

## Innovating Technology to Support Class Attendance, Student Persistence, and Academic Success

How accurate, accessible attendance data assists universities with early intervention, student retention, academic success, and financial aid compliance.



### This paper will examine:

- › What studies reveal about attendance as a predictor of student academic performance.
- › How attendance data can play a vital role in academic intervention.
- › Why attendance is also an indicator of student engagement and the impact of engagement on retention.
- › How attendance data can improve institutional stewardship over federal financial aid, reducing overall financial risk to the institution.
- › How automating attendance tracking and reporting can greatly reduce friction and the hassle to faculty while yielding highly accessible, real-time attendance information.

## Introduction

After two decades of increasing enrollment, colleges and universities have experienced an overall drop in enrollment for the past two years.<sup>1,2</sup> This coming trend, based on census data, combined with declining state education appropriations, increased public and congressional scrutiny related to the rising cost of education, and the new yield-rate demands being placed on student recruiters all foreshadow the coming financial challenge.

This challenge is forcing post-secondary institutions to look inward, putting a heightened focus on improving student retention and effective management of financial aid. To that end, institutions are struggling to identify innovative ways to identify and alert to the need for early student intervention; thus, ensuring students at risk of poor academic performance continue to successfully persist thus maintaining their financial aid eligibility in the process. To meet this challenge, more and more institutions are focusing on class attendance.

Institutions that lack a well-defined attendance policy and automated system for supporting such a policy are missing two valuable tools supporting early intervention, academic success, student retention, and financial sustainability. Easily-accessible longitudinal attendance data is critical to identifying students who are not fully engaged academically. This information enables faculty, counselors, and



administrators to engage before students find themselves failing, or worse, unofficially withdrawing by walking off campus. Easily-accessible attendance information also helps colleges and universities demonstrate competency during Accreditation Reviews and A-133 Audits that determine an institution's compliance with Title IV requirements related to the awarding and disbursing of federal student financial aid.

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## The Impact of Attendance on Student Academic Performance

It seems logical that students who do not attend classes will not perform as well in their academic careers. How much learning can take place in the absence of having enough discipline to attend lectures? Many studies have been conducted to determine the impact of attendance on academic performance in higher education. Most conclude that higher attendance levels are correlated to superior performance.

- › In 2004, Colby investigated the relationship between attendance and academic performance in a first-year course module. Attendance was strongly correlated to performance and Colby was able to derive several rules. Colby's Seventy Percent Rule states a student that attends less than 70% of the time has a two in three chance of failing the course. The Two-Week Rule finds a level of non-attendance during the first two weeks of class, for any reason, spells academic trouble.

- › In 2006, Burd and Hodgson attempted to corroborate the findings of Colby on a different group of students—this time computer science majors. The study corroborated the general findings of Colby, noting also that the most poorly attended classes were first thing in the morning.<sup>3</sup>
- › In 2009, Bevitt, Baldwin, and Calvert studied attendance and performance among first year biosciences students at Newcastle University. The institution avoided some of the hassles associated with attendance by only monitoring ‘high stakes’ classes (seminars and practicums). The authors noted that “attendance and performance monitoring combined with early, pro-active follow-up of non-attendance” delivered positive results in identifying at risk students, and that monitoring attendance in the high stakes classes was as effective as monitoring all sessions.<sup>4</sup>

If attendance is correlated with academic performance, does it also follow that academic achievement contributes to student persistence and retention? Recent studies support this premise:

- › Over a ten-year follow-up period, the Educational Longitudinal Study of 2002 found that 32% of high school students enrolled in some postsecondary education without achieving any credential. Among minority students, attrition was higher; 40% of African American students and 39% of Hispanic students enrolled, but did not achieve a postsecondary credential.<sup>5</sup>
- › Departure rates are highest among freshmen college students, with about 30% dropping out on average. However, attrition rates vary widely, and highly selective and private institutions often measure higher rates of freshman persistence than public, less selective institutions.<sup>6</sup>

- › How many credits a student has achieved is a reliable predictor of persistence. As they attain more credits, students become less likely to walk away. A University of Illinois analysis revealed that of students who dropped out, “about two-thirds of the students departed with 60 credit hours or less, with the highest proportion having departed with between 16 and 30 cumulative credit hours (i.e., during the freshman year).”<sup>7</sup> This pattern helps explain why freshman are most likely to leave, followed by sophomores. It also underscores the importance of getting students to attend class and perform well academically, so they can earn credits.



