The United States is facing a higher education crisis. At precisely the time that the benefits of a college/university education have never been higher, the country has stalled in postsecondary degree completion. Of first-time, full-time undergraduate students who began a public college or university bachelor’s degree in the fall of 2006, 43 percent did not complete within six years; 80 percent of first-time, full-time undergraduate students who began any form of credential at a public community college in the fall of 2009 failed to complete within 150 percent of the normal time required to do so. In 2012, the number of 25- to 34-year-olds with some postsecondary education but no degree was larger than the entire undergraduate enrollment in four-year public institutions.
No doubt, we face serious challenges when it comes to retention and degree completion for traditional students between 18 and 24 years old. But it is our failure to successfully address those challenges that has resulted in an overhang of talented, mature, and heretofore unsuccessful students who will form, in many ways, the heart of the U.S. economy for the next three decades: students between 25 and 45 years old who are fully desirous and capable of earning a diploma but who have no degree in hand.

This article is about these students who fail to graduate during their first engagement at a college or university and the need for higher education institutions to provide such students with options that will improve the likelihood that they will return and be successful. It also offers some suggestions, based on experience at Arizona State University (ASU) and on research in education and other fields, about which options make the most sense.

In the 21st century, it is imperative that higher education institutions be focused on the success of nontraditional students. We know that colleges and universities can assist these students by leveraging new processes and new technology solutions that better align with their life challenges, pace, and other unique characteristics. We have the ability to create a rich, increasingly personalized, and flexible learning experience at scale. And we can predict that these tools will ensure that returning students are given every chance to succeed and will result in more students who graduate, a higher- and better-educated citizenry, and less income/intellectual inequality.

**You Call This Opportunity?**

On June 16, 2014, ASU and Starbucks launched a new program called the Starbucks College Achievement Plan. The program is available to all full- and part-time Starbucks employees within the United States and will give them the chance to finish a bachelor’s degree with full tuition coverage through any ASU degree program, delivered online.³

In early 2014, when ASU and Starbucks were still in the midst of creating the program, focus groups of current and potential Starbucks employees were conducted in Los Angeles and Atlanta. These focus groups provided the two organizations with powerful information about proceeding with the initiative. In addition, one participant was particularly memorable: an Atlanta woman, around 23 or 24 years old, who was highly articulate, presented herself very well, and possessed a maturity beyond her years. In the focus group, this woman described the challenges she faced in obtaining a degree. A first-generation student with no parental support, she worked two jobs—for a total of 70 hours a week in the fast food industry—to cover her living expenses as well as pay for the partial load of coursework she was taking every semester at a local public university. She spoke of being so tired by the time she reached her class that at times she would set her iPhone to record the professor’s lecture, fall asleep with her head on the desk, and listen to the recordings on her bus ride back home or to one of her jobs the next day.

We may think her circumstances are unfortunate but unique, uncommon, and atypical. We would be wrong. This country has recently undergone a difficult eight-year recession that affected every level of society with the exception of the top tier. The recession left tens of millions of young people worse off than previously, not only lowering their prospects for employment but also reducing family support for their studies. Increasingly, they don’t know if their hard efforts to get an education will pay off, and they don’t know where to go for help.

Traditional higher education institutions need to focus more intensively on these students and help them succeed while, in turn, helping the country succeed as well. Public education is the cornerstone of a successful, inclusive society. We need to concentrate on nontraditional students’ success and their learning outcomes. We need to leverage personalized and adaptive technologies to create an environment with features that are specific to their needs. We need to stop overlooking these students and start engaging them. And we need to start now.

**National Need**

In 2012, U.S. Treasury Secretary Timothy Geithner stated: “The moral case for doing a better job of giving Americans the opportunity to succeed is very compelling. The economic case is just as strong. If more Americans are educated, more will be employed, their collective earnings will be greater, and the overall productivity of the American workforce will be higher.”⁴

