

# Data Tracking Systems: Rethinking the Purposes and Benefits

Education Brief: Two

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## Education Policy in Review

### Executive Summary

In December of 2004, the Lt. Governor's Commission on Higher Education and Economic Growth in the state of Michigan recommended within its final report that the state develop a "lifelong education data tracking system." The recommendation actually reinforces an effort that was already underway and it reflects an effort to do three things: (1) coordinate existing data structures for K-12 education and the workforce, (2) create an individual record data collection system for higher education, and (3) integrate the three data sources. Data systems of this sort are not entirely new, but they vary by state and differ with respect to how they are constructed, how far students are followed, and who has access to that data.

In this brief we review the critical dimensions of the data system debate and consider the spread of states with individual unit record data tracking systems beginning nationally and then focusing in on the state of Michigan. We also explore the following four challenges facing the creation of individual unit record (UR) data systems: (1) the structure of the system, (2) the cost of creating and maintaining that system, (3) the political dimension of data tracking, and (4) the personal and privacy related issues for students and parents. The feasibility study conducted by the National Center for Educational Statistics (NCES) suggests there are two ways to think about the question of whether to create such a system: could it be done and should it be done?

Michigan has already moved a long way towards creating the system, but there are lessons to be learned from other states and from current debates on

these systems. The NCES report (Cunningham, Milam, & Stratham, 2005) and our knowledge of other states suggest that these systems are both structurally and financially possible, but the conversations continue regarding whether such systems should be created. We believe that if the state were to adapt a UR system with the student as the primary beneficiary, some of the personal and political concerns could be minimized. Most debates regarding data collection address these four dimensions, but they fail to address how data might be utilized by those individuals who provide it. When policy makers, educators, researchers, and others begin to appreciate the bi-directional nature and utility of information, areas of disagreement may become less contentious. It is our responsibility as policy makers to provide access to information to those who rightfully lay claim to it.

## The Evolution of Statewide Data Tracking Systems in Postsecondary Education

In Michigan, the central issue is the creation of a data collection system for higher education. The remaining two goals for K-12 and employment are important for the overall success of the program, but higher education is the critical linking structure between the two. The current system for postsecondary data collection is the Integrated Postsecondary Education Data System (IPEDS), which is aggregated at the institutional level. All institutions that receive federal financial assistance are required to complete a series of nine annual surveys to maintain their Title IV eligibility status. This data, compiled and stored by NCES, is currently accessible to education researchers, institutions, and individuals through a series of web-based tools. The collection of this institutional data acts as a means of holding colleges accountable for how they spend federal dollars to educate students. According to the Congressional Research Service (Stedman, 2003), to date, institutions of higher education have been held accountable primarily in terms of its handling of federal money. In particular, institutions may lose Title IV federal aid eligibility subject to their student loan default rates. Current debates maintain the default provision but also include measures of program and degree completion and student persistence.

Recently, NCES conducted a feasibility study of shifting IPEDS toward a student unit record (UR) system. A UR system effectively maintains longitudinal data for each student over the course of time they are in higher education (in some cases, they are tracked from their entry into K-12 education as well). A UR system would contain a record of courses, grades, course patterns, financial aid, and number of institutions attend-

ed for each student during each year. Student level data can also be linked to institutional data for schools and colleges. NCES (Cunningham, Milam, & Stratham, 2005) notes that no fewer than 39 states currently have some form of UR system in place, although most systems do not track private school students.

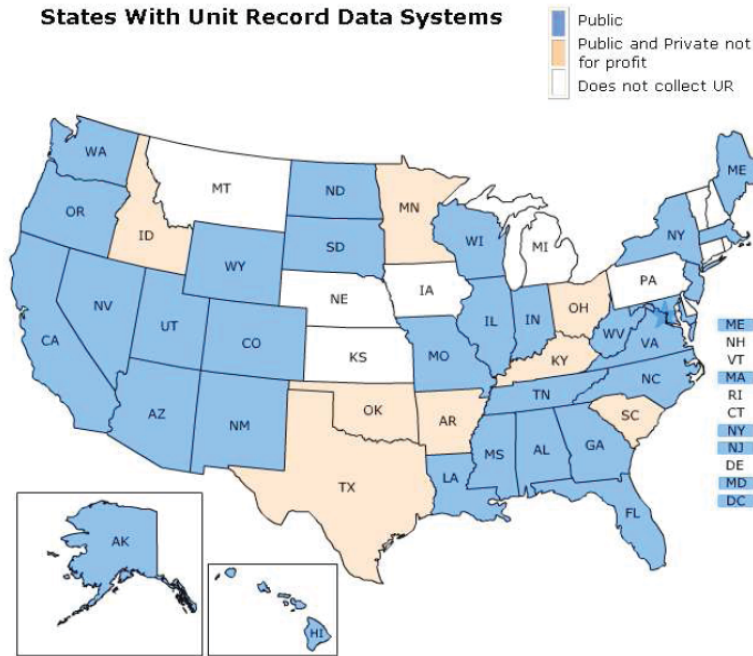
Advocates – including researchers and policy makers

