Research Agenda

May 2019

PDE Mission Statement: The mission of the department is to ensure that every learner has access to a world-class education system that academically prepares children and adults to succeed as productive citizens. Further, the department seeks to establish a culture that is committed to improving opportunities throughout the commonwealth by ensuring that technical support, resources, and optimal learning environments are available for all students, whether children or adults.

PDE Vision Statement: Pennsylvania learners will be prepared for meaningful engagement in postsecondary education, in workforce training, in career pathways, and as responsible, involved citizens.

PURPOSE

The Pennsylvania Department of Education (PDE) developed this Research Agenda in collaboration with internal and external stakeholders as part of a Statewide Longitudinal Data Systems (SLDS) grant received in September 2015. As part of this project, the agency identified topics and questions that are aligned with the agency’s goals and priorities. While this Research Agenda outlines areas of interest, the Department does not have resources committed to answering each question; as such, PDE would welcome proposals from independent, non-partisan researchers interested in addressing these questions and topic areas.

Questions with an asterisk are being addressed through current IRB approved research projects.

PK-20 POLICY

Questions: 

1. How does school funding impact opportunities and outcomes for students? What are effects of school-level resources when controlling for student-level characteristics and contexts, such as race or ethnicity, economically disadvantages, etc.? Research

2. Do 3rd Grade Reading and 7th Grade math scores predict a student’s ability to graduate from high school and continue with postsecondary education? * Research
Questions:  

3. Does enrollment in algebra for 8th or 11th Grade math predict postsecondary enrollment? *  
   Method: Research

4. Are some racial/ethnic or geographic populations (rural/urban comparison) doing better or worse than others in terms of educational attainment (B.A., A.A., 2-year certificate, 1-year certificate, Industry Credential)? *  
   Method: Data Pull

5. How are Pennsylvania schools and districts implementing career pathways for students? What are the most common career planning and exploration activities implemented in elementary, middle, and high schools? What is the quality of these pathways? How do these career pathways programs impact student K-12 and postsecondary outcomes?  
   Method: Research

6. How do the educational and labor market outcomes for students who completed career and technical education coursework and programs of study in high school compare with students who did not complete CTE coursework in high school  
   Method: Research

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EARLY CHILDHOOD EDUCATION

Early Childhood: Access  
Questions:  

1. What are the differences between the needs of certain geographic areas (e.g. high percent of low poverty) versus the needs of other areas? How does the actual capacity of child care providers change based on those needs?  
   Method: Research

2. What are the differences between desired outcomes of families who reside in at-risk communities, and how can further expansion of home visiting programs help to achieve those outcomes?  
   Method: Research

Early Childhood: Dosage  
Questions:  

1. How does dosage affect other outcomes (decreased use of special education, decreased rate of retention)? *  
   a. Does participation in multiple OCDEL programs decrease the likelihood of being placed in special education or not advancing from grade to grade? *  
   b. Does dosage have a different impact on retention or identification as needing special education for children who are economically disadvantaged? *  
   Method: Research
Questions:  

    c. Are there gender differences and racial ethnic differences? *

Early Childhood: Quality

Questions:  

1. What economic gains are realized from investing resources in early childhood? Return on investment?  
   a. Decreased use of Special Education  
   b. Decrease in students being retained  
   c. Greater Graduation Rate  
   d. Decrease in involvement with the criminal justice system  
   e. Postsecondary access and persistence  
   f. Employment  
   g. Military  

K-12 EDUCATION

Accountability and School Supports

Questions:  

1. How does integrating student supports through community partnerships – such as through a community schools initiative – impact district- and school-level improvement efforts? What impact do these initiatives have on student-level outcomes, including academic achievement, engagement, and other outcomes?

Career Readiness

Questions:  

1. Are students who engage in work-based learning opportunities more likely to enroll in postsecondary education and earn a credential or degree?  

2. What career pathways are more likely to have work-based learning opportunities associated with them?  

2. Which schools across the state offer work-based learning opportunities and how many students are participating in those opportunities, broken down by student subgroup?
Charter Schools and School Choice

Questions:

1. What is the impact of Pennsylvania’s charter schools on students’ academic achievement and postsecondary outcomes? Does the impact vary for different groups of students (i.e., students with disabilities, English learners, etc.)? * Research

2. Do students who participate in different education choice options (intra- and inter-district) differ from those who are not? What factors increase the likelihood of a student exiting a school for a charter or other school option versus traditional district schools? Research

STEM Education

Questions:

1. What is the impact of students’ STEM course-taking patterns in middle and high school on their postsecondary trajectory (i.e., postsecondary major, employment outcomes)? * Research

2. What factors influence the availability of high-quality STEM education in school districts (i.e., teacher qualifications and credentials, school funding, STEM employers in community/region)? * How do state policy changes (such as flexibility to substitute math or science graduation requirements with a computer science or information technology course credits) influence students’ course-taking patterns and/or postsecondary pathways? Research

School Climate

Questions:

1. Using existing achievement data and OSS data, evaluate the correlates of the PA School Climate Survey (SCS)/domains. * For example:
   a. Is there a correlation between the aggregate items on the Safe Schools Report (SSR) and the aggregate (“Safe and Respectful School Climate”) of those on PDE School Climate Survey (SCS). Consider all versions of the latter - students, staff, parents, and community)? * Research
   b. Compare SSR specific data elements (i.e. bullying, fighting, etc.) to corresponding elements in the SCS. *
   c. Compare the following dimensions of the PDE School Climate Surveys with the corresponding aggregate scores of the PSSA/Keystone: *
      i. High Expectations/Academic Rigor/Challenge
      ii. Student Support
Questions:  

2. What is the relationship between presence of a school resource officer and/or school police officer in a school and schools’ reportable disciplinary rates and school climate?  
   a. How frequently are schools using remedial programs and how does this relate to disciplinary rates and school climate?  
   b. Determine if there is a disproportionate number of disciplinary reports (in-school and out-of-school suspensions, expulsions, or referrals to law enforcement, arrests) on student subgroups (race, gender, grade level, ethnicity, IEP, sexual orientation).

