ccr/nyc\\_fire\\_department\\_fire\\_science.html#unitleader](http://www.nationalccrs.org/ccr/nyc_fire_department_fire_science.html#unitleader)

most relevant example of time-learning decoupling: direct assessment. The Higher Learning Commission defines direct assessment as follows:

The measure by the institution of what a student knows and can do in terms of the body of knowledge making up the educational program. These measures provide evidence that a student has command of a specific subject, content area, or skill or that the student demonstrates a specific quality such as creativity, analysis or synthesis associated with the subject matter of the program. Examples of direct measures include projects, papers, examinations, presentations, performances, and portfolios.<sup>22</sup>

The U.S. Department of Education has approved six direct assessment programs. Brandman University's online bachelor of business administration offers students all course material in mobile-compatible formats, and students complete the papers, group projects, portfolios and tests that comprise the more than 80 "competencies" at their own pace.<sup>23</sup> The Texas State College System is unique among approved programs in that its 27-credit certificate in industrial systems technology is delivered in-person, not online.<sup>24</sup>

### *Challenges of competency-based education programs*

Obstacles impeding the implementation of quality competency-based programs at scale include: a capricious federal response to novel programs; the need for intensive individual engagement with students; and the difficulty of transferring competencies should students wish to change programs. We discuss these issues in detail in a case study on direct assessment in the University of Wisconsin System later in the report.

Another risk of competency-based education is the open-ended timeframe for completion. Measures need to be in place to ensure students are moving through their programs at a reasonable pace. Finally, as mentioned earlier, while in theory competencies could eventually become a more easily transferred commodity than credit hours, the opposite is presently true due to the novelty of competency-based programs: even direct assessment degrees not linked to class hours will probably have to be assigned course equivalencies if students wish to change programs.<sup>25</sup>

### *Assessment of competency-based models*

Linda Baer, Senior Program Consultant for i4Solutions, notes several challenges to implementing competency-based programs including expenditure of resources to train faculty to move from a credit hour model to a competency-based model, true assessment of competencies, and the continued tendency for assessments to preference one learning style over others.<sup>26</sup> She also notes a number of opportunities competency-based programs can bring to higher education. These include flexible

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<sup>22</sup> Higher Learning Commission. (2013). Background information on direct assessment competency-based programs. Retrieved from <https://www.ncahlc.org/Monitoring/direct-assessment-competency-based-programs.html>

<sup>23</sup> Fain, P. (November 26, 2014). Mobile bachelor's degree. Inside Higher Ed. Retrieved from <https://www.insidehighered.com/news/2014/11/26/competency-based-bachelors-brandman-could-be-glimpse-future>

<sup>24</sup> Education Dept. approves two more direct-assessment programs. (April 15, 2015). Inside Higher Ed. Retrieved from <https://www.insidehighered.com/quicktakes/2015/04/15/education-dept-approves-two-more-direct-assessment-programs>

<sup>25</sup> Fain, P. (February 21, 2014). Taking the direct path. Inside Higher Ed. Retrieved from <https://www.insidehighered.com/news/2014/02/21/direct-assessment-and-feds-take-competency-based-education>

<sup>26</sup> Baer, L. (November 7, 2014). Interview with Garrett Hoffman.

schooling and scheduling options, diversity of pedagogical techniques, cost effectiveness (after the initial implementation phase of these programs), the measurement of *mastery* of learning, and efficiency in time to degree.

In terms of assessment of competency-based programs in particular, Baer notes a number of institutions which tout exemplary competency-based programs and assessment strategies, including the University of Wisconsin Flex Option outlined later in the paper. There are a number of tools already in use that build assessments into textbooks, allowing the learner and instructor to pace their progress through a competency appropriate for each individual. For an example, see McGraw-Hill's LearnSmart program.<sup>27</sup>

Finally, Baer notes the efficacy of utilizing professional organizations' competencies from which to build program-specific assessment tools. For example, the American Psychological Association outlines competency benchmarks for professional psychologists and has a number of instruments and tools they use for assessment already in place.<sup>28</sup> These benchmarks as well as assessment tools can be used to build competency-based education programs and curriculum including assessment of the learners and the program efficacy using existing models.

## Work-based models

Work-based learning is an emerging educational model that brings together employers and educational institutions to create learning opportunities in the work place. Work-based learning typically includes apprenticeships, internships/externships, experiential learning programs, and community-based educational programs. These programs are usually formally accredited by an educational institution and can effectively meet the needs of students who are preparing for the work force, employers who are interested in the long-term development of their workers, and educational institutions, which aim to provide a high quality education directly applicable for students and bring in revenue.<sup>29</sup>

### Apprenticeships

Formal apprenticeship programs are pervasive in the European Union (EU) for vocational and technical training, and have begun to take hold in the United States. Formal apprenticeships are characterized by hiring of students as employees of an external organization, a split between classroom and on-the-job learning, and students carrying out normal, day-to-day operations of external organizations.<sup>30</sup> Apprenticeship programs have advantages for students, the government, educational institutions, and

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<sup>27</sup> McGraw-Hill Education (2014). The LearnSmart Advantage. Retrieved from <http://learnsmartadvantage.com>

<sup>28</sup> Fouad, N. A., Grus, C. L., Hatcher, R. L., Kaslow, N. J., Smith Hutchings, P., Madson, M. B., ...Crossman, R. E. (2009). Competency benchmarks: A model for understanding and measuring competence in professional Psychology across training levels. *Training and Education in Professional Psychology*, 3(4), S5-S26.

<sup>29</sup> Boud, D., Solomon, N., & Symes, C. (2003). New practices for new times. In D. Boud and N. Solomon (Eds.), *Work-based learning: A new higher education?* (pp. 3-17). Philadelphia, PA: Open University Press.

<sup>30</sup> Sweet, R. (2014). *Work based learning: A handbook for policy makers and social partners in EFT partner countries*. Torino, Italy: European Training Foundation. Retrieved from [http://ec.europa.eu/education/library/publications/etf-wbl-handbook\\_en.pdf](http://ec.europa.eu/education/library/publications/etf-wbl-handbook_en.pdf)

companies.<sup>31 32</sup> These advantages include the employers' abilities to choose and train their workforce while continuing productive operations, educational institutions' abilities to provide a highly relevant and cost effective education that sustains students' interests, and students' ability to develop high competencies while earning a wage. While apprenticeship programs tout numerous benefits, they also require a significant amount of negotiation between the educational institutions and employers. This may limit the time students have to complete general education requirements leading to less well-rounded students.

Hellwig conducts a comparative analysis between two vocational training education programs in Australia and Germany.<sup>33</sup> While the study focuses on the feasibility of implementing competency-based education training packages into existing systems of vocational training and education in these two countries, the study also outlines Germany's successful dual apprenticeship program. This dual apprenticeship program is the major pathway for vocational training in Germany. It is highly regulated, offers little flexibility, and assessment of competencies is limited to one final exam all apprentices must pass. The Vocational Training Act of 1969 placed the chambers in charge of quality control of the educational programs for the dual apprenticeship program.<sup>34</sup>

While regarded as generally successful yet highly criticized for its inflexibility, the dual apprenticeship program faces myriad financial difficulties.<sup>35</sup> Apprenticeships are largely funded by employers, and the number of apprenticeships has dwindled since 2003. The federal government created a pact with employers to avoid a training levy, which has temporarily increased the numbers of training positions in Germany, however the numbers still fall below demand. Hellwig argues for the implementation of more flexible competency-based training packages.<sup>36</sup> Yet despite its rigidity, Germany's dual apprenticeship program regulated by the federal government provides an effective and efficient mode for vocational training.

In 2013, the EU launched the European Alliance for Apprenticeships (EAFA) primarily in response to high youth (under 25) unemployment rates, which reached 23.4 percent in 2014.<sup>37 38</sup>The EAFA aims to

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<sup>31</sup> Sweet, R. (2014). *Work based learning: A handbook for policy makers and social partners in EFT partner countries*. Torino, Italy: European Training Foundation. Retrieved from [http://ec.europa.eu/education/library/publications/etf-wbl-handbook\\_en.pdf](http://ec.europa.eu/education/library/publications/etf-wbl-handbook_en.pdf)

<sup>32</sup> Hellwig, S. (2006). Competency-based training: Different perspectives in Australia and Germany. *Australian Journal of Adult Learning*, 46(1), 51-74.

<sup>33</sup> Hellwig, S. (2006). Competency-based training: Different perspectives in Australia and Germany. *Australian Journal of Adult Learning*, 46(1), 51-74.

<sup>34</sup> Deissinger, T. (2004). Germany's system of vocational education and training: Challenges and modernization issues. *International Journal of Training Research*, 2(1), 76-99.

<sup>35</sup> Hellwig, S. (2006). Competency-based training: Different perspectives in Australia and Germany. *Australian Journal of Adult Learning*, 46(1), 51-74.

<sup>36</sup> Hellwig, S. (2006). Competency-based training: Different perspectives in Australia and Germany. *Australian Journal of Adult Learning*, 46(1), 51-74.