– argue that UR systems are not as limiting as IPEDS, a system that cannot accurately account for the various pathways students follow through college (Adelman, 2005). One of the central limitations is that the IPEDS system (as well as other systems like the Common Core of Data CCD) has no effective way of dealing with students who transfer institutions in terms of persistence and completion rates – two measures commonly utilized as benchmarks for institutional success. If

a student transfers from Institution A to Institution B a year after admittance, it lowers Institution A's graduation and persistence rates and additionally does not benefit B because transfer students are not calculated into graduation rates. In this case, the student has persisted and may graduate, but the aggregated system loses that student. The effect is that higher education as a whole appears to be less effective than reality might suggest.

The situation is slightly different at the K-12 level. As a consequence of No Child Left Behind (NCLB), most states are required to report K-12 data in a way that necessitates a UR system. Michigan is among them with their recently developed UR system housed with the Center for Educational Performance and Information (CEPI). A number of states have now moved toward UR systems for higher education rather than versions previously aggregated at the institutional level. Florida is the pioneer in this area with a UR system spanning K-20 that has been evolving since 1976 and assumed

**States With Unit Record Data Systems**



Source: Data Quality Campaign (2005) Retrieved January 15, 2006 from [http://www.aacrao.org/federal\\_relations/IPEDS\\_UR.pdf](http://www.aacrao.org/federal_relations/IPEDS_UR.pdf)

its current form in 1995 (Florida Board of Education, 2005). In this system, the state has tracked every student through every grade and at every point they enter and exit the system of education.

According to the American Association of Collegiate Registrars and Admissions Officers (AACRAO, 2004) 39 states have established individual level data systems for higher education. Of these, the vast majority (31) only include public institutions where the remaining eight include private not-for-profit institutions as well. The Data Quality Campaign (DQC) (2005), an advocacy group for the creation of these systems, suggests ten elements necessary for a strong and effective system including whether the state has a unique identifier for students, if data can be linked to teacher information, if graduation and dropout rates are available, and if there is a mechanism for assessing the overall quality of the data.

Despite the number of states with unit record systems in place, according to DQC, only six states have eight or nine elements in place, and no state has all ten. Each is deficient for different reasons. Florida currently has no information on untested students or an audit system to evaluate the quality, validity and reliability of data, Texas lacks a teacher identifier system to link teachers with students, and Ohio lacks college readiness test scores and the ability to link K-12 and higher education data.

### The Michigan K-20+ Data Tracking System

Data tracking systems are powerful tools for collecting and analyzing longitudinal information on students as they move progressively through state K-12 education systems, college, and into the workforce. As Michigan faces significant shifts in economic, job, and educational trends in the upcoming decades, its leaders have recognized data tracking systems as a means to better prepare its residents, educators, employers, and policymakers for such change. The Michigan Department of Information Technology (DIT), in conjunction with the State Board of Education (SBE) and the Department of Labor and Economic Growth (DLEG), has developed a proposal to create a K-20+ individual unit record data collection system to provide a diverse array of stakeholders this valuable information. The proposal received further support as the Lt. Governor’s Commission on Higher Education and Economic Growth (2004) recommended “[Michigan DIT] must develop

by 2007 an interagency data-sharing arrangement, in coordination with Michigan’s K-12 and higher education institutions that creates functioning lifelong education tracking system with information from multiple data sources including CEPI, MDLEG, and higher education” p. 30.

Currently, Michigan is similar to many states across the country that have a number of systems in place in K-12, higher education, and the workforce, but lack coordination among the three. Data sources currently exist in Michigan’s K-12 system and in DLEG, but there is no comparable system for higher education and no simple way to integrate the data across the three education and workforce domains. Given the present status of the proposal and generated momentum, it is important to consider the strengths and limitations of data collection systems. Now is the time to consider issues like data access to students and parents in addition to researchers and policy makers. According to DQC, Michigan has only four of ten elements in place, which suggests a great deal more work must be done (see Table 1 for details).

Table 1. Elements of Effective Data Systems Assessment of Michigan

Elements of a longitudinal data system in the state	Yes/No
A unique statewide student identifier	Yes
Student-level enrollment, demographic and program participation information	Yes
The ability to match individual students’ test records from year to year to measure academic growth	Yes
Information on untested students	No
A teacher identifier system with the ability to match teachers to students	No
Student-level transcript information, including information on courses completed and grades earned	No
Student-level college readiness test scores	No
Student-level graduation and dropout data	Yes
The ability to match student records between the PK–12 and higher education	No
A state data audit system assessing data quality, validity and reliability	No

## Challenges for Design and Implementation

The following sections examine the structural, political, financial, and personal challenges facing the creation of UR systems. The first two challenges (structural and financial) address the query “could the systems be created,” where the latter two (political and personal) address the issue “should the systems be created.” We believe that if Michigan were to adapt a UR system with the student as the primary beneficiary, some of the personal and political concerns could be minimized.