Educator Preparation, Retention and Supports  

Questions:  

1. What is the annual trend in certification by type of certification? How does this compare with vacancies? *  

2. What percentage of certified teachers are employed in Pennsylvania? *  

3. What is the average length of time a teacher is employed in the same school?*  

4. Is there a relationship between professional development and teacher retention? Principal retention? What factors lead to increased retention for teachers and school leaders? *  

5. What PA Institutions of Higher Education (IHE)s graduate the highest number of teacher candidates of color?  

6. How are teacher candidates recruited? What are the strategies used by IHEs that successfully recruit and retain to completion higher percentages of teacher candidates of color (besides geography)?  

7. How does IHE recruitment that targets students of color support, retain (to completion) and guide minority candidates? (i.e. mentoring, additional resources and supports needed for retention and completion, etc.).  

8. What impact do induction programs have on the retention of teachers of color? What elements of an induction program correlate with higher retention rates of teachers of color?
POSTSECONDARY EDUCATION

Adult Basic Education

Questions:

1. What are the degree/certificate/completion rates for commonwealth residents who earn a HS equivalency certificate? *  

2. Are there demographic (racial/ethnic, age, gender) differences between completers and non-completers? *  

3. What percentages of students who begin Adult basic services earn HS equivalency, enroll in postsecondary, persist, earn a degree/credential and are employed? *  

4. Which postsecondary training programs lead to the highest earning for completers?  

5. How does the training offered by the Professional Development System (PDS) for Adult Education impact teacher practice and student outcomes?  

Method: 

Data Pull

Access to Postsecondary Education

Questions:

1. Does math course taking, score on PSSA or Keystone passage increase the likelihood of enrolling, persisting and graduating from a postsecondary institution? *  

2. Does enrollment in honors or AP courses or participation in dual enrollment increase the likelihood of postsecondary enrollment and are there demographic differences? Postsecondary access? Postsecondary success? *  

3. Are there regional differences between students’ access to postsecondary education?  

Method: 

Research

Data Pull

Access: Perkins

Questions:

1. What percent of Perkins Grant recipients enroll in postsecondary, are retained and earn a credential? Is this different than similar students; are there differences by institutional type and student demographic characteristics?  

2. What is the time to completion for Perkins grant recipients?  

3. Are there institutional differences between completers and non-completers?  

Method: 

Research and Data Pull

Data Pull
Questions:

4. Are there racial and ethnic differences between completers and non-completers?  

Method:

Data Pull

Postsecondary Retention

Question:

1. What are the retention rates for students attending Pennsylvania colleges?  
Are there differences by sector (public, private, two-year, etc.)?  

Method:

Research

Completion

Questions:

1. What are the measurable education achievements (earning a credential, transferring to a baccalaureate program) for different populations in Pennsylvania?  
   a. Is it different by sector (public, private, two-year, etc.)?  

Method:

Research

2. Is there a correlation between graduation from high achieving high schools and post-secondary completion?  

Method:

Research

3. Is there a correlation between graduation from low achieving high schools and post-secondary completion?  [For example based on Comprehensive Support and Improvement (CSI), Additional Targeted Support and Improvement (A-TSI) schools]  

Method:

Research

Transfer and Articulation

Questions:

1. What percentage of students transfer to a different institutional type (two year, four year) in the commonwealth?  
   a. How has the rate and number of students transferring to four-year institutions changed since the implementation of the transfer and articulation system?  
   b. Has the educational pipeline from the community college changed since implementation of the transfer and articulation system with respect to the kinds of students transferring? (race/gender/age/income/SES)  

Method:

Data Pull

2. How many students are transferring with associate degrees and how does this effect time-to-degree?  

Method:

Data Pull

3. Which factors predict transfer among Pennsylvania community college students?  

Method:

Research
WORKFORCE

Questions:

1. How do students’ postsecondary education pathways (i.e., what type of institution they started at, where they transferred, and whether they completed on time) impact employment outcomes?

Method: Research

2. How do the educational and labor market outcomes for students who completed career and technical education coursework and programs of study in high school compare with students who did not complete CTE coursework in high school?

Method: Research

PUBLIC LIBRARIES

Questions:

1. What effect does participation in public library early learning classes and programs (e.g., story times) have on kindergarten readiness and reading/literacy skills in early grades?

Method: Research

2. How does participation in public library summer reading programs affect students’ reading and literacy skills in the short- and long-term?

Method: Research

3. Does greater availability of school libraries and Library Science K-12 certified librarians correlate with improved student academic achievement and outcomes (including postsecondary education)?

Method: Research

4. What is the effect on a community if residents have access to a public library? (Compare communities that have access and communities that do not using measures such as educational attainment, local economic activity, residential desirability, or other measures of community vitality.)

Method: Research

5. What is the impact of public library broadband access in communities that lack high-speed access? (especially in light of FCC’s stated goals of: Internet access for libraries that serve fewer than 50,000 people of at least 100 Mbps and at least 1 Gbps for libraries that serve 50,000 people or more and for libraries connected by a WAN, the measure will be the total number of libraries that have a connection capable of providing a data service scalable to at least 10 Gbps.)

Method: Research