<sup>37</sup> European Commission. (2014a). EU measures to tackle youth unemployment Retrieved from [http://europa.eu/rapid/press-release\\_MEMO-14-466\\_en.htm](http://europa.eu/rapid/press-release_MEMO-14-466_en.htm)

<sup>38</sup> European Commission. (2014b). European Alliance for Apprenticeships. Retrieved from [http://ec.europa.eu/education/policy/vocational-policy/alliance\\_en.htm](http://ec.europa.eu/education/policy/vocational-policy/alliance_en.htm)

“reform... apprenticeship systems, promote the benefits of apprenticeships, [and promote] smart use of funding and resources,”<sup>39</sup> and is funded by a number of private companies and government agencies. While the EAFA is too new to assess whether the initiatives have decreased the youth unemployment rate, the alliance hopes also to promote increases in tax revenue, reduction in welfare payments, and increased levels of social inclusion.

In the United States, Vice President Joe Biden recently announced the formation of the Registered Apprenticeship-College Consortium (RACC), a network of colleges and apprenticeship providers working together to create more college-to-career pathways.<sup>40</sup> The RACC’s intent is to foster and create more articulation agreements between Registered Apprenticeships and two- and four-year educational institutions in order to create more pathways for students to earn their post-secondary degrees. The Registered Apprenticeship programs are required to go through an evaluation by a third party (either the American Council on Education or the National College Credit Recommendation Service) in order to join the RACC, and determine the college credit value of the apprenticeship. This consortium has potential to create accelerated paths to degrees for students; increase the competitiveness of businesses; increase graduation rates for participating post-secondary institutions; ease recruitment of motivated and skilled workers for businesses; and increase the flexibility of post-secondary programs to meet the needs of students, particularly non-traditional students. Since the RACC is new, evaluation has not yet occurred; however, the program touts its ability to increase national recognition of the importance of apprenticeship programs and already includes over 30 participating educational institutions.

Apprenticeship programs are gaining more prominence in both the European Union and in the United States. While apprenticeship programs have existed before, the current push is to create a network of these programs as well as standardize assessments in order to ensure students are receiving high quality education and ample training for the workforce.<sup>41 42</sup> With the recent launch of apprenticeship networks in both the EU and the US, it remains to be seen if and how these programs will change the existing higher education landscape and economic climate. In addition, the question remains if and how the funding structures for these various organizations will persist. Pending review of the efficacy of these apprenticeship networks, it may be beneficial for higher education institutions in Minnesota, as well as employers, to begin to explore articulation agreements and the creation of apprenticeship programs in the state now that these initiatives are encouraged at a national level.

### *Assessment of apprenticeships*

Historically, the requirements of apprenticeships are determined at a local level by institutions offering the program, or governance within the field or trade. While some organizations such as the International Brotherhood of Electrical Workers (IBEW), United Association Plumbers and Gasfitters

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<sup>39</sup> European Commission. (2014a). EU measures to tackle youth unemployment Retrieved from [http://europa.eu/rapid/press-release\\_MEMO-14-466\\_en.htm](http://europa.eu/rapid/press-release_MEMO-14-466_en.htm)

<sup>40</sup> United States Department of Education. (2014). Enrollment in distance education courses, by state: Fall 2012. Washington, D.C.: Author. Retrieved from <http://nces.ed.gov/pubs2014/2014023.pdf>

<sup>41</sup> European Commission. (2014b). European Alliance for Apprenticeships. Retrieved from [http://ec.europa.eu/education/policy/vocational-policy/alliance\\_en.htm](http://ec.europa.eu/education/policy/vocational-policy/alliance_en.htm)

<sup>42</sup> United States Department of Education. (2014). Enrollment in distance education courses, by state: Fall 2012. Washington, D.C.: Author. Retrieved from <http://nces.ed.gov/pubs2014/2014023.pdf>

(UAPG), and other trade associations have national or international standards for apprentices, other institutions often do not. This leads to problems when a certified individual attempts to move to another state or municipality and work in the same field or expand their learning through additional higher certification.

As discussed above, the Registered Apprenticeship College Consortium (RACC) announced by Vice President Joe Biden in April of 2013 has the overarching goal of facilitating articulation of the Registered Apprenticeship certificate for college credit on a national scale.<sup>43</sup> In simple terms, organizations and institutions providing apprenticeships may become a member of the consortium if they agree to its principles and meet the initial conditions and ongoing criteria required of member institutions. Initial conditions focus on current accreditation, and willingness to participate in the program by providing information and accepting credit from other member-institutions. The ongoing criteria include crediting learning from the Registered Apprenticeship Certificate, maintaining policies consistent with peer institutions, maintaining student-friendly transfer policies, limiting residency requirements to 25 percent or less, and crediting extra-institutional learning.<sup>44</sup>

## Internships and externships

Internships are often similar to apprenticeships in that they combine both a classroom component, and an experiential or work component.<sup>45</sup> Where these differ from apprenticeships is often in duration. Apprenticeships tend to imply ongoing employment, while internships generally have a fixed term.<sup>46</sup> Externships consist of experiential learning opportunities that are generally shorter than internships.<sup>47</sup> Nearly all higher education institutions offer some sort of internship program in one or more areas of study. Benefits of participation in an internship program for students include higher starting salaries, higher job satisfaction, increased number of job offers, and better career preparation.<sup>48 49</sup> For institutions, benefits of robust internship programs include greater reputation, increased ability to

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<sup>43</sup> Registered Apprenticeship College Consortium. (2014). Registered Apprenticeship College Consortium Articulation Framework. Retrieved from [http://www.doleta.gov/oa/pdf/RACC\\_framework.pdf](http://www.doleta.gov/oa/pdf/RACC_framework.pdf)

<sup>44</sup> Registered Apprenticeship College Consortium. (2014). Registered Apprenticeship College Consortium Articulation Framework. Retrieved from [http://www.doleta.gov/oa/pdf/RACC\\_framework.pdf](http://www.doleta.gov/oa/pdf/RACC_framework.pdf)

<sup>45</sup> Weible, R. (2009). Are universities reaping the available benefits internship programs offer? *Journal of Education for Business*, 85(2), 59-63.

<sup>46</sup> Sweet, R. (2014). *Work based learning: A handbook for policy makers and social partners in EFT partner countries*. Torino, Italy: European Training Foundation. Retrieved from [http://ec.europa.eu/education/library/publications/etf-wbl-handbook\\_en.pdf](http://ec.europa.eu/education/library/publications/etf-wbl-handbook_en.pdf)

<sup>47</sup> Weible, R. (2009). Are universities reaping the available benefits internship programs offer? *Journal of Education for Business*, 85(2), 59-63.

<sup>48</sup> Coco, M. (2000). Internships: A try before you buy arrangement. *SAM Advanced Management Journal*, 65(2), 41-47.

<sup>49</sup> Gault, H., Redington, H., & Schlager, T. (2000) Undergraduate business internships and career success: Are they related? *Journal of Marketing Education*, 22(45). Retrieved from <http://jmd.sagepub.com/content/22/1/45>

recruit top students, external curriculum assessments, and practitioner.<sup>50 51</sup> Especially in vocational education, it is crucial that students receive training in their field to enhance their future careers and personal growth.<sup>52</sup>

Recently, there is a push in higher education to provide internship placement programs for students so that they are able to effectively and efficiently get the experiences they need to move into the work force.<sup>53</sup> However, this must include ensuring that students receive quality internship placements that include sufficient mentorship, since without these things students may not reap the full benefit of experiential education. Further, scholars are now pushing for increased engagement on the part of the employers in students' university education, as well as integration of classroom learning into internship/externship/cooperative learning experiences.<sup>54</sup> This type of engagement has the ability to create quality experiences for both students and employers, and create networks for future career prospects that include both students and alumni. There is also evidence that employers (especially in the private sector) use internships to recruit new employees to their workforce.<sup>55</sup> In fact, 64.8 percent of interns received full-time work offers of the employers surveyed.

In Minnesota, it is ideal for public universities to foster robust partnerships with employers. The Twin Cities metro area is home to 19 Fortune 500 companies and 33 of the nation's top 1000 publically traded companies by revenue.<sup>56</sup> Minnesota is also a strong farming and forestry state and is the country's largest grower of sugar beets, sweet corn, and green peas.<sup>57</sup> Career services for the College of Continuing Education, the College of Design, and the College of Food, Agriculture, and Natural Resources at the University of Minnesota cites that 50 percent of employers expect students to have completed two or three internships by the time they graduate, and therefore devote ample resources to helping students secure internships during their time in their degree program.<sup>58 59</sup> Career Services in

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<sup>50</sup> Divine, R. L., Linrud, J. K., Miller, R. H., & Wilson, J. H. (2007). Required internship programs in marketing: Benefits, challenges and determinants of fit. *Marketing Education Review*, 17(2), 45–52.

<sup>51</sup> Theil, G. R., & Hartley, N. T. (1997). Cooperative education: A natural synergy between business and academia. *SAM Advanced Management Journal*, 62(3), 19–24.

<sup>52</sup> Wan, C., Yang, J., Cheng, S., & Su, C. (2013). A longitudinal on internship effectiveness in vocational higher education. *Educational Review*, 65(1), 36-55.

<sup>53</sup> Wan, C., Yang, J., Cheng, S., & Su, C. (2013). A longitudinal on internship effectiveness in vocational higher education. *Educational Review*, 65(1), 36-55.

<sup>54</sup> Van Rooijen, M. (2011). Transforming 21st century corporate-university engagement: From working-integrated learning (WIL) to learning-integrated work (LIW). *Journal of Cooperative Education and Internships*, 45(1), 5-10.

