

What Leaders Need to Know About Managing Data Risk in Student Success Systems

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- Integrated planning and advising services (IPAS) systems show promise for improving student success and college completion rates by aggregating, analyzing, and displaying data.
- IPAS collection and use of this data risks student privacy, data security, and data governance in ways not always anticipated.
- Planning for an IPAS system entails a reexamination of the entire student pathway at the institution, with a focus on administrative and academic processes.
- Successfully implementing and integrating IPAS systems across campus provides the data and analytics needed to support student academic success and educational completion.

TWO SCENARIOS

Student success has come into sharp focus for higher education. Outcome-based funding at the state level and a completion agenda at the national level are driving innovation throughout higher education. One such innovation is integrated planning and advising services (IPAS) systems.

In pulling data from information systems to support student success initiatives, what data-related risks should higher education leaders consider? How can those risks be managed and problems avoided? IPAS systems show promise for improving student success and college completion rates, but IPAS use of student and institutional data is not risk-free.

In the examples in the box at the right, both institutions' IPAS initiatives use student data to inform interventions, especially among at-risk student populations, yet their collection and use of this data risks student privacy and data security. As systems that touch the entire value chain for students, IPAS implementations merit thoughtful institutional consideration.¹

A large community college collects data about student transportation, child care needs, and other nonacademic factors that might affect student success. The aim is to develop individualized academic and "life challenge" plans to inform advisors and other student services personnel about the issues facing specific students. Advising focuses on helping students develop an action plan that details the classes to take but also recommends steps to support their ultimate academic success, such as rideshare opportunities or discount bus passes to get to class. Since implementation of the student success system, retention and graduation rates have risen 3.5% each year. Access to personal student data is role-based and controlled by the IT department, with regular audits of levels of access to the data. Role-based access means that a system user's account is closed or modified to adjust level of access as the person's role changes. For example, a dean with access to information about all departmental students would have reduced access following a return to a faculty position.

A large public university collects data about student grades on class assignments and exams during the term and notifies faculty and academic advisors when individual performance shows risk of a student failing the class. Since implementation of the student success system, retention and graduation rates have risen 3.5% each year. Access to sensitive student data is by individual passwords assigned to faculty and staff by the IT department. A user downloads data for later review and accidentally places it in an Internet-accessible file, which results in an online posting of personal student data. The university learns of the breach seven weeks later when a security firm notifies the campus security team. The resulting negative press coverage, investigation, and unbudgeted costs of securing the system and notifying affected students damages the college's reputation and academic budgets diverted to address the breach.

¹ In November 2013, a group of 32 invited academic, privacy and security, technology, and student support leaders gathered in Washington, D.C., for a one-day summit supported by the Bill & Melinda Gates Foundation. An in-depth review of the summit proceedings, *Managing Data Risk in Student Success Systems: EDUCAUSE IPAS Summit Report*, can be found on the EDUCAUSE website. The report contains additional detail about the data risks and mitigations associated with integrated student success systems.

What Are Student Success Systems?

IPAS systems and service models are designed to provide students with personalized guidance on how to successfully pursue their academic goals and navigate their academic careers. They also provide advisors with tools to support students effectively. For example, they may provide “early warning” to students or to advisors if students go off track within a course or in their program of study. Some IPAS systems include recommendation engines to help students plan a major. Others include social networking components to connect student to communities that will support them, whether at college or at home.

IPAS systems aggregate, analyze, and display data about students to provide data-driven insight. They rely on the collection and management of a range of data relevant to student success. These data may include Family Educational Rights and Privacy Act (FERPA) protected elements like grades, personal identifiers that help track students across systems or institutions, or data that while not regulated, should still be considered highly personal.

Many institutions have considerable amounts of data that IPAS systems can turn into a productive resource, helping students make more informed choices, advisors become more effective, and institutions better allocate scarce resources. IPAS systems may be strategic by improving retention, reducing time-to-degree, and providing new insights into institutional roadblocks to student success. IPAS systems can contribute to improved instruction and learning, better stewardship of resources, increased efficiency in student advising, and more effective data governance.

What Are the Data Risks to IPAS Adoption?

The role of analytics in higher education is increasing with considerable momentum. At the same time, a corresponding societal concern has emerged regarding how entities collect, store, transmit, and use personal data. The growing interest in student success initiatives certainly raises this concern. These initiatives use student data to inform interventions—especially among at-risk student populations—and guide students in their course and degree selections. Institutional collection and use of this data risks student privacy, data security, and data governance in ways not always anticipated.

