



STRATEGIC **DATA** PROJECT

SDP FELLOWSHIP CAPSTONE REPORT

Getting, Sharing and Using the Right Data: Three Steps toward Educator Preparation Program Improvement and Accountability in Massachusetts

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SDP Fellowship Capstone Reports

SDP Fellows compose capstone reports to reflect the work that they led in their education agencies during the two-year program. The reports demonstrate both the impact fellows make and the role of SDP in supporting their growth as data strategists. Additionally, they provide recommendations to their host agency and will serve as guides to other agencies, future fellows, and researchers seeking to do similar work. *The views or opinions expressed in this report are those of the authors and do not necessarily reflect the views or position of SDP or the Center for Education Policy Research at Harvard University.*

Abstract

States have made important strides over the past two decades in improving the quality of data collected about educators and instruction in public schools. But only recently have states sought to connect this data with educator preparation programs and use it to evaluate the performance of the programs. The growing availability of data on educator preparation programs has created two new challenges for state program approval teams: how to use this outcomes data to evaluate a program's effectiveness, and how to engage preparation programs in using the data for program improvement. This report provides an overview of the steps the Massachusetts Department of Elementary and Secondary Education took to develop and share reports about state preparation program completers, and provides recommendations for moving from getting and sharing data on educator preparation to using the data to drive preparation program improvement and accountability.

The Massachusetts Landscape

In August 2013, the Council of Chief State School Officers (CCSSO) convened seven states, including Massachusetts, to develop plans to ensure that educator preparation programs are producing teachers and school leaders capable of helping students reach more rigorous college and career readiness standards.¹ As one participant stated, central to these plans is

“data, data, data”: Getting the right data, sharing the right data, and using data in the right way for accountability and program improvement.

Over the past two years, the Massachusetts Department of Elementary and Secondary Education (ESE) built systems and tools necessary to get and share the “right” data. ESE redesigned its

The Bay State Context

- 80 organizations that sponsor educator preparation programs
- 57 higher education institutions, 3 charter schools, 8 public school districts and collaboratives, 11 non-profit organizations and professional associations, and 1 private school
- Over 2,300 individual programs
- Over 4,000 initial teacher license program completers each year
- Nearly 60 percent of initial teacher license program completers employed in a Massachusetts public school one year after program completion

¹ “Seven States Selected to Join Network for Transforming Educator Preparation,” Council of Chief State School Officers press release (Washington, D.C.: October 23, 2013).

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system for tracking candidates who are enrolled in and completing educator preparation programs, allowing the state to more accurately connect educators working in Massachusetts public schools with the preparation programs they attended. ESE also built reports for organizations that offer one or more educator preparation programs (called ‘sponsoring organizations’ in Massachusetts) to access real-time data on graduates’ licenses, employment and performance, and shares much of this data publicly through online profiles of sponsoring organizations and the preparation programs they offer.²

But the “right data” will only improve the quality of new educators in Massachusetts when it is used to support program improvement and hold programs accountable for their graduates’ performance on the job—a task that ESE’s team of educator preparation specialists is spearheading. Previously, ESE specialists relied primarily on inputs such as syllabi and course descriptions to determine if a program was adequately preparing candidates. Now, those specialists can analyze data on the employment and performance of program graduates both as part of the program’s seven-year review process and on a regular basis, to identify programs that are struggling or excelling. To do this, specialists need to develop

new skills in reviewing program data and making decisions based on that data. The new responsibilities of ESE’s educator preparation specialists reflect a shift that is happening in program approval in many states as data on preparation program performance becomes available and pressure grows for states to hold preparation programs accountable for their graduates’ performance. While the recommendations in this report are targeted to

Key Players

- **Massachusetts ESE educator preparation team members** developed the regulations and led outreach to preparation programs.
- **The Commissioner and Board of Elementary and Secondary Education** recommended and approved regulations that drove new data collection and reporting requirements, and using that data in program approval.
- **Preparation programs** provided comment on the regulations and provided feedback on the use and public reporting of data.
- **IT staff** developed the Early ID system, integrated data sources, and developed the online profiles.

