

Assessment of Data Sources Relevant to the Supply and Quality of Illinois Primary and Secondary Educators

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Executive Summary

In November 2001 the Illinois Education Research Council received a grant from the Washington Mutual Foundation to assess the extent and usefulness of Illinois' data systems for the study of teacher supply and demand. Data and Decision Analysis, Inc. was contracted to undertake a review of currently available data, identify data gaps, and suggest steps for moving forward. This report is in response to that charge.

The problem

An adequate supply of high quality educators is a worthy aim of any state education system. How to create policies and practices that ensure an adequate supply of high quality educators is the challenge for education policy makers. In order to devise appropriate strategies, policy makers need to have information about how the labor market works for Illinois' educators.

The Illinois Board of Education is charged annually to report on the supply and demand for educators in the Illinois public schools. It provides summary information on hiring and attrition, identifies areas where districts have difficulty filling positions, and assesses the match between the supply of new college graduates who are prepared to enter teaching, and the demand for teachers in the state. But state policy makers and practitioners need more detailed analyses about the teacher labor market, the quality of the teacher workforce, and its impact on student learning. This requires a deeper understanding of the quality, number, and flow of individuals into and out of higher education, credentialing, being hired into the public education workforce, and attrition from the teaching profession. The state also needs a deeper understanding of how to create professional environments that will help to attract educators to, and retain them in the profession of education.

Assessing the Data Sources

Illinois has a wealth of administrative data archives that currently reside among a number of public and private organizations. To fully analyze and report on educator supply and demand means gathering data from Illinois institutions of higher education, the Illinois Department of Education (for certifications and teacher service records), and a host of other sources if adequate understanding of the educator supply and demand process is to be obtained. *There is no one database that is adequate; the analysis requires merging numerous databases over numerous agencies.* But it also has data-collection gaps that will hinder the policy makers' ability to make evidence-based decisions, and to assess progress over time on some fundamental characteristics of the educator workforce in Illinois.

The technical issues involved in gathering and assembling data to facilitate research to inform education policy are generally known, and with adequate resources present a minor challenge. The organizational issues in terms of coordinating a group of disparate agencies to share their data for the sake of the commonwealth are more daunting, and Illinois is no exception.

This report presents information gathered on the eighteen data sources that I identified as being available to help inform Illinois about educator supply and demand, and provide data that can be the source of significant research that can inform education policy in Illinois.

Plugging the Data Gaps

Illinois data, while ample and capable of providing much information for research, is not complete. The major weakness involves student data at the primary and secondary levels, and students at institutions of higher education.

Other areas where additional attention should be focused are in the collection of accurate candidate and vacancy information, and in assessing future educator demand.

- Illinois has chosen not to institute a student identifier for students in the P-12 system because of worries about inappropriate use of longitudinal information. But the “No Child Left Behind” program provides new impetus to develop a student identifier for students in the P-12 system and the state should act now to develop the capacity to carry out value-added assessments of learning environments, and to improve its capacity to help all children reach their full potential. The Joint Education Committee should convene a working group to recommend an approach that would allow student progress to be monitored over time, and across the various sectors of Illinois education. While the social security number is the most obvious, and reliable, mechanism, other devices could be considered that would achieve a similar objective
- If the Shared Enrollment System (for higher education students) at the Southern Illinois University at Carbondale is to reach its full potential, it needs to:
 - Expand its collection to include information on high school of graduation, high school GPA and rank, and type of high school diploma awarded.
 - Expand to include performance measures in college.
 - Include information on enrollees and graduates in teacher education programs (this is the information the Teacher Data Warehouse now painstakingly obtains and spend many hours validating).
 - Increase efforts to include participation of private institutions in the state.
- *Alternately*, incentives should be devised to increase participation in the Teacher Data Warehouse. There is a solid and excellent infrastructure developed for the warehouse, and excellent on-line reporting tools to make the data useable by participating schools. However, without full participation or policies that will allow research organizations like the IERC to access these data, while the knowledge created is valuable and the technology a paradigm for dissemination of information, the investment in development and maintenance of this system becomes questionable.
- Information on the number of applicants to districts by type of position is key to understanding supply; the number of position openings tells us about demand; and the number of unfilled positions tells us about the interaction of supply and demand. ISBE collects data on unfilled positions, and IASA has a clearinghouse for applicants and districts seeking to fill positions. These data are difficult to collect. There are a number of opportunities to improve these data to better inform policy. Research on how to use the IASA data in conjunction with field studies and the ISBE survey would begin to develop this information into useful policy information.

Doing Education Policy Research

Illinois has a great opportunity to learn more about its educator workforce, its effectiveness, and conditions that are hindering progress. It has the key components in place: data resources, a model at the Illinois State Board of Education for sharing data for research purposes, analysts in some education agencies, and units such as the Illinois Education Research Council and the Department of Employment Security to undertake studies. The state agencies should work cooperatively to leverage the professional expertise that is now available for education policy research.

Concerns about privacy, both legal and organizational, can and must be addressed. Federal law is clear that personally identifiable data can be made available across agencies and to their representatives for research and program evaluation. Strong data-sharing agreements can and do protect individual privacy.

Data-Sharing Agreements

Data-sharing agreements are a critical component to using individually identifiable data beyond the collecting agency. These are needed whether the state is contracting for a particular study or researchers are undertaking self-initiated work. There are a number of models available to demonstrate how such an agreement is worded. The federal Department of Education, for example, shares secure (individually-identifiable) data through a rigorous process of review that requires researchers to provide notarized statements of confidentiality and to secure the data to prevent unauthorized access. Their data agreements are usually for five years, and are renewable. Another model is in place at the Illinois State Board of Education, and that agency shares data with researchers within the state and across the country under strict data-sharing agreements. Currently, ISBE agreements are made for periods of one year, but are renewable.

In general, data-sharing agreements should cover the following conditions:

- Contain statements about protecting individual identifiers, training of staff to protect such data, and limiting access to the data
- Be clear that the research data file(s) created are provisional in the sense that in some cases they may be updated each year to provide new information to inform educational policy with new research.
- Develop the data transfer protocols so data can be moved to a site, from among agencies, to be integrated for the sake of research.
- Develop clear definitions of who is part of the research team and under what conditions would they have access to the data.
- Stipulate that results must be published in a way that could not allow for identification of individuals.
- Articulate the penalties for inappropriate use of the data.
- Provide data access for extended periods, when warranted, to allow adequate time for research.
- Allow for large extracts when warranted (in terms of years and variables) so researchers do not place undue demand on agencies to develop numerous customized extracts.

Research Capacity

State data are often used internally by agencies to help inform their activities. Usually, however, the pressures of agency priorities work against the development of a sophisticated internal research capacity, and this is the case in Illinois within its state education agencies. As an alternative, agencies may contract with researchers to undertake particular studies on their behalf. Or researchers may initiate studies themselves. In addition, however, Illinois has taken the unusual step of establishing the Illinois Education Research Council (IERC) with the particular mission of providing evidential information to inform policy and practice across agency boundaries. The IERC already has entered into shared-data agreements with ISBE, and is beginning to gain substantial experience with those data files.

Working with large, messy educational files takes time, technical resources, professional research expertise and experience with the files. Not only are resources needed to undertake the research, but also for the data processing required to make data useful for statistical analysis and longitudinal studies. If resources allow and the need arises, the IERC might want to consider convening a consortium of experienced users to share and document what has been learned while using the data, and to provide recommendations for improvement of existing data collections over time.