<sup>55</sup> National Association of Colleges and Employers (2014). 2014 internship and co-op survey. Retrieved October 16, 2014, from <http://www.nacweb.org/>

<sup>56</sup> Fortune 500 2014. (2014). *Fortune*. Retrieved October 17, 2014, from <http://fortune.com/fortune500/wal-mart-stores-inc-1/>

<sup>57</sup> Minnesota Department of Employment and Economic Development (2014). Major industries and sectors. Retrieved October 17, 2014, from <http://mn.gov/deed/business>

<sup>58</sup> Gardner, P.D., Chao, G.T., & Hurst, J. (2008). Ready for prime time? How internships and co-ops affect decisions on full-time job offers [White Paper]. East Lansing, MI: MonsterTRAK and Collegiate Employment Research Institute at Michigan State University. Retrieved from <http://ceri.msu.edu/publications/pdf/internwhitep.pdf>

<sup>59</sup> Regents of the University of Minnesota. (2014a, June 17). Internship overview. Retrieved October 16, 2014, from <http://www.careerhelp.umn.edu/internships.html>

the College of Liberal Arts at the University of Minnesota, beyond helping students to locate and secure internships, offers scholarships for students participating in unpaid internships funded through the college.<sup>60</sup>

In addition to the University of Minnesota, schools from small private liberal arts institutions to community colleges across the state stress the importance of obtaining internships for future employability, which are seen as a necessary supplement to classroom education. Kalamazoo College has successfully integrated experiential learning throughout its programs; most notably through its extensive internship and externship program. The Discovery Externship is particularly successful; through it, each participating student is matched with an alumnus of the school to live and work for one to four weeks. This intense experience is designed to give students a well-rounded understanding of the life lived in their prospective field.<sup>61</sup> Institutional examples such as this one could be key in framing our recommendations for a Minnesota plan.

With current economic conditions, support for work-based education at a national level, as well as the current focus on internship and externship attainment by both colleges and employers, it is important that states and educational institutions continue to support students in obtaining and succeeding in these opportunities. In addition, research shows that quality internship and externship experiences come with ample support and mentorship on both the institutional side as well as the employer side. Exploring ways to support and mentor student development in these opportunities is recommended.

### *Assessment of internships*

Much like other experiential formats, assessment of internships and externships is (and must be, due to the nature of the model) individualized. This often leads departments and individual faculty members to create their own generalized evaluation/assessment form to be used by the internship/externship supervisors of all students working with that faculty member or department. Scientific assessment has been limited to students' expectations or perceptions of learning.<sup>62 63 64 65</sup> Results of studies examining the impact of internships and externships show great benefit for both students and the agencies with which they are placed. However, as Daniel and Daniel point out, key challenges still exist, including the need for expanded assessment during and following internship

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<sup>60</sup> Regents of the University of Minnesota. (2014b, October 16). CLA undergraduate internship scholarship. Retrieved October 16, 2014, from <http://www.clacareer.umn.edu/internships>

<sup>61</sup> Kalamazoo College. (2014). Career and professional development. Retrieved October 6, 2014 from <http://www.kzoo.edu/academics/index.php?p=exed&s=cd>

<sup>62</sup> Eyer, J. T. (1992). Comparing the impact of two internship experiences on student learning. *Journal of Cooperative Education*, 29(3), 41-52.

<sup>63</sup> Hite, R., & Bellizi, J. (1986). Student expectations regarding collegiate internship programs in marketing. *Journal of College Placement*, 8, 41-49.

<sup>64</sup> Gault, H., Redington, H., & Schlager, T. (2000) Undergraduate business internships and career success: Are they related? *Journal of Marketing Education*, 22(45). Retrieved from <http://jmd.sagepub.com/content/22/1/45>

<sup>65</sup> Daniel, R., & Daniel, L. (2013). Enhancing the transition from study to work: Reflections on the value and impact of internships in the creative and performing arts. *Arts and Humanities in Higher Education*, 12(2-3), 138-153.

experiences.<sup>66</sup>

In our research and literature review, no exemplars of state policy oversight of internships and externships could be located to consider when addressing the question of how Minnesota could facilitate statewide use of this model. However, the Department of Labor has put federal rules in place for these activities that would have to be considered. For example, when working with for-profit, private sector employers, interns must be paid unless the internship activities meet the six following criteria:

1. The internship, even though it includes actual operation of the facilities of the employer, is similar to training which would be given in an educational environment;
2. The internship experience is for the benefit of the intern;
3. The intern does not displace regular employees, but works under close supervision of existing staff;
4. The employer that provides the training derives no immediate advantage from the activities of the intern; and on occasion its operations may actually be impeded;
5. The intern is not necessarily entitled to a job at the conclusion of the internship; and
6. The employer and the intern understand that the intern is not entitled to wages for the time spent in the internship.<sup>67</sup>

While these criteria exist to protect interns and ensure that interns have a quality educational experience, the criteria can also complicate the search for internship sites when employers already faced with budget and staffing constraints consider the work involved with educating an intern.

## Cooperative education

Cooperative education programs consist of a relationship between an employer or agency, an educational institution, and a student, that aim to give students an ability to advance in their classroom studies as well as work experience by alternating between periods of work and school throughout their program.<sup>68</sup> Cooperative education programs in the United States typically include two or three 6-month co-op work placements where students earn competitive salaries working in their chosen field.<sup>69</sup> Students enrolled in cooperative education programs show higher career preparedness and professional skill development than traditional students, and are more likely to enroll in graduate school.<sup>70</sup>

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<sup>66</sup> Daniel, R., & Daniel, L. (2013). Enhancing the transition from study to work: Reflections on the value and impact of internships in the creative and performing arts. *Arts and Humanities in Higher Education*, 12(2-3), 138-153.

<sup>67</sup> United States Department of Labor. (2010, April). Fact Sheet #71: Internship programs under the Fair Labor Standards Act. Retrieved October 6, 2013 from <http://www.dol.gov/whd/regs/compliance/whdfs71.pdf>

<sup>68</sup> Groenewald, T. (2004). Towards a definition for cooperative education. In R. K. Coll, & C. Eames (Eds.), *International handbook for cooperative education* (pp. 17-25). Boston, MA: World Association for Cooperative Education.

<sup>69</sup> Northeastern University (2013). Cooperative education and career development. Retrieved October 17, 2014, from <http://www.northeastern.edu/coop/students/overview/>

<sup>70</sup> Worley, D. L. (2010). The benefits of preparation: examining the relationship between integrated work experiences and post-graduation pursuits for baccalaureate completers. *Journal of Cooperative Education & Internships*, 44(1), 23-33.

There are a number of well-attended cooperative education programs in higher education in the United States including programs that span all disciplines at Northeastern University and the Georgia Institute of Technology. The cooperative education program at Northeastern University allows students to enroll in a five-year program with three co-op placements or a four-year program with two co-op placements.<sup>71</sup> Similarly, Georgia Tech's cooperative education program allows students up to a year's worth of professional experience during their five-year degree program.<sup>72</sup> Cooperative education programs are marketed as beneficial for students and their post-college pursuits, and while research indicates these programs may prove beneficial,<sup>73</sup> programs have started marketing the benefits they provide employers and workforce development as well.<sup>74</sup> Cooperative education programs are not as prolific in the United States as internship programs. However, success has been noted in both student development and career exploration as well as employer workforce development.<sup>75 76</sup>

## Online Learning

For decades, various organizations have endeavored to explore how new technologies may be applied to education, and how traditional learning models may be modified. The expansion of the internet has accelerated this trend. Internet-based coursework is now relatively commonplace for postsecondary and high school students, and occasionally younger students, on a global dimension. As with any innovation of this size and scope, there are both new challenges and opportunities presented by online learning. There are a number of different methods and models available, and in the rapid ascension of this format, institutions must be cautious about which avenues they pursue, as various methods have their own sets of benefits and drawbacks.

### Internet-based coursework

In higher education, the availability of online coursework is now nearly ubiquitous, and continues to gain wider acceptance. According to a 2012 survey of roughly three thousand colleges and universities in the United States, *only* 13.5 percent responded that they *do not* have any online offerings, as the number of institutions offering online coursework has climbed steadily for the tenth straight year.<sup>77</sup> A vast majority of institutions surveyed say that they have at least *some* online coursework. The same

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<sup>71</sup> Northeastern University (2013). Cooperative education and career development. Retrieved October 17, 2014, from <http://www.northeastern.edu/coop/students/overview/>

<sup>72</sup> Georgia Institute of Technology. (2010). Undergraduate co-op program. Retrieved October 17, 2014 from [http://www.coop.gatech.edu/about\\_us.html](http://www.coop.gatech.edu/about_us.html)

<sup>73</sup> Jones, J. & Quick, D. (2007). Cooperative education: An educational strategy with links to experiential and connected learning. *Journal of Cooperative Education & Internships*, 41(2), 30-36.

<sup>74</sup> Van Gyn, G., Cutt, J., Loken, M., & Ricks, F. (1997). Investigating the educational benefits of cooperative education: A longitudinal study. *Journal of Cooperative Education & Internships*, 32(1), 70-85.

<sup>75</sup> Brown, S. J. (1984). *The influence of cooperative education on first job after graduation*. Boston: Northeastern University. (ERIC Document Reproduction Service No. ED 254 663).