In an effort to get freshman students off on the right foot and reinforce good academic patterns for returning sophomores, many colleges and universities are now instituting policies requiring faculty to record attendance in 100 and 200 level courses. By the third and fourth year of college, students have generally formed their habits about studying and attending class, therefore, taking attendance has less impact on performance.



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# The Role of Attendance Data in Early Intervention and Retention

Student retention is critical for the financial vitality of a college or university. More than 40% of full-time college students fail to graduate within six years. According to Mike Reilly, executive director of the American Association of Collegiate Registrars and Admissions Officers, schools are under pressure to boost retention rates, and that's leading to more campus-wide policies about attendance.<sup>8</sup> Well-known institutions such as Xavier University and University of Arkansas are working to increase retention, in part through better tracking of attendance.

Students who feel a sense of engagement and connection to their campus community have an 80% higher chance of persisting.<sup>9</sup> As with academic performance, student attendance in class is also related to student retention. Because attendance data can be one measure of a student's level of academic engagement, innovative colleges and universities have begun to use it for predictive purposes. These schools monitor attendance and other indicators of student engagement, with intervention processes in place for students who are most at risk of leaving without a degree.



Increasingly, attendance monitoring is being noted as a best practice for student retention efforts:

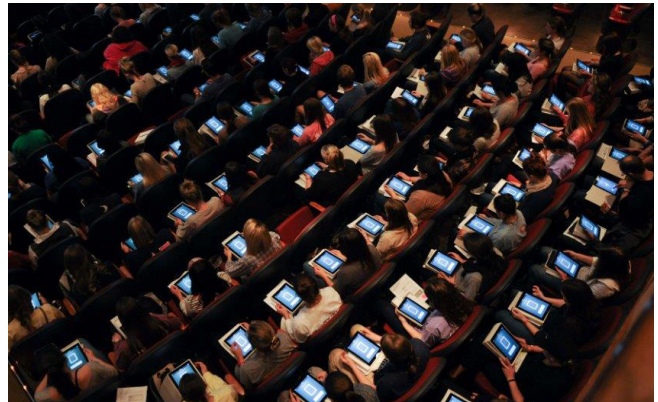
- › A recent ACT policy report on retention recommends that colleges and universities, “Implement an early alert, assessment, and monitoring system based on HSGPA, ACT Assessment scores, course placement tests, first semester college GPA, socioeconomic information, attendance records, and non-academic information derived from formal college surveys and college student inventories to identify and build comprehensive profiles of students at risk of dropping out.”<sup>10</sup>
- › A University of Texas study listed attendance as a high impact practice for community college student success, noting that for many schools, developing a campus-wide attendance policy may be the “lowest hanging fruit” that is a “simple, inexpensive step” to improve academic outcomes and graduation rates.<sup>11</sup>
- › In defining ten elements of successful retention programs, the Noel-Levitz National Center for enrollment management recommends that colleges and universities:<sup>12</sup>
  1. “Collect, compile, and analyze pertinent retention data and research”
  2. “Implement early identification/alert and intervention strategies”

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With tracking systems, institutions can use classroom attendance/absence patterns as an early predictor of retention. If the attendance system is tied into the centralized system for student credentials, additional “attendance” information can be gathered about ancillary campus services and social events to provide a larger picture of overall engagement. This enables colleges and universities to identify behavior patterns that indicate risk factors for retention and get the right personnel involved early. Two examples include:

