



Essential Questions

Using Geographic Information Systems Maps to Inform Work-Based Learning Decisions



Nearly five decades of research has demonstrated that the places where individuals live and learn have a dramatic impact on their opportunities and life outcomes. These place effects—the advantages and disadvantages that one inherits by simply living in a particular location—have a particularly strong impact on one’s access to high-quality education, workforce training, and employment, which are the key ingredients to upward economic mobility. It is vital that leaders in state and local education agencies are mindful of place effects as they help districts and schools to develop work-based learning (WBL) systems across diverse contexts.

To support this critical work, the College and Career Readiness and Success Center has collaborated with several state and local agencies to produce custom-designed maps using [Geographic Information Systems \(GIS\)](#) to help leadership teams *contextualize* their WBL initiatives, that is, to develop a more precise understanding of how resources and socioeconomic factors are distributed. This resource is a collection of essential WBL questions that state agency partners can answer using GIS mapping data. Embedded within the essential questions are a series of probing questions that further support the use of the maps to develop and implement quality WBL systems.

Essential Question 1

How are WBL resources and services distributed within a state?



Probing Education Questions

- What is the distribution of available career and technology education (CTE) programs throughout the state?
 - Do all high schools offer CTE programs?
 - If not, are there CTE programs offered within all districts?
- What is the distribution of WBL programs throughout the state?
 - Do all high schools offer WBL programs?
 - If not, are there WBL programs offered within all districts?
- Are schools (or districts) that offer CTE and WBL programs located near community colleges?
 - Do the schools (or districts) provide dual enrollment or job training opportunities to students?

CONSIDERATIONS FOR GIS MAPS

As states and local communities explore GIS maps to inform their WBL decisions, it is important to consider the geographic boundaries that the data sources represent. For example, K-12 data will represent school districts, whereas economic data represent the state’s economic development regions and workforce data represent the state’s workforce development regions. Understanding that the geographic boundaries do not align completely means understanding that the funding streams and interests of the different stakeholders may not always align completely.



Probing Economic Questions

- What are the priority industries in different regions of the state?
 - Do these industries align with the state’s broader economic development plan?
- How many businesses within the state’s economic development regions support internships, apprenticeships, or job shadowing for students?
 - Is this a sufficient number for the state’s economic goals?
- Are there locations where local and regional chambers of commerce and/or workforce development boards are well positioned to support WBL efforts?
 - What is their proximity to secondary schools?
 - What is their proximity to institutions of higher education?

Essential Question 2 How well are WBL resources aligned across the state?



Probing Education Questions

- Do career and technical education programs of study offered align to statewide, regional, and local labor market demands?
 - Are the programs of study offered in high-demand, high-wage industries within the state?
 - Are programs of study that are irrelevant to current state economic and labor demands offered to students?
- Do secondary education career pathways programs seamlessly integrate with programs in higher education?
 - Are there articulation agreements between secondary programs and institutions of higher education that acknowledge and accept coursework and experience for postsecondary credit?
 - Is the coursework aligned between secondary and postsecondary institutions to ensure nonduplication of content?

PROGRAMS OF STUDY

A program of study is a comprehensive, structured approach for delivering academic and career and technical education to prepare students for postsecondary education and career success. The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) requires that all eligible providers offer at least one program of study. Additional information on program of study requirements can be found [here](#).

CAREER PATHWAYS PROGRAMS

A career pathways system coordinates people and resources both within and across education, workforce, and human services systems. Within education, this includes aligning the K–12 and postsecondary education systems and, in particular, the career and technical education programs and services provided within and across program providers.



Probing Economic Questions

- Which local businesses have vacancies for entry-level positions?
 - Are these businesses in high-demand industries?
 - Are these businesses located in districts that offer CTE or WBL programs in those industries?



Probing Infrastructure Questions

- Are public transportation options available for students participating in WBL?
 - Are there areas where no public transportation options exist?
 - Are other methods of transportation available to students?
- How are broadband services distributed throughout the state?
 - Are there isolated communities without broadband access?
 - Are supplemental services, mobile learning labs or in-school simulations, offered as WBL programs?

Essential Question 3

What socioeconomic factors impact WBL opportunities for students?



Probing Socioeconomic Questions

- Where do economic factors decrease opportunities for quality WBL programs?
 - Where are there pockets of extreme poverty?
 - Where are there large numbers of unemployed adults?
 - Where are adult literacy rates low?
 - Where are the schools and communities racially and economically segregated?



Probing Education Questions

- Where does school location decrease opportunities for quality WBL programs?
 - Where are there high concentrations of low-performing schools?
 - Which programs of study have few, if any, high-demand, high-wage industry clusters in close proximity?

For more information, please contact Susan Therriault at stherriault@air.org.



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