<sup>76</sup> Worley, D. L. (2010). The benefits of preparation: examining the relationship between integrated work experiences and post-graduation pursuits for baccalaureate completers. *Journal of Cooperative Education & Internships*, 44(1), 23-33.

<sup>77</sup> Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Babson Survey Research Group. Retrieved from <http://www.onlinelearningsurvey.com/reports/changingcourse.pdf>

survey reported that the number of postsecondary institutions offering programs that are *completely* online increased nearly 30 percent in ten years, reaching 62.4 percent of institutions in 2012. Further, the visibility of such coursework within institutions is rising. In 2002, less than one-half of all institutions reported online education was “critical to their long-term strategy”. As of 2012, that number is roughly 70 percent. The role of online coursework has clearly expanded in a dramatic way.

In Minnesota, nearly 120,000 students were enrolled exclusively in college-level online or distance learning courses in 2012, nearly 26 percent of the state’s total college student body, according to statistics from the U.S. Department of Education.<sup>78</sup> An additional 12.6 percent of Minnesota students were enrolled in some, but not exclusively, online or distance courses. These participation rates are roughly 10 percent higher than the national average. Online and distance learning now play a major role in higher education in the state of Minnesota.

Though 77 percent of academic leaders now rate the learning outcomes in online classes “as the same or superior” to those of traditional on-campus courses,<sup>79</sup> some research does not paint an entirely rosy picture of such results. Low completion rates and student engagement are among the most prominent criticisms. One study from the Community College Research Center at Columbia University comparing online coursework with traditional on-campus courses analyzed the enrollment of over 50,000 students of community colleges in Washington State for a period of five years, between 2004 and 2009. They found that “online course completion rates were 8 percentage points lower than face-to-face completion rates.”<sup>80</sup> The format of the online classes, according to the research, contributed to lower success for students. A similar study looking at completion rates among students in the state of Virginia found that the gap was even larger, with online courses having a 12 percent lower completion rate from their classroom based counterparts.<sup>81</sup> The rates of completion for hybrid courses were lower as well. The same study also noted that, “students who took online coursework in early semesters were slightly less likely to return to school in subsequent semesters, and students who took a higher proportion of credits online were slightly less likely to attain an educational award or transfer to a four-year institution.” Considering this negative relationship between online coursework and student persistence, online coursework may be less than ideal if the ultimate goal is higher graduation rates.

With regard to those drawbacks there are important contexts that must be considered. Namely, online courses often fulfill student need. This need is visible in the headline of a 2013 Wall Street Journal article which proclaimed, “Non-Traditional’ Students Are Majority on College Campuses”. American college students are no longer the relatively homogenous group we often visualize. The article touts data from the U.S. Department of Education, and notes that of the roughly 18 million undergraduate students in the United States in the 2011-2012 school year, “Nearly a million were at least 25, and

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<sup>78</sup> United States Department of Education. (2014). Enrollment in distance education courses, by state: Fall 2012. Washington, D.C.: Author. Retrieved from <http://nces.ed.gov/pubs2014/2014023.pdf>

<sup>79</sup> Allen, I. E., & Seaman, J. (2013). Changing course: Ten years of tracking online education in the United States. Babson Survey Research Group. Retrieved from <http://www.onlinelearningsurvey.com/reports/changingcourse.pdf>

<sup>80</sup> Xu, D., & Jaggars, S. S. (2011). Online and Hybrid Course Enrollment and Performance in Washington State Community and Technical Colleges. New York, NY: Community College Research Center, Columbia University. Retrieved from <http://67.205.94.182/media/k2/attachments/online-hybrid-performance-washington.pdf>

<sup>81</sup> Xu, D., & Jaggars, S. S. (2010). Online Learning in the Virginia Community College System. New York: NY: Community College Research Center, Columbia University. Retrieved from <http://67.205.94.182/media/k2/attachments/online-learning-virginia.pdf>

nearly half a million were in their 30s or older.” After subtracting students of non-traditional ages, including removing part-time students and students at for-profit institutions, there are just 5 million “traditional students” remaining, only roughly 30 percent of the undergraduate student population.<sup>82</sup> This is significant because the needs of the non-traditional student population are often different. Non-traditional students often face logistical challenges not encountered by more traditional undergraduates. Many of them are employed or have children and familial, or professional obligations. Thus, they are often unable to physically get to a campus or meet the schedule demands of traditional programs. Online courses, which may allow for a more flexible schedule and can be completed from anywhere, offer a more viable alternative for many of them. Due to these concerns, the option of internet-based courses may be crucially important for this demographic.

## Flipping the classroom

Recently, a specific model of hybrid learning has gotten a great deal of attention. The so-called “Flipped Classroom,” is a model in which students use technology to complete some coursework outside of the classroom and spend class-time doing hands-on activities. The Center for Teaching at Vanderbilt University described the concept thusly:

In essence, “flipping the classroom” means that students gain first exposure to new material outside of class, usually via reading or lecture videos, and then use class time to do the harder work of assimilating that knowledge, perhaps through problem-solving, discussion, or debates....This means that students are doing the lower levels of cognitive work (gaining knowledge and comprehension) outside of class, and focusing on the higher forms of cognitive work (application, analysis, synthesis, and/or evaluation) in class, where they have the support of their peers and instructor. This model contrasts from the traditional model in which “first exposure” occurs via lecture in class, with students assimilating knowledge through homework; thus the term “flipped classroom.”<sup>83</sup>

Driven by research showing positive results and student gains, the flipped classroom model has received significant interest and publicity. Noted science advocate and children’s television figure Bill Nye declared that he thinks the flipped classroom is “the future.”<sup>84</sup> In 2012, two American teachers founded a group called the Flipped Learning Network to advocate for the format and help educators across the country make the switch. Within one year, the organization grew precipitously from 2,500 members to nearly 11,000.<sup>85</sup> Clearly, there is a lot of momentum and excitement behind the possibilities lying within the flipped classroom.

That excitement is driven by what advocates claim are significant student benefits. Some of these benefits are evident in studies done at the high school level. One study conducted at Byron High School in Minnesota found that after “flipping” math classrooms, student performance on the state

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<sup>82</sup> Casselman, B. (2013). Number of the week: ‘Non-Traditional’ students are majority on college campuses. Wall Street Journal. Retrieved from <http://blogs.wsj.com/economics/2013/07/06/number-of-the-week-non-traditional-students-are-majority-on-college-campuses/>

<sup>83</sup> Brame, C., (2013). Flipping the classroom. Vanderbilt University Center for Teaching. Retrieved from <http://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/>

<sup>84</sup> KARE (2012, October 18). Bill Nye the Science Guy talks creative classrooms. KARE 11. Retrieved from [http://origin.kare11.com/science\\_technology/article/995133/484/Bill-Nye-the-Science-Guy-talks-creative-classrooms](http://origin.kare11.com/science_technology/article/995133/484/Bill-Nye-the-Science-Guy-talks-creative-classrooms)

<sup>85</sup> Atteberry, E. (2013, December 5). ‘Flipped classrooms’ may not have any impact on learning. USA Today. Retrieved from <http://www.usatoday.com/story/news/nation/2013/10/22/flipped-classrooms-effectiveness/3148447/>

math test more than doubled from performance three years earlier.<sup>86</sup> A similar study was conducted in at Clintondale High School in Michigan, which had implemented flipped classrooms for all of its freshmen. In describing the results, the Flipped Learning Network notes, “failure rates dropped by as much as 33 percentage points. The number of student discipline cases fell from 736 in 2009 to 249 in 2010 and to 187 in 2011, a drop of 74 percent in two years. Parent complaints also dropped, from 200 down to seven after the change in instructional models. Encouraged by these results, the principal converted the entire school to the Flipped Learning model in fall 2011.”<sup>87</sup> Similar statistics are available for postsecondary classrooms. In a comparison of two classes, one flipped and the other traditional, students were given a test, and results showed that students in the flipped/inverted section fared significantly better, “with students in the inverted class answering 31.2 percent of questions correctly, and those in a traditional class answering 24.1 percent of questions correctly.”<sup>88</sup>

There are also bodies of statistics showing significant support among teachers. A study conducted by the Flipped Learning Network, which advocates for the format, of teachers who worked in the format found that two-thirds reported increases in standardized test scores after converting.<sup>89</sup> Nearly 80 percent reported an improvement in student attitudes. Nine out of ten reported that their own job satisfaction proved; 46 percent said that the improvement was “significant”. Another study at Columbia University found that eight out of ten students in flipped classrooms said that they have “more constant and positive interactions with teachers and peers during class time; ... more access to course materials and instruction; are more able to work at their own pace; they can exercise more choice in how they demonstrate their learning; and they viewed learning as a more active process.”<sup>90</sup>

Not all studies observed student gains when flipping classrooms. One such study conducted by professors at Harvey Mudd College in California featured professors teaching two versions of the same course, one flipped and one traditional. In measuring the impact of the format, they found that on a number of metrics such as student attitudes, knowledge transferability, and exam results, there were no significant demonstrable differences between the two groups of students.<sup>91</sup> One professor involved in the study said, "I would say that the fact is that there is no statistical difference. People are really gung ho about the (flipped) classroom, but there's [sic] no real results." Given the inconsistencies in research regarding effectiveness of this model on student learning and development, we are interested in exploring this model inasmuch as it resonates with administrators and faculty as well as with institutional mission and goals. Another study conducted by Johnson and Renner showed no