- › Several institutions use a system based around student ID cards that tracks how often students attend campus-sponsored parties, student-leadership programs, and how often they check in at the career center. Some universities even incentivize students who qualify for Pell Grants with a rewards system based on participating in activities they track.<sup>13</sup>
- › City University of New York (CUNY) developed a structured degree pathway for students eligible for need-based aid. The pathway features several components, including block scheduling of classes, advising, and mandatory, full-time attendance. The program doubled the graduation of students compared to those not in the program.<sup>14</sup>

As more colleges and universities decide to implement broader, campus-wide attendance tracking, it will be necessary to implement innovative technology and processes that reduce or eliminate friction to alleviate the burden on faculty of taking attendance, thus increasing faculty adoption. Both change management and financial cost/benefit need to be taken into consideration with the implementation of any technology. It has already been established that there is a significant loss in revenue to an institution associated with not taking attendance; however more important, there is also a significant loss in earning potential for the student that drops out, as well as experiencing other life-long impacts. The next section will address such costs and impacts as they relate to federal requirements.



## Attendance Tracking and Compliance with Federal Financial Aid Rules

According to National Center for Education Statistics, approximately eighty-five percent (85%) of full-time students pay for college with the help of financial aid in the form of grants and scholarships.<sup>15</sup> Federal financial aid is responsible for a large number of students being able to afford post-secondary education, so it’s important for institutions to be good stewards of this valuable resource and not compromise the institution’s ability to participate in Title IV programs.

As of March 2015, the Department of Education disclosed that it is closely monitoring the financial health of 556 postsecondary educational institutions, or about 10% of all institutions receiving federal student aid and grants.<sup>16</sup> Of those, most have a status of HCM-1 (heightened cash monitoring), but 69 are subject to more stringent financial restrictions known as HCM-2 status, including 21 under active federal investigation.<sup>17</sup> According to *Inside Higher Ed*, HCM-2 status “means that department employees manually approve every dollar that flows to an institution. Nearly all of those unidentified colleges were on that status because a federal audit of the institution resulted in ‘severe findings’.”

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- › Federal financial aid regulations require that an institution must be able to document attendance in each class for which a student has received Title IV aid.
- › If a student has a change in enrollment status, and drops or adds a class, an institution is required to determine if this has an impact on the student's financial aid package. In the case of the dropping of a class that results in a change in enrollment status—and it impacts eligibility—the institution must adjust the student's aid package and return funds to the Title IV program(s) or report the student's status to NSLDS if the funds have been previously disbursed.
- › In the case of both an Official and Unofficial Withdrawal, the institution must perform a Return to Title IV calculation (R2T4). Foundational to this calculation is the student's Documented Last Date of Attendance. In the case of an Official Withdrawal, the specific date the student stopped attending all classes is critical to ensure the institution does not return too little or too much to the US Department of Education (the "Department"). In the case of an unofficial withdrawal, if the institution is unable to provide requisite documentation that the student attended at least one day of class for which the student was paid, the student is deemed to never have established Title IV eligibility and thus all aid must be returned to the Department.
- › Finally, there is a date certain that Title IV funds must be returned to the Department. In general, this is no later than 14 days after the withdrawal.

With these requirements, it's easy to see why creating better policies for tracking attendance is beneficial for both students and institutions. If a financial aid award has been disbursed and is owed back to the Department, the institution must return the money promptly and try to

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collect these monies from the student. Given the student's lower earnings potential without a degree and the fact the student was eligible for financial aid, the likelihood of the institution collecting from the student is remote.

From a compliance oversight perspective, one example of a potentially-costly Title IV Program Review performed by the Department occurred when auditors sampled student loan accounts at a state university and found 56% "didn't



have enrollment status updates reported to the federal government in a timely manner. . . That meant the students got a little extra time before having to repay their debts, but the campus risked federal disallowance for non-compliance, meaning future federally backed loans could have been in jeopardy.”<sup>18</sup>

In 2014, the Department cited that R2T4 calculation errors and late return of program funds were number two (2) and four (4) in the top ten audit findings respectively. As mentioned earlier, the institution's ability to determine last date of attendance is foundational to the calculation and timely return of program funds.