² Educator Preparation Program Provider profiles are available to view on the Massachusetts Department of Elementary and Secondary Education website: <http://profiles.doe.mass.edu/>

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Massachusetts, many states that are beginning the work of “data, data, data” can learn from Massachusetts’ experience and the recommendations for moving forward.

Getting the Right Data

Data on the performance of preparation program graduates is an essential element of recent efforts to improve the quality of educator preparation and increase the rigor of state approval. These efforts include proposed changes to Title II of the Higher Education Act, new national accreditation standards, recent recommendations from CCSSO and several state Race to the Top applications.³ This data is now available in many states thanks to investments over the past two decades in data systems that connect student performance to teachers. Massachusetts revised its preparation program approval regulations in June 2012 to include new data collection and reporting requirements that allow ESE to leverage its investments in data systems and report on the performance of preparation program graduates.⁴ (See Table 1 and Appendix).

The lists of candidates enrolled in and completing Massachusetts educator preparation programs are the most important parts of the new data collection requirements because the lists allow ESE to connect preparation program candidates to data collected from school districts on who is working in Massachusetts public schools.

<i>Candidate Data</i>
<ul style="list-style-type: none">• List of candidates enrolled• List of candidates completing all coursework, except the practicum/practicum equivalent• List of program completers• Candidate Demographics
<i>Program Data</i>
<ul style="list-style-type: none">• Number of faculty and faculty demographics• Substantial Changes in the content and delivery of the preparation program(s)• Annual goals for improvement and progress on prior year goals• For programs with zero completers during the year: Reasons why and plans for increasing enrollment• List of partner districts and description of the partnership

The candidate lists also allow ESE to gather demographic and educational background information from candidates. To collect this information, ESE developed the ‘Early ID System’, which ensures that all candidates are assigned a unique educator ID, the Massachusetts Education Personnel ID (MEPID), when

³ Edward Crowe, “Race to the Top and Teacher Preparation,” (Washington, D.C.: Center for American Progress, 2011); *Our Responsibility, Our Promise*, (Washington, D.C.: Council of Chief State School Officers, 2012); *2013 Standard for Accreditation of Educator Preparation* (Washington, D.C.: Council for the Accreditation of Educator Preparation, 2013); Negotiated Rulemaking for Higher Education, 2011:

<http://www2.ed.gov/policy/highered/reg/hearulemaking/2011/teacherprep-2-draftpart612.pdf>

⁴ See <http://www.doe.mass.edu/lawsregs/603cmr7.html?section=03>

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they enroll in a preparation program. Previously, preparation program candidates were not assigned a MEPID until later: for some, it was assigned when they became employed in a public school, while others were assigned a MEPID when they applied for an educator license. The MEPID stays with candidates as they complete the preparation program, get licensed and become employed in a Massachusetts public school.

Using MEPIDs to collect the lists of candidates enrolled in and completing preparation programs allows ESE to answer several important questions about program performance, including:

- Are programs enrolling and graduating a diverse group of candidates?
- Are candidates' undergraduate majors aligned with the fields in which they are being prepared to teach?
- How many candidates are leaving preparation programs before completion and why are they leaving?
- What percent of program completers become employed in a Massachusetts public school and where are they working?
- Is the median growth of students served by recent program graduates high, moderate or low compared with similar students served by more experienced teachers or by teachers not prepared in a Massachusetts preparation program?
- What are the evaluation ratings of recent program completers who are working in a Massachusetts public school and how do those compare with more experienced teachers and teachers not prepared in a Massachusetts preparation program?

In addition to the data on individual candidates, the revised regulations require programs to report on important program-level information. Annual reporting on substantial program changes and program faculty allows ESE specialists to continually monitor changes in programs between the formal reviews that occur every seven years. To promote the use of data in program improvement, the revised regulations require programs to establish annual goals that are targeted, measurable, and based in the data that is regularly reported on their candidates' employment and performance. Programs must also provide reasons why individual programs have had no program completers in the past year and provide an explanation of how the program plans to increase enrollment. Finally, by requiring programs to report on their partnerships with districts, ESE is underscoring the importance of those partnerships and has the data needed to evaluate whether those partnerships are working and leading to better performance among program completers.