In 1996, the United States led all countries in the Organization for Economic Co-operation and Development (OECD) in the percentage of adults who had attained a college/university degree.³ In the subsequent years, the United States has flatlined while other countries have made great strides, with many leapfrogging past the United States. In 2011, 42 percent of all adults in the United States had attained a postsecondary degree, ranking fourth overall (behind Canada,
Japan, and Israel). But the most important comparisons for America’s future well-being are those across age groups, comparing the educational attainment of younger people educated recently with that of older people educated one, two, or three decades previously. These comparisons show how educational attainment has been rising, falling, or holding steady over time and are reasonable proxies for overall workforce qualification in the coming decades. The OECD data shows, for example, that Korea has made strides in education in every decade: only 13 percent of adults educated three decades ago hold tertiary credentials, but 64 percent of 25- to 34-year-olds hold degrees—the highest percentage among that age group in the world. In the United States, by contrast, 25- to 34-year-olds are virtually indistinguishable educationally from 55- to 64-year-olds: the younger cohort has a 43 percent attainment rate, whereas those educated three decades previously have a 41 percent rate. The result is that the United States has fallen to 13th among OECD/G20 countries in the percentage of 25- to 34-year-olds with higher education credentials.

Significantly, progress in the United States did not stall equitably across economic strata; instead, the change results primarily from lack of progress in degree attainment for students from households in the bottom 75 percent of the income distribution. Bachelor’s degree attainment by age 24 in the top income quartile has increased dramatically—from roughly 40 percent in 1970 to 72 percent by 2011. Contrast this with a prospective bachelor degree recipient from any of the bottom three quartiles where, on average, fewer than one in five students could hope to receive a degree by age 24. And for students in the lowest quartile, the chances are a dismal one in ten.

Indeed, these facts are stark. Tom Mortenson’s analysis reveals that degree attainment rates have increased steadily since 1970 for students in the upper income quartile, so that as of 2012:

- More than 90 percent will graduate from high school.
- More than 80 percent of those graduates will go on to a college/university.
- More than 90 percent of those students will graduate.

However, for students from the lowest quartile of family income:

- Fewer than 75 percent will graduate from high school.
- Fewer than 50 percent of those graduates will go on to a college/university.
- Slightly more than 25 percent of those students will graduate.

This trend has perilously developed during the same decades in which the rewards from a higher education degree have increased dramatically. According to the Pew Research Center, the real income disparity between high school graduates and college/university graduates has increased 135 percent since 1965.

And so despite her earnest best efforts, the chances that the woman in Atlanta will succeed in earning a bachelor’s degree through conventional means are very slim. The best predictor of attainment of a college/university degree—which more than ever determines an American’s long-run chances for employment, lifetime earnings, longevity, health, and happiness—is now a student’s household zip code. Yet given that academic ability is not a product of zip code or family income, the conclusion is inescapable: colleges and universities must pay increased attention to the services and learning experiences they provide to nontraditional students—those students who are not successful in graduating the first time around.

**What Is a Nontraditional Student?**

The National Center for Education Statistics defines a nontraditional student as meeting one of seven criteria: has delayed enrollment into postsecondary education; attends college part-time; works full-time; is financially independent for financial aid purposes; has dependents other than a spouse; is a single parent; and/or does not have a high school diploma. Several of these criteria suggest a correlated characteristic discussed above: delayed graduation from a postsecondary institution. For example, a student who is financially independent must be at least 24 years old, unless they’re married or a veteran or member of the Armed Forces or a graduate student. Similarly, single parents and students working full-time are seldom going to be able to attend a college or university on a timetable allowing them to graduate by age 22 or 23.

The simplest description of a nontraditional student is one who has started a degree but has failed to graduate—and more specifically, failed to graduate before life intervened in one of many forms: unmanageable student debt obligations, vanishing parental support, children or other dependents, and/or the need to provide care for elderly parents or other relatives. The number of students falling into the nontraditional category is staggering, in part because of the noncompletion statistics discussed above. In 2012, there were nearly 10 million former higher education students between the ages of 25 and 34. In the
same year, the entire student enrollment in four-year public U.S. colleges and universities was just over 8 million.  

The good news is that higher education institutions can use specific deliverables to assist the nontraditional student—both inside the classroom, through teaching and learning technologies, and outside the classroom, through the provision of student services.

**Deliverables for Success inside the Nontraditional Classroom**

To be effective for nontraditional students—to engage these students—the classroom experience will need to be delivered digitally using many of the developed and nascent technologies that the marketplace provides to make learning faster, more responsive, more portable, and more effective. If we are to succeed at the scale demanded by the problems confronting us, then we must acknowledge that online learning provides by far the best and most feasible alternative for students who are balancing work, family, rent, and/or mortgages as well as a myriad of other civic and personal obligations. The nontraditional student simply cannot excel in an inflexible, face-to-face classroom environment.