Once an institution decides to take advantage of the benefits of more in-depth attendance monitoring, the next

questions become, “How can we make this easier on our faculty?” and “How do we ensure our faculty maximizes their time teaching and not taking attendance?”

The answer can be found in automation.

## Automating Attendance Tracking and Reporting

Clearly, tracking attendance can help institutions identify students in danger of underperforming academically as well as help engage and retain students. Keeping careful attendance records also supports the institution's compliance with Federal Financial Aid requirements for audits and in the event of a Federal Program Review. However, taking attendance manually has proven historically challenging, burdensome, time-consuming, error prone, and frustrating for faculty members and administrators.

At many universities, the discretion for taking attendance is left up to individual departments or even individual professors. The administration may encourage attendance taking, but not mandate it. This flexibility in policy results in confusion in several ways:

- › Students will attend classes where attendance is taken (particularly if attendance is a component of grading) while skipping classes in which attendance is not taken.
- › Faculty members often view attendance as extra, unnecessary effort because the lack of a definitive policy and its related benefits; thus, making it seem unimportant to the institution.
- › If the university is subjected to a federal or state audit, administrators will be hard-pressed to produce accurate records because it will be unclear which professors actually take attendance and if they do so on a consistent basis.
- › If it is unknown which professors take attendance, those records will be difficult to obtain to demonstrate compliance.



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The most common complaint from faculty is that taking attendance is time-consuming and a hassle. In a freshman or sophomore lecture course, it is impractical to call roll with hundreds of students. Some universities have attendance systems that enable a faculty member to check in students on a laptop, or print out a student roster to pass around and then later input the information back into the attendance system.

Both are active processes that must be heavily managed by the professor.

If a manual method is used for taking attendance, the professor must further ensure that records are complete, valid, and properly-maintained or delivered to the registrar in the likely event a question arises about attendance in relation to withdrawals or grades. If faculty members take attendance on paper, there is additional complexity centralizing and retrieving manual attendance records for use in financial aid compliance or in the event of an audit.

### Automated Attendance Systems for Postsecondary Institutions

Many colleges and universities will choose an automated attendance system to make monitoring attendance as easy as possible for faculty and students. Systems should be evaluated based on ease of use, as well as the availability of this information to the enterprise. This will ensure student retention specialists can use this information for predicting at-risk students and the institutions can execute early intervention strategies as well as ensure financial aid administrators have up-to-date information to manage compliance.

For example, a Cloud-based attendance system that leverages existing campus technology can provide the automation needed to centralize attendance records while also making them easily accessible to faculty members for grading and review purposes. If that system also includes an easy way for students to “check in” as they enter class, an attendance system can minimize class disruption

and save time for faculty by reducing friction.

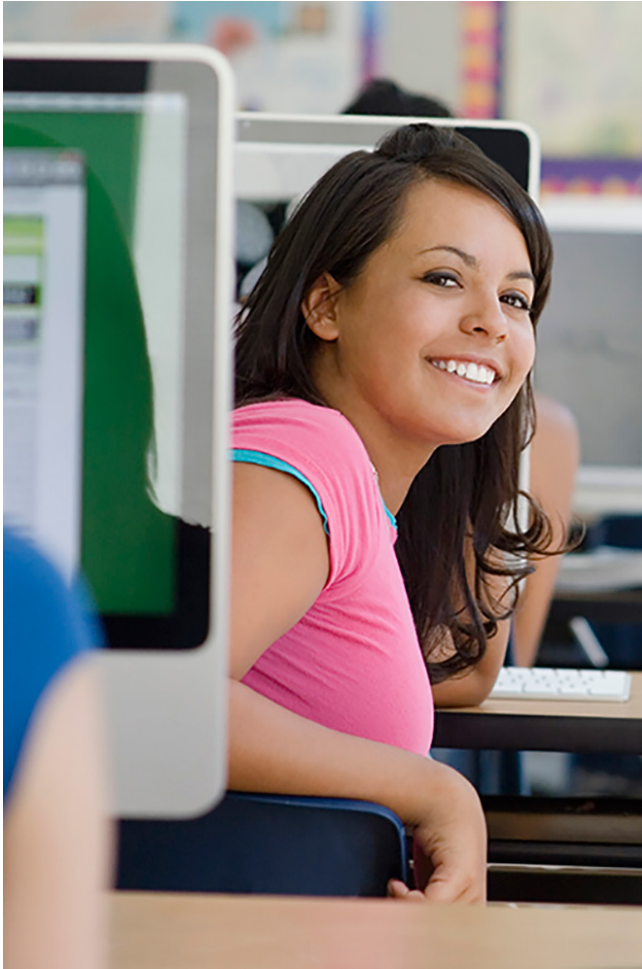
One system approach involves leveraging the student credential (Campus ID card or mobile phone as the ID) to facilitate attendance tracking utilizing purpose-built mobile readers. On most campuses, student credentials are already set up to provide contactless or card-swipe functionality for financial transactions or door access to enter buildings and dorms. Checking in for attendance is as simple as

