

DATA TOOLKIT

DATA EMPOWERMENT
FOR CONTINUOUS
IMPROVEMENT

Peachtree City, GA

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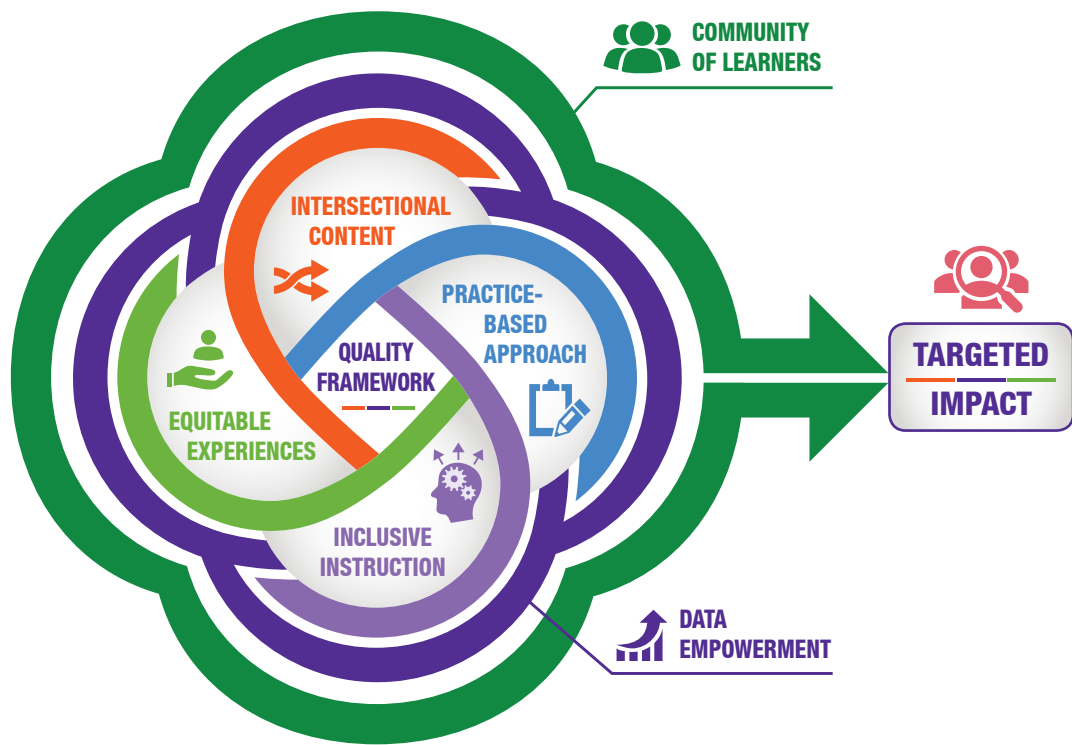
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BranchED

BranchED is the only non-profit organization in the country dedicated to strengthening, growing, and amplifying the impact of educator preparation at Minority Serving Institutions (MSIs), with the longer-range goals of both diversifying the teaching profession and intentionally addressing critical issues of educational equity for all students. Our vision is for all students to access diverse, highly effective educators.

This goal is accomplished through application of our *Framework for the Quality Preparation of Educators*. The Framework outlines a roadmap to create teacher preparation programs that meet the needs of our increasingly diverse student body. It seeks to build equity-oriented educator preparation programs (EPPs) that prepare educators to reflect, respect, and reify the value of the diversity of America's PK-12 school children.

BranchED Framework for the Quality Preparation of Educators



The Framework identifies *six critical focus areas* that teacher preparation providers can leverage to redesign their programs. Two of these focus areas (Community of Learners and Data Empowerment) provide the foundation for the remaining focus areas. This toolkit focuses on Data Empowerment through development of a Community of Learners, both of which are essential in ensuring quality programs and supporting continuous program improvement efforts.



Introduction to the Toolkit

Intended Users

This toolkit is intended for a team of education practitioners comprised of teacher educators from colleges of education and PK-12 districts who are working together in program development and continuous improvement efforts. We define teacher educators as any individual who plays a role in the preparation of teacher candidates by providing instruction, guidance, or leadership. Teacher educators may hold roles such as: Teacher Education and Arts and Sciences faculty employed by a university, higher education administrators, site coordinators, coaches, clinical instructors, PK-12 school-based teachers (e.g., mentor or coordinating teachers), and/or PK-12 administrators. Additional key stakeholders, including teacher candidates, community members, and PK-12 students, are included at strategic points along the way as the work progresses and would also benefit from the resources included in this toolkit.

Overview of the Toolkit

This toolkit focuses on the foundational knowledge and skills necessary to support data informed decision-making for continuous program improvement. It is the first of several toolkits BranchED is developing to further EPPs' efforts toward data empowerment and transitioning from a culture of compliance to a culture of inquiry. The document is intended to provide foundational understanding of the need for purposeful collective action to foster an active culture of inquiry. It is designed to ensure a shared understanding of factors pertinent to data-based decision-making. It also provides several resources and tools to assist EPPs with this work.