### Structural

The structure of educational systems plays an important role in the creation of a UR data collection system because there needs to be a level of consensus with respect to what data elements are collected and how those items are defined. Equally, those decisions will have a tremendous impact on how to gather, synthesize, and report data at each campus. Michigan values local control at every level of K-20 education. State universities enjoy unparalleled constitutional autonomy, community colleges participate in a voluntary coordination through the Michigan Community College Association (MCCA), and K-12 enjoys a great deal of local control supplemented by state efforts to equalize funding across districts (Proposal A). The State Board of Education plays a coordinating role for K-12 education, but relative to other states, the local district has considerable control.

In the context of creating a state level system, structural concerns operate on at least two levels – state and institution – and they matter in different ways. At the level of the state, a tradition of local control and institutional autonomy may not preclude the state of Michigan from creating such a system, but it requires a concerted effort to find agreement on what should be measured and how those measures are defined. Consider how one defines dropouts. The answer seems straightforward until one considers the reason for the measure. Policy makers that wish to hold schools accountable may prefer a measure that includes those that leave the school. Researchers that wish to understand students’ patterns of educational participation and success in school, on the other hand, suggest that dropouts should reflect those students who fail to complete a high school diploma. These problems can be resolved but require time and coordination across

sectors.

### Financial

When determining the cost of UR systems that tax payers and students pay by virtue of the government and the institution, the following two elements must be considered: implementation costs and maintenance costs. In Michigan, there are 15 public universities, 29 community colleges, and 48 private not-for-profit four-year institutions that would potentially be included in the system. Each institution would require a fixed cost to upgrade data systems, reorganize data reporting mechanisms, and require technical support to manage new responsibilities. These costs are contingent upon when the data are expected to be useful and available. Earlier access will require higher fixed costs up front to add data from previous years, whereas later access is less costly, but also less politically useful. NCES proposes as part of the IPEDS UR feasibility study that in addition to the infrastructure updates and initial data entry, that another six years of preceding data would be entered into the system as well (Cunningham, Milam, & Statham, 2005). The tradeoff then is simple: a higher front end cost for a more immediate utilization of the data. If a national system were adopted, NCES would provide a campus subsidy that would cover at least a portion of the expense (Cunningham, Milam, & Statham, 2005). If the state of Michigan creates the system, it should consider how these costs will be covered as well.

### Political

Two main concerns lead the political debate: student privacy and who has access to the information. Those in favor of the creation of the UR system include the American Council on Education (ACE), the American Association of State Colleges and Universities (AASCU), and the State Higher Education Executive Officers (SHEEO) (Gidjunis, 2004). The National Association for Independent Colleges and Universities (NAICU) and the Higher Education Data Sharing Consortium lead the opposition (Ferguson & Sapp, 2005). NAICU may be the most vocal opponent of these data systems at that national level. An issue summary states (National Association for Independent Colleges and Universities, 2005):

*“NAICU has serious concerns about this proposal—the most significant of which is its threat to student privacy.*

*We do not believe that the price for enrolling in college should be permanent entry into a federal registry, and we fear that the existence of such a massive registry will prove irresistible to future demands for access to the data for non-educational purposes” (NAICU, 2005).*

Student privacy is mentioned as the primary concern, but it appears on closer inspection that the more specific concern is how much those students pay to attend college. Knowing that the IPEDS system is publicly available, and that student financial aid data has been available through IPEDS, the availability of net costs – what students pay after all forms of aid are included – may be of equal concern to that of privacy; a considerable and important issue for private colleges.

An equally important political issue is who owns or stores the data. Information is power and the greater access one has to it, the more power one has. The central question then is whether such a system should exist at either the state or at the national level. Clearly, 39 states have already created some version but most do not include independent colleges. The federal government has considerably greater leverage to require this sort of information given the importance of federal aid to most private institutions and the compulsory reporting as a result. However, there are greater privacy concerns the further up the governmental ladder information goes. The state may be a more acceptable level for reporting, but given the funding challenges in states and tenuous nature of state funding for private colleges it may be more difficult to find a suitable common ground in a given state. It also happens that private colleges on average are considerably smaller than public institutions and the cost of implementation may affect them more by proportion.

## Personal

The need for accurate and dependable data has been a constant struggle for educators, as it has for professionals in other fields. The challenge involves a paradox underlying comprehensive tracking systems. To gain the most benefit from the technology, it is vital that increasing amounts of accurate data be collected. However, the more abundant and accurate the data becomes, the greater the concern for individual privacy. Such is the case for education data, and the stakes have grown as calls for accountability have increased.