students swiping or tapping their credentials against a purpose-built reader mounted just inside the class room, sitting on the instructor’s desk, or passed around student-to-student if class is being held outside or in an alternate location. This way, attendance is taken instantly, without hassle and with minimal friction to faculty and students.

The credential is increasing in usage across every aspect of campus life. Thus, it can provide an institution critical information in support of retention through proactive student programs, earlier intervention for students at-risk, and more effective management of Title IV compliance.

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## Conclusion

Ensuring the success of students, both academically and later professionally, is essential to building the reputation and brand of any college or university. As institutions seek more ways to engage with students and ensure their academic success, many will discover the value of monitoring attendance combined with data analytics. Class attendance is highly correlated to improved academic performance for all students, especially for freshmen and sophomores.

Attendance is also one of several important measurements of student engagement. Engaged students in all aspect of campus life are much more likely to persist at college and earn a degree than students who are less engaged. Given eighty-five percent (85%) of full-time students receive financial aid, attendance-linked persistence minimizes the probability of students leaving without a degree; and in turn, falling into default related to the repayment of financial aid as a result of under-employability and/or a lack of desire to pay for an education they perceive they did not get.

In today's environment, student recruitment is more competitive and costly. Student retention is essential to

financial sustainability and takes pressure off recruiters, allowing them to focus on filling the next freshman class as opposed to also refilling next year's sophomore class.

The criteria for the most effective and efficient attendance systems will be the reduction of cycle time, friction, and faculty frustration in taking attendance. A good system will provide easy access to data and support early intervention and ultimately retention. Attendance Systems that integrate with the campus credentialing system make it very easy for students to register their attendance by using their IDs. This attendance data is easily combined with other data streams and incorporated into a bigger picture of campus engagement for administrators focusing on students at-risk, ensuring retention, student success, and institutional financial health.

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## End Notes

<sup>1</sup> Institute of Education Sciences, "Fast Facts: Enrollment," National Center for Education Statistics. Retrieved from: <http://nces.ed.gov/fastfacts/display.asp?id=98>

<sup>2</sup> U.S. Census Bureau, "College Enrollment Declines for Second Year in a Row, Census Bureau Reports," September 24, 2014. Retrieved from: <http://www.census.gov/newsroom/press-releases/2014/cb14-177.html>

<sup>3</sup> E. Burd and B. Hodgson, "Attendance and Attainment: a five year study," *Innovation in Teaching and Learning in Information and Computer Sciences*, Vol. 5 No. 2, 2006. Retrieved from: <http://journals.heacademy.ac.uk/doi/abs/10.11120/ital.2006.05020004>

<sup>4</sup> Debbie Bevirt, Chris Baldwin and Jane Calvert, "Intervening Early: Attendance and Performance Monitoring as a Trigger for First Year Support in the Biosciences," *Bioscience Education*, June 16, 2010. Retrieved from: <http://journals.heacademy.ac.uk/doi/abs/10.3108/beej.15.4>

<sup>5</sup> U.S. Department of Education, "Educational Longitudinal Study of 2002: A First Look at 2002 High School Sophomores 10 Years Later," National Center for Education Statistics, January 2014.