The marketplace has already recognized this. *The Economist* reported that in the United States, higher education enrollments of nontraditional students (defined as students age 35 or older) rose by 314,000 in the 1990s and by a whopping 899,000 in the 2000s. Why this significant increase in adult learners? Because they finally have a place to learn: online. When we look at the online student population, it is clear that the growth in nontraditional students is directly correlated to advances in online education.

Of all online students, 70 percent are 26 years or older, 68 percent are employed, and 66 percent have credits earned from a higher education institution. These students have started and stopped, each time adding to their sense of defeat. Adult nontraditional learners have a lot at stake: they are generally paying their own way; they have a sense of urgency after not succeeding in prior iterations of their higher education experience; and they are, more often than not, working full-time and caring for others, leaving little time to spare. The online campus is their only option for advancement. The quality of that online campus, including the faculty who will interact with the students in the classroom, is imperative to their success in graduating. It is one thing for a student to enroll; it is another to graduate.

Taking into account the nontraditional student’s unique needs and perspective, several things stand out when
considering the essential characteristics of an online classroom. First, because nontraditional students need quick wins to stay on track, remain motivated, and get through the program, the use of accelerated courses—which also promote better learning retention—makes great sense. Second, nontraditional students must have high levels of perceived faculty engagement and support. The more academic and emotional support they receive, the more they will succeed. Traditional faculty can be aided in online engagement and support through appropriate training and assistance from instructional designers. Finally, all students benefit from personalized and adaptive learning technologies, which make learning more efficient and effective. These technologies are the future of learning and are worth exploring in both face-to-face and online classrooms: everyone can benefit.

**Accelerated Courses**
*(Condensed Class Format)*

Accelerated courses provide the same content delivered in a semester or quarter class, in a shorter period of time. At ASU, we changed the university calendar to accommodate both the traditional 16-week semester and two 7.5-week sessions that run concurrently with a brief break in between. Online students take the 7.5-week sessions exclusively; but increasingly, face-to-face courses are also being developed to fit the 7.5-week sessions because faculty appreciate the flexibility and the rapid pace, intensity, and short time for completion.

From a logistical point of view, the schedule makes sense because nontraditional students require more flexibility and focus. It is much easier for a nontraditional student to stay focused while completing two courses in each of two 7.5-week sessions than to maintain the level of focus needed to complete four courses across a 16-week semester. Online learners perceive having shorter and more intense courses as a high-value characteristic.

From a pedagogical point of view, research indicates that the condensed class format offers better learning outcomes for nontraditional students. This is partly due to the course structure, which tends to lean more toward faculty facilitation than the more traditional, straightforward lecture; this structure also asks more of the student, since the course is fast-paced. Additionally, accelerated courses reduce context switching by allowing students to dig deeply into two subjects for a shorter period of time. This creates a more efficient learning experience for students balancing many competing priorities.

Changing to a condensed class format may be a difficult transition, but it is one
of the best decisions an institution can make for nontraditional students.

**Faculty Engagement and Support**

Improved faculty training, especially for faculty new to online teaching and learning, is another area that makes a significant impact. Perhaps the single most effective online classroom intervention for nontraditional students is to heighten the sense of the instructor’s presence in the course. One way to accomplish this is through reexamining the role of faculty and providing ongoing faculty training.

Just as the landscape of higher education is changing, so is the role of faculty. More faculty members are being asked to add online courses to their teaching load. Although such assignments often are initially viewed with deep skepticism by faculty who have themselves been educated in an exclusively face-to-face format, faculty views evolve once it becomes clear that quality content and quality courses can be delivered online. At ASU, fully one-third of our faculty are teaching either online only or a combination of online and face-to-face, and that percentage has risen steadily over the past five years (see Figure 1).

**FIGURE 1. ASU FACULTY TEACHING ONLINE AND FACE-TO-FACE, 2009–2014**

<table>
<thead>
<tr>
<th></th>
<th>2009/10</th>
<th>2013/14</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Only</td>
<td>721</td>
<td>1,427</td>
<td>98%</td>
</tr>
<tr>
<td>Online and Face-to-Face</td>
<td>714</td>
<td>1,093</td>
<td>53%</td>
</tr>
<tr>
<td>Face-to-Face Only</td>
<td>4,672</td>
<td>5,053</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: Office of Institutional Analysis, Arizona State University

What is generally not appreciated is how vastly different teaching online is in comparison with teaching face-to-face. Large public universities have a history of delivering many courses, particularly in the lower divisions, in large sections via a lecture-style format. In many such courses, once the class period is over, so is the teaching, and students are expected to learn much of the material on their own—utilizing their notes, textbooks, and other resources. Left to their own devices, faculty making the transition to online delivery typically will approach an online course in the same way. They submit their PowerPoint files, record some new video lectures, and generally let the course run itself, without their intervention or engagement.