Most privacy concerns revolve around whether to use the student’s social security number (SSN) as the unique identifier - a considerable challenge to colleges under

the Family Education Right to Privacy Act (FERPA). It would be the easiest number to use, but it also is most sensitive to security concerns. In recent years many colleges, universities, and state systems have moved away from the SSN to an institutionally identified number. This has been the case in Michigan as well. To use an alternative to the SSN would require at either the state or the national level the creation of education identifiers that are not easily linked to as many important functions as the SSN. For example, the SSN can be used to access financial records, procure picture identification (driver’s license), and store medical records. The concern is that in the wrong hands, this sensitive information could result in violations of one’s individual freedoms.

The Michigan proposal adds a level of complexity that no other state currently faces. In addition to following students throughout the education system, Michigan proposes following individuals out into the workforce. This is the “+” in the “K-20+” proposal and it would make it both more difficult to use any measure but SSN, and more contentious as a possible violation of one’s right to privacy. States have collected employment data for many years without issues regarding privacy, but that data has not yet been systematically linked to education.

## Conclusion

The common but frequently missing denominator in this complex policy issue is students. Presumably everything that educators, institutions, and the state (in this context) do with respect to education is to provide the very best education and possible life outcomes. However, at times it appears that the focus on students disappears and interested parties fail to appreciate the true potential that information has for the benefit of those who provide it. Recall that all parties view data with particular interests in mind. The state is interested in the economic development potential of education. Institutions are concerned both with the quality of the education they provide to students, and their respective ability to keep tuition and fees affordable. Interest groups are primarily concerned with the well-being of their members. But in the discussion of data, no one seems to be considering how students might benefit in all of this.

Certainly, NAICU and others have identified the concern of privacy, but that is simply protecting something that already exists. It may also be the case, as the NAICU statement suggests, that some of the privacy concern is as much an issue to the institution as the individual. But perhaps there is something more to the collection of

individual data that may make students better off than they would be without a data collection system. Consider the case of credit reporting agencies. For many years, credit reports provided mysterious numerical indicators of the potential risk one poses as a recipient of credit. The number was understood and available to any agency in a position to issue credit and often without the consent of the individual whose record it was. The credit score became a high stakes “test” of one’s credit worthiness that could significantly affect a person’s economic chances and yet they had no access to or understanding of its implications and how it could change. Recently, successful efforts have been made to give consumer’s access to their credit scores at minimal or no cost. This changes the nature of the credit game because now those who apply for credit have access to their score, can begin to understand what it means, and can plan proactively to either maximize their credit score or to develop a financial plan to improve it.

Might a corollary exist in education? In an effort to deal with the complexities of funding, accountability, and privacy, educators and policy makers have forgotten or lost sight of how access to one’s information may actually directly benefit students, who would otherwise only benefit if information fuels education innovation and reform. They might even benefit further if school and college information were simultaneously available to them as consumers of education. Imagine for example if a student could access all of their transcripts from high school and from several colleges all in one web-based forum – they could see before them the totality of their educational experience and could begin to see connections that perhaps would positively influence their individual decision making processes. At very least they might be able to send all of their transcripts to one college at a substantially reduced cost. That would be a significant benefit for anyone who finds themselves attending more than one grade school or college. Perhaps that one system could also link to the Free Application for Federal Student Aid (FAFSA) and provide all necessary reporting information.

The litmus test for a UR system should consider how the system is likely to benefit students. Only then should one consider if the system will provide strong measures of accountability, better research on student outcomes, or reliable benchmarks for institutional performance. Those are all important potential benefits but none of them places the student at the center. This proposition may seem optimistic, but bear in mind other educational reforms under

consideration. The first is the creation of a data transfer wizard, which will effectively equate comparable credits across institutions that will allow students a greater sense of what coursework is likely to transfer. A data system would link nicely to a transfer wizard and ameliorate the transfer process more effectively in combination. The reformulation of the merit award is another. Shifting the award from a high school incentive to a college completion reward can be a challenge for students to follow, given the credit requirements for earning the grant. However, a data system could effectively let students know how many credits they need and which count toward their earning the merit award. Such a system is not very different from the sort of data system being pursued in healthcare in the state of Michigan, which will effectively give each patient access to and control of their medical records.

When policy makers and educators return students to the center of education reform and restructuring strategies, the possibilities change and so too, do the potential strategies themselves. There may actually be different and additional costs associated with such a shift, but if the intent really is to benefit students, then thinking differently about what we do and how we do it is necessary. Students need to be empowered to succeed. Once a student centered data system is created, educators may be able to see and tap into the tremendous possibilities for innovation and intervention that accompany reliable information in an advanced technological environment.

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