Recommendations for Massachusetts: Additional Data Collection

- **Connect educator preparation enrollment with Department of Higher Education data** on college enrollment to capture more detailed information on the academic background of prospective teachers from state colleges and universities.
- **Capture data on student teacher placements**, mentor teachers, and preparation program-district partnerships by including student teachers in the employment data ESE collects from districts.
- Work with other states to **develop a national educator clearinghouse**, which would allow Massachusetts to collect and report employment information for educators who work outside of the state.

Sharing the Right Data

Using Edwin Analytics, the data analysis and reporting system that schools and districts use to access information on their students, ESE built three reports to regularly share candidate data with sponsoring organizations. Through ESE's online security portal, organizations can view the most recent data available on the progression of candidates enrolled in their programs, the employment of candidates who completed their programs, and the evaluation ratings and median growth percentiles of employed candidates. They can also view individual-level information on candidates' licensure and employment status. According to the Data Quality Campaign, only eight states currently share this type of candidate performance data with educator preparation programs.⁵

The reports provided to organizations allow them to filter by program characteristics, such as the subject area, whether it is a baccalaureate or post-baccalaureate program, and whether it is a program for teachers or administrators. Statewide comparisons with all program completers are also filtered on the reports to facilitate accurate comparisons between programs and statewide data. The goal of these reports is to guide preparation program improvement by allowing sponsoring organizations to identify particularly strong or weak programs within the organization, drill down to the individual candidate level, and track progress over time, mirroring the detailed reports provided to K-12 teachers on their students. All reports can be easily downloaded into Excel, which allows organizations to supplement state data with their own, internal data on candidates and programs.

⁵ Data Quality Campaign, 2012 *State Analysis by State Action: Action 9*: <http://www.dataqualitycampaign.org/your-states-progress/10-state-actions?action=nine>

Edwin Analytics Reports for Preparation Programs

Cohort Pipeline Report: Aggregates enrollment information at the individual program level and allows summaries by several program characteristics.

- Candidate progression from enrollment, to coursework completion, and to program completion.
- Percent of candidates progressing to completion and the average time to completion.
- Percent of program completers licensed within one year of program completion.

Massachusetts Public School Employment and Performance Summary: Aggregates employment and performance information at the individual program level and allows summaries by program characteristics and employment characteristics, such as subject area taught, job classification and employing district.

- Percent of program completers employed in a Massachusetts public school.
- Percent of program completers remaining employed in a Massachusetts public school for up to five years.
- Aggregate evaluation ratings of employed program completers.
- Distribution of program completers' median student growth by low, moderate or high growth.

Candidate Employment and Licensure List: Provides individual-level data on candidate employment and licensure for up to five years after program completion.

- Current enrollment status within the program.
- All licenses earned after program completion.
- First and most recent employing school and district.
- First and most recent job classification and work assignment.

Much of this data is—or will soon be—available to the public through online preparation program profiles. Through the existing school and district profiles page on the ESE website, the public can find a list of all approved sponsoring organizations and detailed information about each organization and individual programs on topics such as its annual goals, district partnerships, admissions requirements, licensure exam pass rates, employment rates, and, in the future, aggregate evaluation ratings of program completers and survey results from candidates. And to facilitate use of this data and comparisons across organizations and programs, ESE reports this information in statewide tables that can be easily downloaded.

Because the public data is subject to different suppression rules, public profiles provide aggregated data on employment and performance by different program characteristics, including

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baccalaureate or post-baccalaureate level, subject area, and whether the program prepared educators for an initial or professional license. Recognizing the importance of context in understanding much of this data, the profiles also allow space for organizations to provide additional context or information on admissions, partnerships, and employment.