IPAS challenges and risks group into these key areas:

- **Legal and compliance issues:** The consequences of compliance failure may be greater given the increased aggregation of data in IPAS systems. Regulatory compliance (e.g., FERPA, HIPAA), e-discovery rules, open records laws, student privacy expectations (confidentiality), and the role of the institutional review board may all come into play. For example, a breach of sensitive student data exposes the college to fines, disrepute, and unexpected costs, all made worse by the huge size of the database involved.
- **Unintended consequences of third-party data access/use:** The use of IPAS systems may raise concerns about third-party misuse of data or its use for anything other than its intended purpose. No institution wants a partner to contact its students or sell their protected data to another service provider without explicit permission.
- **Inappropriate use of data:** Institutions may make inappropriate use of the data presented in dashboards or reports, or misunderstand their limits. Effective IPAS initiatives will ensure that data are meaningful, interpreted within the limits of the models used, and integrate reliance on the data with effective advising practices.
- **Inability to integrate IPAS and related systems.** IPAS systems intersect and interact with existing systems such as the student information system (SIS) and learning management system (LMS). IPAS initiatives may entail a reevaluation of these systems to assure seamless integration. Data governance models must span the systems effectively as well.
- **Additional support requirements:** The use of IPAS systems may initially result in increased support costs. Successful and appropriate implementation may entail training for advisors, faculty, and others using the system. New services to assist students identified as at-risk might also be required.
- **Determinism:** Institutions must guard against using IPAS systems to predetermine a student's success or failure. Deterministic risk includes using IPAS data to limit a student's choices based on predicted performance, placing an overemphasis on structured pathways that constrain chances to explore, and over-reliance on data without consideration of the individual circumstances.

Finally, considering the potential strategic value of IPAS systems, leaders must assess the risk of failing to implement them.

What Are the Implications of Deploying IPAS?

IPAS is not a simple matter of data collection or the development and delivery of a new campus IT system. IPAS systems entail a reexamination of the entire student pathway at the institution, with a focus on administrative and academic processes that build relationships between students, faculty members, and other personnel who support student success. IPAS systems are comprehensive and will:

- Drive many institutional changes, in culture, collaboration, and resources
- Underscore the need for transparent system governance to foster trust, for institutional data governance to demonstrate good stewardship of data assets, and for new or increased expertise (e.g., data scientists, privacy officers, legal counsel, etc.) to appropriately, ethically, and effectively draw value from the system

IPAS should be treated as an institutional initiative requiring clear, executive-level support and broad community buy-in. In promoting the use of IPAS systems, leaders will be “making the case” for changing often long-standing processes and roles. The compelling cultural values and principles of an IPAS initiative include:

- Evolving from anecdote to data-supported action, creating a data-driven culture
- Looking forward (analytics) instead of backward (reports)
- Focusing on individuals instead of cohorts
- Leveraging data to benefit the student and the institution

What Should Be Considered When Implementing IPAS?

The cultural challenges related to the effective implementation of IPAS systems are as complex as the technical challenges. The following practical considerations can help assure success and mitigate risk.

Ensure that data risks and policies are addressed across the institution.

- Prioritize and align the initiative with institutional objectives and aim for cross-campus integration even if beginning with a small pilot. Clearly define the problem you are trying to solve with an IPAS approach.

- Promote ownership of the system by faculty and advisors—“people who do this every day.” Staff and students are also important participants. Do not assume that institutional stakeholders understand what is currently possible or the implications of different sources and uses of data.
- Assign a C-level campus champion as team lead to develop or improve data governance policies that can scale from an IPAS pilot to the entire community. Managing risks of the new student success systems requires input from legal counsel and top information-technology managers.
- Make sure the planning and implementation team leaders give users enough time to explore and understand the relevant data available to them using IPAS. Data governance policies should ensure that advisors, instructors, and other data users use sensitive data appropriately.
- The data governance policy should include requirements for acquiring, managing, tracking, and deleting data. For example, will this system look at historical trends, or does the institution remove data when a student graduates?
- Encourage the IPAS implementation team to tackle the initiative in phases—student retention, progression, and completion—and allow for improvement and iteration. Recognize this as part of the deployment’s maturation process.

Look beyond campus for norms in planning, developing, and deploying IPAS systems.

- Verify that your team takes into account the balance and fit between institutional data needs and system or district data needs in IPAS system design and implementation. Insist they look outside higher education for different approaches to solving IPAS-related problems.
- Encourage the team to standardize data across the institution by starting with data they already have that are well understood and broadly available across higher education, such as student information. Not coding similar data elements the same way leads to data-quality issues that IPAS systems bring into sharp focus.
- Clarify with the campus champion and team leads that the new system should not collect and maintain data that the university is not prepared to use. This limits risk in case of data security lapses and supports student privacy by focusing on relevant data.

Conclusion

IPAS systems can help us identify and address problems facing our students by informing student success initiatives with data collected for that purpose. However, IPAS is not a simple matter of data collection. The quality of an IPAS implementation relies on the nature of the data collected, how it is used, and its definitions and parameters. Colleges and universities must be clear about why they collect specific data and who has access to it. To foster trust among students and other stakeholders, institutions must also mitigate the potential for overreach and misuse or misinterpretation of data. They need good data from enough sources to ensure that statistically relevant information shapes student success efforts and responses.

At the same time, IPAS projects can't simply focus on the development and delivery of IPAS tools. They should also reexamine administrative and academic processes and institutional support to foster relationships among students, faculty, and student services personnel. Ultimately these relationships serve as important building blocks in increasing student success.

Leaders in higher education face multiple demands on their time and attention. Not all the technology projects in which leaders must invest critical institutional resources directly affect core academic values and goals, although they benefit the institution in other ways. In the case of IPAS, however, technology directly benefits the core academic mission. Successfully implementing and integrating IPAS systems across campus provide the data and analytics needed to support student academic success and educational completion by focusing efforts where they can do the most good.

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