<sup>6</sup> U.S. News and World Report, "Freshman Retention Rates," 2012.

<sup>7</sup> Debra Bragg, Daniel Cullen, Stacy Bennett, and Collin Ruud, "All or Nothing? Midpoint Credentials for Students Who Stop Short of the Baccalaureate Degree," University of Illinois at Urbana-Champaign, November 15, 2011, pgs. 9-10.

<sup>8</sup> Douglas Belkin, "Cracking Down on Skipping Class," *Wall Street Journal*, January 14, 2015. Retrieved from: <http://www.wsj.com/articles/cracking-down-on-skipping-class-1421196743>.

<sup>9</sup> Noel-Levitz Research – Mid-Year Retention Indicators Report. Retrieved from: [https://www.noellelvitz.com/documents/shared/Papers\\_and\\_Research/2011/2011MIDYEARINDICATORSREPORT.pdf](https://www.noellelvitz.com/documents/shared/Papers_and_Research/2011/2011MIDYEARINDICATORSREPORT.pdf)

<sup>10</sup> Veronica Lotkowski, Steven Robbins, and Richard Noeth, "The Role of Academic and Non-Academic Factors in Improving College Retention," ACT Policy Report, 2004. Retrieved from: [https://www.act.org/research/policymakers/pdf/college\\_retention.pdf](https://www.act.org/research/policymakers/pdf/college_retention.pdf)

<sup>11</sup> Center for Community College Student Engagement, "A matter of degrees: Practices to pathways (High-impact practices for community college student success)," Austin, TX: The University of Texas at Austin, Program in Higher Education Leadership, 2014. Retrieved from: [http://www.ccsse.org/docs/Matter\\_of\\_Degrees\\_3.pdf](http://www.ccsse.org/docs/Matter_of_Degrees_3.pdf)

<sup>12</sup> Lydia Voigt, Ph. D. and Jim Hundrieser, "Student Success, Retention, and Graduation: Definitions, Theories, Practices, Patterns, and Trends," Noel-Levitz National Center for Enrollment Management, November 2008. p. 16.

<sup>13</sup> Goldie Blumenstyk, "Blowing Off Class? We Know," *New York Times*, December 2, 2014. Retrieved from: [http://www.nytimes.com/2014/12/03/opinion/blowing-off-class-we-know.html?\\_r=0](http://www.nytimes.com/2014/12/03/opinion/blowing-off-class-we-know.html?_r=0)

<sup>14</sup> Center for Community College Student Engagement

<sup>15</sup> National Center for Educational Statistics. "Fast Facts" Retrieved from: <http://nces.ed.gov/fastfacts/display.asp?id=3t>

<sup>16</sup> Aldemaro Romero Jr., "The feds are watching colleges and universities," *The Edwardsville Intelligencer*, April 20, 2015. Retrieved from: [http://www.theintelligencer.com/local\\_news/article\\_d3b921d0-e776-11e4-bb66-77515aa0e3f4.html](http://www.theintelligencer.com/local_news/article_d3b921d0-e776-11e4-bb66-77515aa0e3f4.html)

<sup>17</sup> Michael Stratford, "Cash Monitoring List Unveiled," *Inside Higher Ed*, March 31, 2015. Retrieved from: <https://www.insidehighered.com/news/2015/03/31/education-department-names-most-colleges-facing-heightened-scrutiny-federal>

<sup>18</sup> Andy Koen, "Audit found weaknesses in CSU-Pueblo bookkeeping," *KOAA Channel 5 news*, May 13, 2005. Retrieved from: <http://www.koa.com/story/29048025/audit-found-weaknesses-in-csu-pueblo-book-keeping>

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