Another important audience for these reports is the ESE educator preparation team, who need to understand and use this data to monitor program performance and hold programs accountable. ESE specialists have access to the Edwin reports and public profiles, and are also building internal tools using software such as Tableau to facilitate real-time data analysis by allowing dynamic filtering and comparisons. Using these tools, the educator preparation specialists can engage in team discussions about using the data to guide the program review and approval process for organizations or identify organizations that may need an interim review.

Recommendations for Massachusetts: How to Improve Data Sharing

- Create a mechanism for regularly capturing feedback from programs on the usefulness of the Edwin Analytics reports and a process for updating and adding reports to meet preparation program needs.
- Involve sponsoring organizations and school districts in the design of the public profile reports on evaluation ratings. Organizations can provide valuable insight on the information that is most relevant to program performance and districts can provide insight into the data that is most useful for hiring.
- Evaluate the impact of the public profiles on a variety of audiences, including prospective educators, preparation programs and districts (see the Appendix for more details).

Using Data for Improvement and Accountability

Many preparation programs already use data regularly to inform program improvement. And state approval teams are experienced in using information from syllabi, course catalogs and interviews to make recommendations for approval. But the availability of tools like Edwin Analytics fundamentally changes both of these activities.

Previously, educator preparation programs had to rely on data collected from the candidates they were able to contact and from local assessments that couldn't be compared with other programs. Now programs can use data on *all* candidates employed in a public school – not just the select ones that can be contacted – and can compare the employment and performance of their candidates with candidates coming from all state preparation programs. By establishing a uniform view of data, the

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Edwin Analytics reports can facilitate conversations within and between organizations. And the public profiles help to push this conversation forward by ensuring that data is also shared with prospective teachers and the schools and districts that hire graduates.

Where state approval teams previously had to assume that, for example, the course descriptions for prospective English teachers accurately reflected the content being taught, they can now look at whether candidates teaching English Language Arts are evaluated highly and can see if the students taught by those candidates show learning growth in English Language Arts. Regulations support data use by requiring that programs cite data as evidence of meeting program standards and indicators during their review. And data that indicate poor performance can form the basis of an ‘interim review’ that occurs outside of the seven year review cycle. If a program is identified for an interim review and the review concludes that it is low-performing, approval may be revoked if there’s no sign of improvement within a year.

But, just as teachers and principals need data use protocols and professional development to learn how to use assessment data to inform teaching, ESE specialists and preparation program staff need support to learn how to best use the newly available data on candidate performance. Massachusetts began this work with a “data pilot project”, which brought together a small group of sponsoring organizations to share early versions of the Edwin Analytics data and discuss how it can be used for program improvement. ESE has also begun creating data inquiry protocols for ESE specialists to use when reviewing data on preparation programs in advance of a program approval review (see Appendix).

Recommendations for Massachusetts: Building Capacity for Data Use

- Tap a group of data savvy educator preparation organizations to share their data use skills with other organizations through workshops and freely available data inquiry tools.
- Build protocols for ESE specialists to engage as a team with organizations’ data on a regular schedule.
- Have ESE specialists work with organizations on their annual goals to make sure goals are connected to data on candidate performance and are targeted and measurable.
- After two years of data inquiry with programs and ESE specialists, establish a set of performance metrics that would be regularly monitored by ESE specialists and would form a core part of the seven-year approval process.

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In 2013, TNTP released the results of a survey of the country's most effective teachers; the preparation they received prior to teaching ranked last among a list of twelve things that helped these "irreplaceable" teachers improve the quality of their instruction.⁶ Unfortunately, this sentiment is not new. Arthur Levine, the former president of Teachers College at Columbia University, wrote in a 2006 report that "Taken as a whole the nation's teacher education programs would have to be described as inadequate."⁷ More recently, the National Council on Teacher Quality released a series of reports identifying weaknesses in programs' admission standards, practicum experiences and curriculum.⁸ States, meanwhile, have been criticized for lax approval standards, inadequate oversight of educator preparation and an unwillingness to close ineffective programs.⁹

Clearly, there is much work to be done to ensure that educator preparation programs are producing the teachers, support specialists and leaders that schools need. This imperative is captured in the ESE educator preparation team's mission: To guarantee that preparation in Massachusetts results in effective educators ready to support the success of all students.