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<sup>86</sup> Hamdan, N., McKnight, P., & Arfstrom, K. (2013). A review of flipped learning. Flipped Learning Network. Retrieved from [http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview\\_FlippedLearning.pdf](http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview_FlippedLearning.pdf)

<sup>87</sup> Hamdan, N., McKnight, P., & Arfstrom, K. (2013). A review of flipped learning. Flipped Learning Network. Retrieved from [http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview\\_FlippedLearning.pdf](http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview_FlippedLearning.pdf)

<sup>88</sup> Hamdan, N., McKnight, P., & Arfstrom, K. (2013). A review of flipped learning. Flipped Learning Network. Retrieved from [http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview\\_FlippedLearning.pdf](http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview_FlippedLearning.pdf)

<sup>89</sup> Hamdan, N., McKnight, P., & Arfstrom, K. (2013). A review of flipped learning. Flipped Learning Network. Retrieved from [http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview\\_FlippedLearning.pdf](http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview_FlippedLearning.pdf)

<sup>90</sup> Driscoll, Tom. (2012). Flipped learning and democratic education: The complete report. Flipped History. Retrieved from <http://www.flipped-history.com/2012/12/flipped-learning-democratic-education.html>

<sup>91</sup> Atteberry, E. (2013, December 5). 'Flipped classrooms' may not have any impact on learning. USA Today. Retrieved from <http://www.usatoday.com/story/news/nation/2013/10/22/flipped-classrooms-effectiveness/3148447/>

differences in test scores between students in flipped college-level computer applications course and those in the traditional version.<sup>92</sup>

**Massive online open courses.** Even with the hype that the flipped model has received in recent years, it still pales in comparison to the amount of ink spilled in discussing a more recent innovation, that of the massive open online course, colloquially known as a “MOOC”, defined by McAuely et al. as:

[A]n online course with the option of free and open registration, a publicly-shared curriculum, and open-ended outcomes. MOOCs integrate social networking, accessible online resources, and are facilitated by leading practitioners in the field of study... MOOCs share in some of the conventions of an ordinary course, such as a predefined timeline and weekly topics for consideration, but generally have no fees, no prerequisites other than Internet access and interest, no predefined expectations for participation, and no formal accreditation.<sup>93</sup>

MOOCs are online courses featuring video-based lectures or online modules that are open to any member of the public, with the only real requirement being access to an internet connection. Thus, the potential audience is truly global. Stanford offered one of the first of these in 2011 on the topic of artificial intelligence.<sup>94</sup> Over 160,000 students enrolled in the course, with roughly 20,000 completing it. Shortly thereafter, one professor involved with that Stanford course founded the company now known as Udacity to develop and offer MOOCs, while two other Stanford professors founded the competitor Coursera. Harvard and MIT also formed the collaborative edX partnership, expanding the field further. In a very short period of time, the MOOC exploded into the culture of higher education, so much so that New York Times columnist Thomas Friedman boisterously declared “Welcome to the college education revolution.”<sup>95</sup> By spring 2013, roughly a year after its founding, Udacity offered two-dozen courses in the MOOC format, with 90,000 students registered in its first two offerings alone.<sup>96</sup> At that same time, Coursera had developed agreements with 70 higher education partners, and now including prestigious universities such as Stanford, Johns Hopkins, Penn State, and Princeton.

The University of Minnesota began offering MOOCs in the spring of 2013, announcing an exclusive partnership with Coursera to initially offer five courses, which later expanded.<sup>97</sup> These courses, like most MOOCs, did not offer credit, but required several hours of work per week on the part of the student and gave the option to receive certificates of completion. While garnering large amounts of

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<sup>92</sup> Johnson, L., & Renner, J. (2012). Effect of the flipped classroom model on secondary computer applications course: student and teacher perceptions, questions and student achievement (Unpublished doctoral dissertation). University of Louisville. Retrieved from <http://theflippedclassroom.files.wordpress.com/2012/04/johnson-renner-2012.pdf>

<sup>93</sup> McAuely, A., Stewart, B., Siemens, G., & Cormier, D. (2010). The MOOC model for a digital practice. Creative Commons Attribution. Retrieved from [http://www.elearnspace.org/Articles/MOOC\\_Final.pdf](http://www.elearnspace.org/Articles/MOOC_Final.pdf)

<sup>94</sup> Ha, T. (2014, January 27). What's a MOOC – and where are they going next? TED. Retrieved from <http://ideas.ted.com/2014/01/27/whats-next-for-moocs/>

<sup>95</sup> Friedman, T. (2012, May 15). Come the Revolution. The New York Times. Retrieved from <http://www.nytimes.com/2012/05/16/opinion/friedman-come-the-revolution.html>

<sup>96</sup> Baggaley, J. (2014). MOOC postscript. *Distance Education*, 35(1), 126-132. Retrieved from <http://dx.doi.org/10.1080/01587919.2013.876142>

<sup>97</sup> Ross, J. (2013b). Mid-MOOC, a University of Minnesota professor checks in. *Star Tribune*. Retrieved from <http://www.startribune.com/local/213238311.html>

local press attention, one of the first U of M MOOCs was completed by only 2 percent of enrollees,<sup>98</sup> a relatively low figure. Despite the high profiles of MOOC endeavors, most institutions nationally remain undecided about the format, seeming to be taking a “wait & see” approach. According to one survey, “Only 2.6 percent of higher education institutions currently have a MOOC, another 9.4 percent report MOOCs are in the planning stages.”<sup>99</sup>

One of the largest issues confronting the future of MOOCs is that of credentialing and the offering of academic credit. Being that the format is so new and changing rapidly, there is not currently a uniform or even widely accepted model for the incorporation of MOOCs into academic programs. There is a lot of confusion and inconsistency in institutional attitude and treatment across higher education. Part of the problem is verification and integrity—there is no commonly accepted way to verify student outcomes and ensure that it was the student themselves who completed the course.

Colorado State University in 2012 became the first institution in the United States to offer formal academic credit for a MOOC, in this case one offered by Udacity. As the Chronicle of Higher Education reported at the time, “In order to earn the three transfer credits toward their bachelor's degrees at the Global Campus, students will need a “certificate of accomplishment” from Udacity showing they passed the course. Then they have to pass a proctored examination offered by Udacity through a secure testing center.”<sup>100</sup> In 2013, further ground was broken when the American Council on Education (ACE) endorsed five Coursera MOOCs for credit, meaning that the group recommended to its 1,800 member colleges that they provide students with academic credit for the MOOCs’ completion.<sup>101</sup> The Coursera MOOCs in question also use a third party testing company that uses webcams to ensure academic integrity during exams.

A report from Universities UK has identified the existence of four major models for MOOC credentialing, as detailed by Sandeen, 1) credit recognition, in which institutions accept MOOCs for credit pending completion of an assessment or faculty approval; 2) recognition of prior learning, in which institutions may use MOOC completion in the admission decision process, much like AP or dual enrollment courses; 3) content licensing, which Sandeen notes seems to be the most popular and in which institutions partially utilize MOOCs for inclusion in campus-based courses; and finally, 4) reciprocal arrangements, in which consortia of colleges or universities agree to accept each other’s MOOCs for credit.<sup>102</sup>

Just as the hype and hopes for MOOCs grew rapidly, there also seems to be a growing number of skeptics. According to one survey of campus information technology (IT) administrators, optimism about MOOCs had dulled considerably. A Chronicle of Higher Education article observed in 2014:

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<sup>98</sup> Bekker, J. (2014). MOOCs on the rise, 'evolving' at U. Minnesota Daily. Retrieved from [http://blog.lib.umn.edu/hhhevent/hhh\\_in-the-news/9.25.2014\\_Banks\\_mndaily\\_mooc.pdf](http://blog.lib.umn.edu/hhhevent/hhh_in-the-news/9.25.2014_Banks_mndaily_mooc.pdf)

<sup>99</sup> Allen, I. E., & Seaman, J. (2013). Changing course: Ten years of tracking online education in the United States. Babson Survey Research Group. Retrieved from <http://www.onlinelearningsurvey.com/reports/changingcourse.pdf>

<sup>100</sup> Mangan, K. (2012a). A First for Udacity: Transfer Credit at a U.S. University for One of Its Courses. The Chronicle of Higher Education. Retrieved October 20, 2014, from <http://chronicle.com/article/A-First-for-Udacity-Transfer/134162/>

<sup>101</sup> Kolowich, S. (2013, February 7). American Council on Education Recommends 5 MOOCs for Credit. The Chronicle of Higher Education. Retrieved from <http://chronicle.com/article/American-Council-on-Education/137155/>

<sup>102</sup> Sandeen, C. (2013). Integrating MOOCs into Traditional Higher Education: The Emerging ‘MOOC 3.0’ Era. Change: The Magazine of Higher Learning, 45(6), 34-39. Retrieved from <http://dx.doi.org/10.1080/00091383.2013.84210>

“While a little more than half of last year’s respondents thought MOOCs “offer a viable model for the effective delivery of online instruction,” just 38 percent of this year’s participants agreed with that statement. And only 19 percent of respondents in 2014 said MOOCs could generate new revenue for colleges, down from 29 percent last fall.”<sup>103</sup> One professor at Harvard was quoted as saying, “We’re already in a post-Mooc era.”<sup>104</sup>

A possible area of opportunity for MOOCs may exist in the non-traditional student community, however. As Sandeen noted, “As of January 2013, the majority of students enrolled in Coursera’s MOOCs, just over 88 percent, had already earned one or more degrees”<sup>105</sup> MOOCs may find a market and provide valuable services in fields where continuing education and the constant updating of skills are necessary, such as technology. On the other end of the spectrum, there may be opportunities for MOOCs to serve a role *before* college. EdX, the collaboration between MIT and Harvard has begun to specifically target high school students, in hopes that they, as the CEO of EdX said, “will give more high school students exposure to higher-level coursework, allowing them to enter college having already completed many of their first-year classes.”<sup>106</sup> In the future, students could perhaps use MOOCs as they do advanced placement or dual enrollment programs. This may be a viable approach, as a joint report by the National Center for Public Policy and Higher Education and the Southern Regional Education Board found a significant gap between high school success and college readiness as “nearly 60 percent of first-year college students discover that, despite being fully eligible to attend college, they are not academically ready for postsecondary studies.”<sup>107</sup> MOOCs may be able to address that gap at a relatively low cost.