Successful online education requires
faculty training for multiple reasons, but none are as critical as teaching our teachers how to be effective online. Online courses designed to achieve engagement will, in turn, yield better learning outcomes. Yet most faculty have never received instruction on quality course design. At ASU, we have found that whether the instructor is teaching face-to-face or online, working with an instructional designer improves the instructor’s ability to design and deliver a quality online course. The instructional designer works with faculty to create three distinct types of interaction in online courses—student-to-student, student-to-content, and student-to-faculty—and all of the engagement is reciprocal.

To emphasize the importance of these types of interaction to faculty who are new to online teaching, we enroll them in an online teaching boot camp. This is a fully online, two-week course that the faculty member experiences as an online student. The course requires about fifteen hours of faculty engagement and interaction over the two weeks. In the boot camp, instructors learn many best practices for teaching online, but more important, they are given the opportunity to engage as an online student learner. They are subsequently much more attentive and careful in determining the learning outcomes they want their students to master and in creating substantial learning objectives and student interactions that will guide their course structure. Additionally, faculty members share best practices with their peers, interacting with colleagues from all over the university. The boot camp is a collaborative environment that faculty both benefit from and enjoy.

Once faculty are ready to create an online course, instructional designers work with them to re-conceptualize their lectures for online students. The instructional designers are consultants working with faculty, assisting them in learning how to effectively engage nontraditional learners and tailor their courses for such learners. In addition to these high-level objectives, instructional designers perform a set of specific functions: instructing faculty on how to “chunk” their course content for an online format; inviting and scheduling faculty in multimedia studios to improve on-camera delivery, presentation techniques, and tone; advising faculty on how to use informal videos and webcam videos throughout courses to encourage both student and faculty engagement; and in general, working to develop high-value, high-engagement courses for the nontraditional student population.

Training does not end after the course has been delivered the first time. Because the field of educational technology is burgeoning and changing from month to month, it is necessary to provide ongoing training—in-person and through webcasts—to introduce faculty to new tools and best practices and to provide them with an opportunity to view what has been successful in other courses. Topics at ASU have included Gaming in the Curriculum, Online Tutoring, and Using Video in Your Course. Our training extends to a blog and twitter feed designed to facilitate a global conversation with practitioners.

At the end of the day, all of this training is focused on enhancing faculty interaction and sense of presence in a course. As one student recently told me: “My best instructors send e-mails, post frequent announcements, interact in the discussion boards, post video lectures, and grade in a timely manner. I want their time and attention, just like a campus student would have. If the instructor engages with me, I feel more comfortable asking for help when I need it.” And that is the goal: for students to ask for help before they get too far down an undesired path with little hope of finding their way back. Of course, there is a technology solution for that too.

**Online courses designed to achieve engagement will yield better learning outcomes. Yet most faculty have never received instruction on quality course design.**

**Personalized and Adaptive Learning Technologies**

Personalized and adaptive learning technologies have been covered extensively in the educational press, for good reason: they are creating some amazing possibilities to reach students with individualized recommendations that will increase the effectiveness and efficiency of instruction—once the promise of these technologies is fully realized.

A working definition would state that personalized learning technologies encompass any educational technology or pedagogy that results in providing individual students with different learning paths based on response, ability, advance preparation, or other indicators. Adaptive learning technologies are a subset of personalized learning technologies; they utilize big data to detect correlations across huge numbers of users to determine individual content recommendations.

Depending on how content recommendations are generated, both personalized and adaptive learning technologies provide the promise of allowing a faculty member to recognize where each student, out of hundreds of students in a class, is in his/her individual learning processes. The technologies enable a faculty member to parse out, for example, which students are off-track and working and which students are off-track and not working. More-sophisticated adaptive systems predict when students are close to becoming bored with a particular set of material—and these systems make content recommendations designed to re-engage students in the learning process.