Data has an essential role to play in this new mission. As a result, ESE changed its data collection requirements to allow it to connect educators completing state preparation programs with information on their employment and performance in public schools. And it built new reporting tools to share that information with preparation programs, the public, and the ESE specialists responsible for program review and approval.

But getting and sharing the right data is not enough, therefore ESE is now focused on building capacity to use data through data inquiry tools for ESE specialists and workshops with preparation programs. In the hands of those who know about quality educator preparation, data can help to address longstanding shortcomings in educator preparation: It can facilitate the closure of programs whose graduates are not well-prepared, monitor program performance over time, and identify programs that excel at educator preparation and should be exemplars nationwide.

⁶ *Perspectives of Irreplaceable Teachers: What America's Best Teachers Think About Teaching* (Washington, D.C.: TNTP, 2013).

⁷ Arthur Levine, *Educating School Teachers* (Washington, DC: The Education Schools Project, 2006).

⁸ Julie Greenberg, Arthur McKee, and Kate Walsh, *Teacher Prep Review* (Washington, D.C.: National Council on Teacher Quality, 2013); Julie Greenberg and Kate Walsh, *What Teacher Preparation Programs Teach About K-12 Assessment* (Washington, D.C.: National Council on Teacher Quality, 2012); Julie Greenberg, Laura Pomerance, and Kate Walsh, *Student Teaching in the United States* (Washington, D.C.: National Council on Teacher Quality, 2011); Kate Walsh, Deborah Glaser and Danielle Dunne Wilcox *What Education Schools Aren't Teaching About Reading and What Elementary Teachers Aren't Learning* (Washington, D.C.: National Council on Teacher Quality, 2006).

⁹ Chad Aldeman, Kevin Carey, Erin Dillon, Ben Miller and Elena Silva *A Measured Approach to Improving Teacher Preparation* (Washington, D.C.: Education Sector, 2011).

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Appendix A: Educator Preparation Program Profiles Evaluation Plan

Audience (in order of priority)	Theory of action	Evaluation Questions
Educator preparation programs	Because this data is 1) publicly available, 2) easily accessible, and 3) tied to program approval, preparation programs will increase their use of the data contained in the profiles to inform program improvement. This will lead to improved educator preparation that is more closely tied to the needs of school districts and the state as a whole.	<ul style="list-style-type: none"> • Are programs viewing the profiles? • Are programs examining the data contained in the profiles? If so, how are they examining it? • Are programs using the data to inform program improvement? If so, what changes have they made in response to the data?
School districts	Because this data is 1) publicly available and 2) easily accessible, school districts will use the data from the preparation program profiles to inform partnerships with preparation programs, the student teachers they accept and, ultimately, their hiring decisions. This will drive preparation programs to be more responsive to district needs.	<ul style="list-style-type: none"> • Are districts viewing the profiles? • Who, within districts, is viewing the profiles? • Are they using the data contained in the profiles and, if so, how?
Prospective teachers	Because this data is 1) publicly available and 2) easily accessible, prospective teachers will use the data to select which preparation program they will attend. Preparation programs will respond by improving outcomes to attract more and better candidates.	<ul style="list-style-type: none"> • Are prospective teachers viewing the profiles? • Was their ultimate decision on which preparation program to attend (if any) influenced by the profiles data?
ESE staff	By sharing this data through profiles, a commonly used tool within ESE, ESE offices outside of EPPL and EPPL will begin to use the data to inform work they do on educators and educator preparation. This will drive increased attention to the quality of educator preparation in the state and its connection with other ESE initiatives.	<ul style="list-style-type: none"> • Are ESE staff viewing the profiles? • If so, what data are they using and how are they using it? • Is the data leading to any changes in their work or additional attention to preparation programs?
Researchers/Press	Because this data is 1) publicly available and 2) easily accessible, it provides an opportunity for researchers and the press to analyze the data and publicly report on results. This will drive increased attention to the quality of educator preparation in the state and lead to pressure for improvement.	<ul style="list-style-type: none"> • Are members of the research community or press viewing the profiles? • Are they producing research reports or articles using the data?