### *Assessment of MOOCs*

Massive open online courses (MOOCs) have been run by a variety of institutions of higher education since 2008.<sup>108</sup> However, assessment of the method has been limited. In both Karsenti’s<sup>109</sup> and Liyanagunawardena, Adams, and Williams’<sup>110</sup> extensive reviews of the research and literature surrounding MOOCs, the discussion of assessment is focused on assessment of student learning within

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<sup>103</sup> Koenig, R. (2014). Optimism About MOOCs Fades in Campus IT Offices. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/blogs/wiredcampus/optimism-about-moocs-fades-in-campus-it-offices-survey-finds/54705>

<sup>104</sup> Coughlan, S. (2013, September 24). Harvard plans to boldly go with 'Spocs'. *BBC News*. Retrieved from <http://www.bbc.com/news/business-24166247>

<sup>105</sup> Sandeen, C. (2013). Integrating MOOCs into Traditional Higher Education: The Emerging ‘MOOC 3.0’ Era. *Change: The Magazine of Higher Learning*, 45(6), 34-39. Retrieved from <http://dx.doi.org/10.1080/00091383.2013.84210>

<sup>106</sup> Atkeson, S. (2014, September 23). Harvard-MIT partnership opens MOOCs for high schoolers. *Education Week*. Retrieved from <http://www.edweek.org/ew/articles/2014/09/24/05moocs.h34.html>

<sup>107</sup> National Center for Public Policy and Higher Education and Southern Regional Education Board. (2010, June). *Beyond the rhetoric: Improving college readiness through coherent state policy*. Retrieved from [http://www.highereducation.org/reports/college\\_readiness/CollegeReadiness.pdf](http://www.highereducation.org/reports/college_readiness/CollegeReadiness.pdf)

<sup>108</sup> Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distance Learning*, 14(3), 202-227.

<sup>109</sup> Karsenti, T. (2013). What the research says. *International Journal of Technologies in Higher Education*, 10(2), 23-37.

<sup>110</sup> Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distance Learning*, 14(3), 202-227.

the courses through various quizzes and exams.

When MOOCs were first introduced, there was a tunnel vision focus on access. While access is certainly important, attempts to achieve it without setting additional goals tied to institutional mission, vision, and values, and considering all stakeholders are likely to be short-lived, and futile. While MOOCs gave great attention to access for all potential students by being open and online, the authorship rights of faculty stakeholders were sacrificed to streamline the process through use of third party agencies.<sup>111</sup> Discussion of impact still focuses on access, and personal intrinsic benefits such as the development of autonomy, participation in a learning community, and general satisfaction.<sup>112</sup> Fox concedes that the potential pedagogical impact of MOOCs still needs to be researched.<sup>113</sup> The National Institute for Learning Outcomes Assessment states that without evidence of reflection on and application of new knowledge, the effectiveness of MOOCs remains in doubt.<sup>114</sup> <sup>115</sup> Unfortunately, no exemplar of MOOC assessment could be found to support discussion of expansion of the model in Minnesota.

In 2012 when the popularity of MOOCs was rising, the Minnesota Office of Higher Education initially banned Coursera from operating within the state due to an existing statute requiring any institution offering online courses within the state to first register with the agency.<sup>116</sup> However, after a brief but intense backlash, the state reversed course and encouraged Minnesotans to take advantage of these free opportunities to expand their horizons.<sup>117</sup> At the present time, two schools in Minnesota are offering MOOCs: the University of Minnesota is offering a wide variety through Coursera, and the College of Saint Scholastica is offering a few classes, including some which offer free continuing education credits to working professionals.<sup>118</sup> <sup>119</sup> However, where credit is not offered, MOOC participation is limited, even among those who sign up. A University of Minnesota MOOC held in the summer of 2013 had 27,500 enrollees. Of these, 15,000 participated; about 10,000 watched a video

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<sup>111</sup> Baggaley, J. (2013). MOOC rampant. *Distance Education*, 34(3), 368-378. . Retrieved from <http://dx.doi.org/10.1080/01587919.2013.835768>

<sup>112</sup> Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distance Learning*, 14(3), 202-227.

<sup>113</sup> Fox, A. (2013). From MOOCs to SPOCs: Supplementing the classroom experience with small private online courses. *Viewpoints*, 56(12), 38-40. Doi: 10.1145/2535918

<sup>114</sup> Boston, W., and Helm, J.S. (2012) Why student learning outcomes assessment is key to the future of MOOCs. National Institute for Learning Outcomes Assessment. Retrieved from <http://illinois.edu/blog/view/915/84723#blog-feature>

<sup>115</sup> Meisenhelder, S. (2013). MOOC mania. *Thought and Action*, 29, 7-26.

<sup>116</sup> Mangan, K. (2012b). Minnesota gives Coursera the boot, citing a decades-old law. *The Chronicle of Higher Education*, Oct. 18, 2012. Retrieved from <http://chronicle.com/blogs/wiredcampus/minnesota-gives-coursera-the-boot-citing-a-decades-old-law/40542>

<sup>117</sup> Lepi, K. (2012). Minnesota no longer banning Coursera. *Edudemic*, October 22, 2012. Retrieved from <http://www.edudemic.com/minnesota-no-longer-banning-coursera/>

<sup>118</sup> Friedrich, A. (2014). 'Massive Open Online Course' movement sputters as students underperform, drop out. *MPR News*. Retrieved from <http://www.mprnews.org/story/2014/05/04/moocs-not-living-up-to-the-hype-as-students-underperform-and-drop-out>

<sup>119</sup> Massive Open Online Courses. (2014). Retrieved October 13, 2014, from <http://www.css.edu/Graduate/Non-Degree/Massive-Open-Online-Courses.html>

and 5,000 had taken a quiz at the halfway point of the class.<sup>120</sup>

Despite low participation, some see great potential in MOOCs to contribute both to student learning and research in and about higher education.<sup>121 122 123</sup> At the same time, institutions such as Harvard, who had embraced the model early on are now denouncing the model and moving toward other options—in Harvard’s case, small private online courses (SPOCs).<sup>124</sup> Without a more solid set of goals, rewards, and assessments, limited participation is likely to continue, and the effectiveness of MOOCs remains in question.

## Making Models Work: Exemplars

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The following two case studies both examine institutions that have coupled competency-based direct assessment programs with online content delivery. Western Governors University pioneered this approach by using elements of direct assessment to attract distance learners nationwide. More recently, the University of Wisconsin System has introduced “pure” online direct assessment programs to serve state residents.

### Western Governors University

Western Governors University (WGU) represents a concerted effort by policy leaders to legitimize a non-traditional model of higher education. A nonprofit, private institution based in Salt Lake City, WGU has its origins in a 1995 meeting between governors from western states including Utah, Colorado and Wyoming, to address the question of how to increase higher education capacity without hiring additional tenured faculty or incurring significant construction costs.<sup>125</sup> Ultimately, 18 governors endorsed the creation of WGU, which first admitted students in 1999.

WGU exclusively uses online competency-based learning for its students. It utilizes direct assessment in a ‘subscription-based’ model where students, with the guidance of faculty and support of assigned mentors, pay a flat rate for a six-month window. Within this window students may pursue as many ‘competency units’ as they desire. A combination of multiple-choice tests and ‘performance assessments,’ which can consist of anything from written essays to a recorded presentation and which are assessed by a separate team of graders, are used to confirm competencies. It is notable that students are not informed exactly what questions they answer incorrectly or where their performance

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<sup>120</sup> Ross, J. (2013a). University of Minnesota signs on to offer free online classes. *Star Tribune*. Retrieved from <http://www.startribune.com/local/192182401.html>

<sup>121</sup> Fox, A. (2013). From MOOCs to SPOCs: Supplementing the classroom experience with small private online courses. *Viewpoints*, 56(12), 38-40. Doi: 10.1145/2535918

<sup>122</sup> Kay, J., Reimann, P., Diebold, E., & Kummerfeld, B. (2013). MOOCs: So many learners, so much potential... *IEEE Intelligent Systems*, 28(3), 70-77.