Adaptive learning dashboards help
Using Technology to Engage the Nontraditional Student

Faculty to monitor which students need assistance, to measure curriculum performance, and to maximize course outcomes. They allow faculty to be smarter about interventions with students and to focus on those students who benefit most from assistance, either at the top or the low end of the learning spectrum. From the students' perspective, adaptive technologies respect their prior knowledge, respond to their learning needs, and reduce gaps in their understanding.

Personalized and adaptive learning technologies are increasingly permitting us to teach effectively at scale. By identifying which students need help and what help they need, these technologies help faculty to teach a hundred students in a single section. In freshman math courses at ASU, for example, faculty dashboards allow the real-time identification of where learning breakdowns are occurring for individual students. Additional instruction can be provided in the form of videos, text explanations, and test-your-understanding quizzes. If a student continues to struggle, the faculty member can intervene more quickly than would be possible in any face-to-face course not mediated using personalized educational technologies. Those students who need extra help feel supported, and those who want to forge ahead and go through the material at a faster pace or challenge themselves with more difficult material have those options as well. Personalized and adaptive learning technologies re-humanize and individualize teaching in a way that will never be possible inside a large lecture. Students can self-direct their study and customize their learning path, yet all students come out of a class with the same learning objectives mastered.

Personalized and adaptive learning systems promise a personalized learning experience that permits faculty to add, map, and monitor content. This is imperative when deploying accelerated courses and when teaching nontraditional students who are hard-pressed for time. The systems allow quality content delivery, measurement of students' progress in real time, quick intervention by faculty, and encouragement for students to succeed and move ahead.

**Deliverables for Success outside the Nontraditional Classroom**

The online classroom environment is clearly a critical component of any effective program for nontraditional learners, but too often higher education institutions focus all resources in that area and pay insufficient attention to providing quality services for these students. The truth—as far too many for-profit institutions have shown—is that incredibly large and financially successful programs can be built on fantastic services that enroll students in great numbers but, sadly,
deliver mediocre learning outcomes.

For nontraditional students, poor services are calamitous, potentially undermining their ability to graduate. We should acknowledge what for-profits figured out long before most traditional colleges and universities: helping students to apply, transfer credit, receive financial aid, and enroll for courses is an essential form of support for nontraditional students. First-generation students often don’t have parents or siblings to explain these processes, and working adults or adults in caregiver roles typically don’t have hours during the day to drive to an in-person advisor, or bookstore, or financial aid office. For the nontraditional student, not getting financial aid means not being able to pay for classes. Books not arriving on time means a complete disruption to the coursework schedule—similar to a faculty member being absent for 2 weeks out of a 7.5-week class. Both experiences are devastating to the student’s progress.

Fortunately, we now have the ability, using technology, to create a superior and straightforward service experience for transferring credits, enrolling in courses, switching majors, paying tuition, purchasing books, and handling many other student activities—all in ways that provide important emotional support for nontraditional students. Our experience at ASU offers examples in the areas of transfer evaluation, personalized coaching, and technology portals.

Transfer Evaluation
At ASU, transfer evaluation used to be handled the same way that it is typically handled at most other institutions: students would submit their transcripts to the university admissions office, which would in turn send them out to the various schools and academic units for evaluation—but only after a student was admitted to the university. Evaluation was not consistently executed across the university and would take anywhere from one to six weeks, depending on the school/unit’s personnel and processes. Meanwhile, most nontraditional applicants were moving on to other institutions. Why? Because they wanted to know how their credits would be applied to the major they were interested in before making a decision to enroll. That’s a fair request, and at ASU, we weren’t efficiently responding to their need.

Optimizing transfer evaluation is impractical if a higher education institution does not have a large number of transfer students or doesn’t plan to have many transfer students in the future. But for those colleges and universities that do want to engage nontraditional learners, this serves as an excellent example of where reengineering traditional processes to be considerate of the needs of nontraditional students will make a big difference in the institution’s success in enrolling these learners.

At ASU, we centralized most of the transfer evaluation processes and then used technology solutions to create dashboards that made the process transparent both for enrollment counselors and for the students applying. ASU also streamlined the process for faculty approval of transfer credits, particularly at the lower-division level, which has fast-tracked many of the evaluations. Not surprisingly, we experienced an increase in enrollment when we started to make the transfer process more efficient. We went from a 49 percent admit-to-enroll rate in Spring 2012 to a 67 percent admit-to-enroll rate two years later, in Spring 2014.