Appendix B: Summary of Data Collected from Educator Preparation Programs

Data Collected	Description of Data Collection
<p>Lists of Candidates at:</p> <ul style="list-style-type: none"> • Enrollment • Coursework completion • Program Completion 	<p>Candidates are assigned a Massachusetts Educator ID (MEPID) when they create a profile in the Educator Licensure and Recruitment system (ELAR). Race, gender, and educational background information is collected when candidates create a profile.</p> <p>Using the MEPID, preparation programs report all enrolled candidates in the Early ID system and their enrollment is linked to the candidates' profiles. Programs enroll candidates by program type (teacher, administrator or professional support), subject area (i.e., biology, chemistry), grade level, category (i.e., baccalaureate, apprenticeship), and licensure level (initial or professional). As candidates progress, programs use the Early ID System to report the dates they complete their coursework and complete the program. Programs can also remove candidates from the system if they leave the program along with the reason for removal.</p>
<p>Number of faculty and faculty demographics</p>	<p>Sponsoring Organizations report organization-level data on educator preparation faculty in the State Annual Report. Organizations report the total number of full-time equivalent faculty and the faculty breakdown by gender and race.</p>
<p>Substantial Changes in the content and delivery of the preparation program(s)</p>	<p>In the State Annual Report, organizations report on up to three substantial changes to the content or delivery of their programs. Substantial changes may include a shift to online delivery, changes in the practicum requirements, or changes in leadership.</p>
<p>Annual goals for improvement and progress on prior year goals</p>	<p>Using the SMART goals format, organizations report on up to three goals for the upcoming year and also on their progress toward goals reported the prior year. Goals may address, for example, increasing the diversity of candidates, improving performance on the state licensure exam, or increasing employment placements in partner districts.</p>
<p>For programs with zero completers during the year, reasons why and plans for increasing enrollment</p>	<p>In the State Annual Report, organizations verify the total number of program completers in each preparation program in the prior year. For programs with no completers, organizations must provide an explanation for why there were no completers and plans for increasing enrollment in the program.</p>
<p>List of partner districts and description of the partnership</p>	<p>District partnerships are recorded in ESE's Directory Administration system, which allows for continual updates. Organizations can check all districts with which they have partnerships using a list of public school districts, charter schools and collaboratives. Organizations can also provide a description of those partnerships as well as a description of partnerships with private or out-of-state schools that are not listed.</p>

Appendix C: ESE Specialist Data Inquiry Protocol on Preparation Program Completers

Pre-work

ESE Specialists each select one organization that is slated for the next review cycle and examine three years of data on preparation program completers. Specialists answer the following questions about their organization:

1. How many, and which, programs have had no completers over the past three years?
 - Are these programs in high need areas?
 - What are the organization's plans for increasing enrollment, as reported in the state annual report?
2. Are there programs with a big increase or decrease numbers of program completers over the three year period?
 - What does this say about the organizations' investments in its programs? Does it reflect candidate interest in programs?
 - Do these changes raise concerns about the organization? Are the changes encouraging?
3. Are there one or two programs that most people complete or are completers spread out across programs?
 - What does this say about the organization's resource investment?
 - Should ESE focus its review on the programs that produce the most completers?

Discussion

Goal: Identify at least one way each question can inform the program review process.

- Each Specialist shares one insight from each of the pre-work questions. The discussion leader displays the data for the organization as each Specialist discusses their findings.
- The discussion leader displays the data for a new organization and, as a group, the Specialists discuss the pre-work questions for that organization.
- Each Specialist shares their thoughts on how this data informs the review process.

Wrap-up Questions

- What was hard about this exercise? Easy?
- Are there other trends or patterns that jumped out in your data?
- How can you use program completer data to prepare for program approval visits?
- Is there additional data that can supplement the program completer data?