<sup>123</sup> Karsenti, T. (2013). What the research says. *International Journal of Technologies in Higher Education*, 10(2), 23-37.

<sup>124</sup> Baggaley, J. (2014). MOOC postscript. *Distance Education*, 35(1), 126-132. Retrieved from <http://dx.doi.org/10.1080/01587919.2013.876142>

<sup>125</sup> Connell, C. (2011). Case study: At no-frills Western Governors University, the path to a college degree is only as long as students make it. Washington, D.C.: The Hechinger Institute. Retrieved from [http://hechinger.tc.columbia.edu/case\\_studies/wgu\\_case\\_study.pdf](http://hechinger.tc.columbia.edu/case_studies/wgu_case_study.pdf)

is unsatisfactory—instead, they and their mentors are informed of weaknesses that need improving, and which specific skills to work on before the competency unit is considered earned.<sup>126</sup>

Many reformers in the federal government are enamored with WGU and its model of linking competency units to credit hours. For example, Secretary of Education Arne Duncan, said in Fall 2011 that he wanted institutions like WGU “to be the norm.”<sup>127</sup> However, the model also faces challenges. In 2005 Congress passed a law targeting WGU that allowed institutions to apply for Title IV funding for direct assessment programs that do not link competencies to credit hours. While WGU opted to retain its current model, an important precedent was set. Amy Laitenen, a higher education researcher currently at New America Foundation, said this regarding the law, “The link may not have been broken in the way people think, and it is still largely constrained...but it has been broken.”<sup>128</sup>

After nearly a decade of uncertainty regarding the role of the federal government in funding direct assessment, a major shift has been witnessed within the Department of Education (DOE) in the past year. Enterprising institutions had developed direct assessment programs following the 2005 Western Governors decision, but had hesitated to apply for federal funding. The catalyst appears to have come in the form of an open letter by the DOE actively reaching out to colleges interested in direct assessment and encouraging them to seek Title IV approval for programs that do not base learning on credit hours.<sup>129</sup> The same week that letter was released, department officials said in a statement that Southern New Hampshire’s College for America, which decouples seat time and learning, would receive approval for funding.<sup>130 131</sup>

While excelling within the niche it has established within the distance learning market, WGU’s multistate origins do not represent an easily-replicated template for the State of Minnesota. However, WGU’s success has contributed to a sea change in the federal government’s handling of direct assessment.

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<sup>126</sup> Connell, C. (2011). Case study: At no-frills Western Governors University, the path to a college degree is only as long as students make it. Washington, D.C.: The Hechinger Institute. Retrieved from [http://hechinger.tc.columbia.edu/case\\_studies/wgu\\_case\\_study.pdf](http://hechinger.tc.columbia.edu/case_studies/wgu_case_study.pdf)

<sup>127</sup> Lewin, T. (November 29, 2011). Official calls for urgency on college costs. The New York Times. Retrieved from [http://www.nytimes.com/2011/11/30/education/duncan-calls-for-urgency-in-lowering-college-costs.html?\\_r=0](http://www.nytimes.com/2011/11/30/education/duncan-calls-for-urgency-in-lowering-college-costs.html?_r=0)

<sup>128</sup> Lederman, D. (2012). Credit hour (still) rules. Inside Higher Ed. Retrieved from <https://www.insidehighered.com/news/2012/04/30/wgu-example-shows-chilly-policy-climate-competency-based-education>

<sup>129</sup> Bergeron, D.A. (March 19, 2013). Applying for Title IV eligibility for direct assessment (competency-based) programs. Dear Colleague Letter. Washington, DC: United States Department of Education. Retrieved from <https://ifap.ed.gov/dpclletters/GEN1310.html>

<sup>130</sup> Fain, P. (2013). Beyond the credit hour. Inside Higher Ed. Retrieved from <https://www.insidehighered.com/news/2013/03/19/feds-give-nudge-competency-based-education>

<sup>131</sup>In addition to College for America, SNHU offers an innovative “module-based” 3-year baccalaureate program for an honors business degree, where the time spent on subjects is not set at 12 weeks, but is based on the estimated time to achieve desired competencies.

# University of Wisconsin's Flexible Option

In September of 2014, for the first time, a public higher education system was given approval for federal aid for a competency-based education program, the UW Flexible Option.<sup>132</sup> Geared toward adult learners, the Flexible Option represents a partnership between the campuses and the system.

Laura Kite, the Project Director of the UW Flexible Option, discussed the program, the process of Title IV approval, and the challenges of integrating online competency-based programs into traditional educational institutions in an interview with the authors.<sup>133</sup> The majority of the information presented here is a product of the interview with Kite; outside information is cited as appropriate.

In January, the University of Wisconsin's Extension office filed for Title IV funding for a competency-based Flexible Option ("Flex") version of the UW Colleges' Associate of Arts & Science degree. This degree transfers to fulfill general education requirements at all University of Wisconsin four-year institutions, including UW-Madison, allowing students to enter these institutions as juniors.

UW administrators submitted this two-year Flex program application to the Department of Education as an iterative "test run": they incorporated feedback from that program into the applications for the four programs at UW-Milwaukee for which they had crafted Flex programs. The original application for UW Colleges and the program that was approved for Title IV funding differed on several metrics such as how satisfactory academic progress and student engagement were defined. Subsequently, UW submitted the application for the UW-Milwaukee programs, which include a Bachelor of Science in Nursing and a Bachelor of Science in Biomedical Sciences Diagnostic Imaging.<sup>134</sup>

Like the majority of competency-based programs, returning adult students represent the target candidates for all iterations of the Flexible Option. Faculty design competency tests, identify exit competency goals, and ensure that "competency sets" (the Flex version of courses) align with articulated program competencies. They are "content curators" of supporting materials for competency sets that aid students' self-paced learning. Aiding faculty in porting over traditional coursework to an online competency-based format are specialized Instructional Designers. A representative of the American Association of Colleges & Universities aided in training, however the majority of professional development efforts took place "in-house." Students sign up for three-month long subscription periods, either in an "All-You-Can-Learn" format with a flat tuition rate of \$2,250, or a "Single Competency Set" option for \$900.

Students are assigned professional advisors, called "Academic Success Coaches." These help students navigate the structure of their programs and assess prior learning. They can direct a student to competency assessments that he or she might be prepared to test for with only a minimum of studying the curated support materials. Flex programs do not conduct portfolio reviews for prior learning credit.

As mentioned previously, a "competency set" refers to a linked series of competencies which, taken together, represent the equivalent of a traditional course. For now, a transcript from a Flexible Option

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<sup>132</sup> UW System receives approval to award federal financial aid for a competency-based UW Flexible Option program. (2014). UW System News. Retrieved from <http://www.wisconsin.edu/news/2014/r140902.htm>

<sup>133</sup> Kite, L. (November 6, 2014). Phone interview with Greg Lewin.

<sup>134</sup> The non-healthcare tracks offered in the UW-Milwaukee Flex programs are a Bachelor of Science in Information Science and Technology and a Business and Technical Communications Certificate.

program will map back to courses and credits for transfer purposes. This “Flex Transcript” includes these equivalencies alongside a competency-based section that more fully outlines the competencies that make up the sets (courses) and the program that those sets serve. While already substantially more informative than traditional formats listing only professors and course numbers and titles, Flexible Option administrators envision a “more transformative transcript” in the future.

To ensure a highly personalized experience for students, and to help calibrate the program for future cohorts, enrollment in the programs was deliberately capped. 150 students enrolled in the Colleges and Milwaukee programs for the August-October subscription period. As Kite explained: “Anticipating student behavior is very difficult, you just have to test it. It’s a case of policy vs. practice.” Anticipating how many students one Success Coach could handle comprised one such logistical hurdle—initially one Coach had been assigned for students in the Nursing program, but students’ need for intensive guidance required that more be brought on board.

Learning assessments take a wide variety of forms. Pre-tests often take the traditional online form of multiple choice quizzes, but the high-stakes assessments to earn competencies range from short answer essays, to full research papers, to demonstrating proficiency with medical equipment at a student’s workplace for the Diagnostic Imaging program.

Several other campuses are now designing Flexible Option programs. UW-Parkside applied November 1, 2014 for federal funding for certificate programs in Sales and Global Skills; competency sets for these began in March 2015. Parkside envisions these as the first steps towards a “stackable” degree where four to six certificates are attained and a “professional studies” degree is conferred. They must overcome certain procedural hurdles set by the Higher Learning Commission before they can advertise this innovative degree, however. UW-Stevens Point will apply in September for a certificate in Geographic Information Systems. Stevens Point envisions a full G.I.S. competency-based graduate program in the future. UW-Madison has committed to offering a non-credit certificate in Alcohol and Other Drug Abuse (AODA) Counseling, coordinated through its Division of Continuing Studies, with support from the School of Social Work. Finally, UW-Stout is assessing market demand for a certificate program, possibly at the graduate level, in Project Management.

Prior to applying for Title IV funding, the DoE’s March 2013 ‘Dear Colleague’ letter encouraging direct assessment programs first prompted UW to seek regional accreditation for both the UW Colleges and UW-Milwaukee’s Flexible Option programs. The Higher Learning Commission announced their approval of both institutions’ programs that July.<sup>135</sup> While, according to Kite, “institutions from different regions have had different experiences when dealing with accreditors,” in this case “productive questions were asked...[HLC representatives] were very open and conversational.”