Personalized Coaching
As stated previously, nontraditional students generally do not have the same understanding of higher education institutions and the same family support enjoyed by face-to-face students. This can stall their momentum and potentially be disruptive to their progress. However, traditional colleges and universities can intervene and offer support through personalized coaching.

We live in a world where, in our everyday lives, being able to talk to a “real person” often seems impossible. The coaching program executed at ASU reverses this paradigm. The coaches help students navigate processes and ease their anxieties. In turn, students find a rewarding support network in their coaches, who offer encouragement and assistance.

Essentially, coaches set up—in concert with the student—a communication method and frequency protocol to ensure the greatest success for the individual student. Perhaps a weekly call to touch base is the most helpful. Or maybe e-mailing is more convenient. Meant to be encouraging—and never overwhelming—the interactions are tailored to the student’s needs. There are also certain “triggers” that will automate communication between the student and his/her coach. For example, if a student hasn’t logged in to class in four days, the coach will reach out. This system is built so that the coach is aware of any potential issues that may hinder a student’s success; if needed, a solution is created. The goal (a realistic one) is to provide customized tools to ensure students’ success by making the largest public university in the country a manageable place to navigate.

Building on the success of our coaching initiative, we are launching a new student engagement initiative piece in
the fall of 2014: the mentor network. Its purpose is to offer students an opportunity to build their portfolio, as well as identify their own set of mentors. Their mentors may include their advisor, a faculty member, or a fellow student. Students will then be able to communicate with their mentor network on a platform that allows seamless collaboration.

**Technology Portal**

Several years ago ASU created an online and mobile portal that has become essential in providing the right services at the right time to our students, faculty, and staff; it serves as a key example of the use of technology in service to students. “MyASU” is the primary point of contact between ASU and our students, growing with them from time of application to provide a customized and personalized experience that highlights the services needed for success—services such as enrollment and course management, finances, profile updates, communication tools (e.g., course notes, e-mail, to-do tasks), and customized ads. The ability of the portal to integrate with more than twenty-five systems makes it the central point of deployment for new technology into the university community, including access to learning management systems, online courses and apps, files, documents, and more. Though many aspects of the portal are customizable by the student, the elements that will ensure their success—such as contacting their advisor or accessing their major map—remain static.

“MyASU” is the number-one service tool for students, with most students visiting the portal six to seven times per day. For nontraditional students, being able to access everything they need—online, in one location, and at any time or on any day—is essential to their achievement tootool. The goal is for the portal to be personalized and actionable, ensuring that students have a seamless online tool to navigate their ASU success.

**We Can Do More**

I have written above about the 21st-century university and how imperative it is that we focus on nontraditional students. I have given examples of how we can—and are—leveraging technology to enhance our students’ success. And I now ask you to join in this undertaking. The woman in Atlanta felt isolated, but her story is in fact so common that it personalizes for me many of the most pressing problems facing higher education. Solutions to these problems require thoughtful analysis, innovation, and energy, as well as the courage and willingness to shift the perspective of the college/university from a faculty-centric model to a student-centric model. No higher education institution has all the answers, but colleges and universities (and public institutions in particular) are increasingly becoming part of the solution by focusing on partnerships with external companies and other campuses, placing their independent analysis and innovation in service to their students and prospective students. Public higher education institutions have a responsibility to create pathways that will lead to the success of nontraditional students. These colleges and universities have a decision to make: they can continue with business as usual, or they can accept their responsibility and sharpen their focus on both the curricular-oriented and the services-oriented obstacles to nontraditional learners’ success.

Which is it going to be?

**Notes**

3. OECD, Education at a Glance 1998: OECD Indicators, 44 (Table A.1a). The OECD includes most European countries in addition to the United States, Canada, and Japan. Note that with the 2000 edition of Education at a Glance, the OECD changed from reporting college/university degree attainment to measuring tertiary degree attainment to conform to classifications in the revised International Standard Classification of Education (ISCED/1997).
4. OECD, Education at a Glance 2013: OECD Indicators, 37 (Table A1.3a, “Population That Has Attained Tertiary Education [2011]”).
5. Ibid.
6. Ibid.
7. Ibid.
8. Ibid.
10. Ibid.
13. See note 42.

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