Institutional pushback recently manifested from within the Department of Education, however. On November 4<sup>th</sup>, UW-Extension got their first round of questions back for the UW- Milwaukee programs. In a problematic development, the DOE is now questioning definitions of student progress and engagement that had already been refined and approved for the Colleges degree. \ Kite identified a September 30<sup>th</sup> audit report from the DOE’s Office of the Inspector General as the source of this new recalcitrance: the report criticized the new standards for the competency-based program approval

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<sup>135</sup> UW Flexible Option. (2013a). UW institutions approved to offer Flexible Option degrees. Author. Retrieved from <http://flex.wisconsin.edu/uw-institutions-approved-to-offer-flexible-option-degrees/>

process.<sup>136</sup> Kite was not surprised that the government is struggling to establish consistent standards: “Competency-based education has been around forever, but it has only existed in these niche pockets; now it is coming out of the shadows. ... They are having to deal with it in a different way.”

## Recommendations: Constructing Possible Alternatives for Minnesota

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Given the myriad directions our recommendations could take from our broad analyses of a number of different alternative models, we have decided to focus our recommendations according to a few criteria.

- First, we offer recommendations based on the maximization of efficiency towards access and completion without sacrificing quality. By doing so, we believe we are best able to address both Obama’s mandate<sup>137</sup> to improve college completion as well as address the crises of credit waste and dwindling public funding.
- Second, we make recommendations based on the relative feasibility given current policy and economic environments. In this way, we are able to maximize the impact of resource allocation given our particular context in Minnesota.

### Develop Competency-based Online Direct Assessment Programs

Although the landscape of direct assessment continues to shift, the Flexible Option represents a viable template for consideration. Unlike the UW System, MnSCU does not recognize a specific “transfer degree”: they rely on the Minnesota Transfer Curriculum (MnTC). A student must complete 10 “Goals Areas” (breadth requirements) and at least 40 credits from within the goals to be awarded the Minnesota Transfer Curriculum (<http://www.mntransfer.org>). The University of Minnesota system accepts the MnTC for guaranteed transfer through the Minnesota Cooperative Admissions Program, but only for seven of the 21 MnSCU community colleges (<http://admissions.tc.umn.edu>). Extending this program to other two-year and four-year campuses in the MnSCU system, and establishing guaranteed credit transfers, would situate Minnesota as a national leader in combatting our present credit wastage and time-to-degree crises. The Liberal Arts & Sciences degree offered at many MnSCU two-year institutions appears to be designed for students intending to transfer to a baccalaureate program; should MnSCU decide to implement an online direct assessment program, this degree appears to represent a viable candidate for a guaranteed transfer associate program equivalent to Wisconsin’s Associate of Arts & Science. Also worth exploring are four-year degree completion programs in healthcare fields, as are being proposed for UW-Milwaukee, given Ong’s finding that more post-traditional students in MNSCU graduated from health programs—33 percent—than any other

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<sup>136</sup> American Association of Collegiate Registrars and Admissions Officers. (2014, October 2). Federal audits of Education Dept. find room for improvement. Retrieved from <http://www.aacrao.org/resources/resources-detail-view/federal-audits-of-education-dept--find-room-for-improvement>

<sup>137</sup> White House. (2014). Higher education. Retrieved October 16, 2014, from <http://www.whitehouse.gov/issues/education/higher-education>

field.<sup>138</sup> Additionally, the inherently hands-on nature of delivering healthcare services and operating biomedical technology make instruction in a competency-based format especially suitable for these fields.

To successfully integrate direct assessment as a specialized program within a traditional university system demands prodigious commitment. A staff of 350-400 people, including faculty, Academic Success Coaches, Instructional Designers, admissions officers and registrars across campuses currently serve the Flexible Option. Not all of these personnel focus their work on the Flexible Option, but this figure should convey the high level of coordination required between departments and with enrolled students. Reconciling a dynamic, student-centered program which decouples seat time from learning with traditional semester-based institutional protocols, according to Kite, presents many “square-peg-round-hole programs: you have to connect academics and operations from the beginning.” She adds: “There is no halfway point for this.” The need for committed administrators and faculty holds true for implementing competency-based programs in general, not just the “pure competency” model of direct assessment. Competency-based education cannot succeed as an afterthought or a gimmick.

Though the task of introducing online direct assessment may seem daunting, efforts are underway to allow other institutions to benefit from the UW System’s experiences. The Lumina Foundation awarded the System a three-year, \$1.2 million grant to “create a blueprint for replicating the creation of a competency-based approach to higher education.”<sup>139</sup> <sup>140</sup> In March of 2014, UW-Extension, the coordinating force behind the Flexible Option, was named to the initial cohort of institutions in the Lumina-funded Competency-Based Education Network, or C-BEN.<sup>141</sup> Coordinated by Public Agenda, a nonprofit research group, C-BEN seeks to identify best practices and help “address shared challenges to designing, developing and scaling competency-based degree programs” (<http://www.cbenetwork.org>).<sup>142</sup> Interested university leaders and legislators should look to these sources for more information regarding the potential for leveraging direct in their system.

## **Foster Further Integration of Work-based Learning and Classroom Learning**

Exploring ways to support and mentor student development in these opportunities is recommended. In order to continue to strengthen work-based learning programs in the State of Minnesota and create quality educational experiences for students and prepare them for the workforce, existing work-based learning models must continue to find ways to integrate work-based learning and traditional classroom-based learning. Since research has shown that mentorship is critical for student success in

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<sup>138</sup> Ong, V. (2011, June). MnSCU: Retooling Minnesota for recovery. Saint Paul, MN: Minnesota 2020. Retrieved from <http://www.scribd.com/doc/57238711/Retooling-Minnesota-for-Recovery>

<sup>139</sup> UW Flexible Option. (2013b, October 17). 1.2 million Lumina grant to support development of UW Flexible Option. Retrieved from <http://flex.wisconsin.edu/1-2-million-lumina-grant-to-support-development-of-uw-flexible-option/>

<sup>140</sup> Rebecca Karoff of the UW System Office of Academic and Student Affairs has been designated as the lead investigator for the grant.

<sup>141</sup> DeSantis, N. (2014, March 14). 20 colleges are picked for effort on competency-based education. The Chronicle of Higher Education. Retrieved from <http://chronicle.com/blogs/ticker/20-colleges-are-picked-for-effort-to-share-guidance-on-competency-based-education/73827>

<sup>142</sup> David Schejbal of UW-Extension was one of two leaders of C-BEN’s initial Steering Committee.

work-based programs,<sup>143</sup> developing mentor networks for work-based models is critical. Additionally, the State of Minnesota can explore the implementation of cooperative education programs, which tend to include robust relationships between institutions and employers, especially given the state's saturation with large corporations and agriculture.

## **Leverage Prior Learning Resources**

Regarding prior learning assessment, we recommend familiarizing Minnesota government and business organizations with the CCRS database and encouraging them to establish credit equivalencies for training programs, as well as posting NCRS profiles for the MNSCU schools. There is much that could be done to make Minnesota public universities more receptive to non-traditional students, and credit databases are an excellent place to start. The ACE has been a leader in this field for over 70 years; contacting them about facilitating prior learning frameworks could prove very beneficial.

## **Inaugurate a State-wide Effort to Join the Registered Apprenticeship-College Consortium**

Apprenticeships in the State of Minnesota fall squarely within the existing model of varying qualification, trade-based certification, and limited transfer opportunities out of state. However, as discussed above (in section on credit for prior learning), MNSCU is already set up to accept credits approved by ACE, which makes them more apprenticeship-friendly. There are no exemplars of states creating their own apprenticeship models, and even if there were, this still fails to address the concern of taking a certification out of state. The best course of action for promoting the State of Minnesota as an exemplar in this area would be to take action to encourage all of Minnesota's apprenticeship-providing institutions to join RACC and lead the way in setting a national standard.

## **Conclusion**

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Given the current national discourse and pressure from the state and federal governments to continue to increase not only college enrollment and degree attainment but also decrease time-to-degree, it is imperative that the State of Minnesota leverage and adapt current programs and technologies in order to move toward new, effective, and cost-efficient models of higher education. Here, we review the use of competency-based, work-based, and online-based educational programs in order to explore which models may be best to leverage in Minnesota's specific educational and economic climate. Through our review of opportunities and challenges associated with each education program model, assessment of feasibility of implementation, as well as opportunities for assessment of each program, we conclude with a number of recommended directions for higher education administrators and policy makers.

In addition, review of exemplar programs in each area lead us to conclude that Minnesota should develop a competency-based online two-year degree program, foster the further integration of work-based and classroom learning, leverage prior learning resources, as well as begin a state-wide effort to join the Registered Apprenticeship-College Consortium. We also emphasize the necessity of creating a

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<sup>143</sup> Van Rooijen, M. (2011). Transforming 21st century corporate-university engagement: From working-integrated learning (WIL) to learning-integrated work (LIW). *Journal of Cooperative Education and Internships*, 45(1), 5-10.

robust assessment plan to accompany any alternative model initiative that the state implements. Implementing these recommendations will help to ensure that the State of Minnesota continues to provide effective, adaptive, and cost-efficient higher education to the increasing number of both traditional and non-traditional students pursuing higher degrees.