SUBSEQUENT TOOLKITS WILL FOCUS ON:

- data collection, analysis, visualization, and dissemination through a variety of methods
- stakeholder participation in program improvement efforts from conceptualization to analysis and action
- development of a research agenda for program improvement



Data Empowerment

Data are around us every day. Our decisions, personal and work-related, revolve around data. For example, consider that you are in the mood for takeout. To make this decision, you rely on your experience with the quality of food, speed of service, and prices from nearby restaurants. Your final decision is based on these data.

Within the educational system, data refers to a set of numbers, characters, processes, or comments that represent the actions of persons and/or institutions. Data take many forms; they can be qualitative or quantitative, simple or complex, and can be continuous or grouped. Nonetheless, we use data officially or unofficially to provide information within our institution or with our stakeholders and accrediting bodies to enhance processes, measures, and ultimately outcomes. Empowerment is defined as authority or power given to someone to do something. Data empowerment, therefore, is empowering individuals and the collective to access and

engage with their own data to improve their community.

Data empowerment is most effective when it addresses and dismantles issues of inequity. In a culture of inquiry, it is essential to ask questions that correct unsubstantiated assumptions, remove bias and prejudices, and defy supporting inequitable agendas. For example, you may want to explore who is involved while planning for and collecting data, who has access to the data, what lenses are guiding the interpretation of the data, and/or the impact of previous decisions on certain groups. The *Data Equity Focused Guided Questions (Appendix 1)* provides a more expansive list of focus questions to guide your efforts.

Continuous Improvement

Before diving deeper into using data to improve EPPs, we must consider the model that has become nearly synonymous with data-informed decision making. That term is 'Continuous Improvement.' On the simplest level, this can be a regular and ongoing [continuous] practice of changing for the better [improvement]. Improvement should not simply be disjointed, haphazard, or one-off occurrences, even if clear positive changes result. Improvement should instead be signified by clear overarching goals to refine

and improve teacher candidate outcomes and experiences.

Continuous improvement is an expectation for all entities, although it is not always implemented as intended (e.g., when efforts emphasize a culture of compliance rather than a culture of inquiry). Building a culture of inquiry utilizes an authentic and ongoing cycle of evidence-based improvement that begins with asking thoughtful questions, moves through organizational learning and action, and ends with an evaluation of the effectiveness of actions taken.



Intersection of Data Empowerment & Continuous Improvement

Focusing on data empowerment or continuous improvement independently can lead to disjointed understanding when informing decisions and evaluating progress. It is at the intersection of these two ideas that we can begin to see a more holistic picture of the work that has been done and the opportunities that lie ahead. The BranchED Quality Framework aligns this intersection with an active culture of inquiry. Continuous improvement in a culture of inquiry often begins by focusing on a climate where the value of questions is understood, and safe and brave spaces are cultivated to ask those questions. Collectively reframing the “why” of data collection and interpretation is a crucial first step for opening the door to ask meaningful questions regarding data practices.

There is a great deal of evidence required by state and national accrediting bodies to remain in compliance with standards. These accountability policies often lead to the collection and reporting of a great deal of data that are not actually used to inform decisions, allocate resources, or deploy supports. This culture of compliance focuses on data or evidence as the agent of improvement – *if we collect and report more data, we will have evidence of our efforts toward improvement*. However,

**DATA EMPOWERMENT
IN A CULTURE OF INQUIRY**
allows every stakeholder to bring
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just having data is not enough. Access is only the first step. In the development of a culture of inquiry, stakeholders must be the co-creators of continuous improvement efforts. Data empowerment in a culture of inquiry allows every stakeholder to no longer be regarded as simply a producer or provider of data – but to bring their unique lens and contextual knowledge to engage as a co-creator of transformational work.

Engaging Key Stakeholders in Data Discussions

Data empowerment goes beyond informing all stakeholders of data-informed decisions. It brings diverse voices to those conversations with the understanding that any meaningful decision will reflect the needs and values of those stakeholders. Decisions about data collection, analysis, and interpretation – and who we involve in those decisions – can be just as important as the actual data. A culture of inquiry welcomes all stakeholders at the table and cultivates a climate of trust and validation. It is here, in these sacred conversations, that evidence collection and data use can be reimaged. By honoring the voices of all stakeholders and approaching data with a lens of equity, educators can identify gaps in opportunity for students, reflect individually and collectively on these disparities in outcomes, and build the capacity of all stakeholders to enhance support for underserved students.

Traditionally, stakeholders are viewed as contributors, influencers, or beneficiaries of programs. The **REDI Stakeholder Identification Tool (Appendix 2)** is designed to help your EPP identify individuals and groups that are stakeholders in your ongoing work, to define their roles and resources, and to create an ongoing engagement plan. As stakeholders are identified and connected with the vision of the program, it is important to have an engagement plan in place to cultivate continued involvement. There is often a great deal of interest at the inception of a new stakeholder group, and this is a great time to build on that foundational excitement by modeling consistent engagement and feedback processes from the beginning.



Best Practices in Developing a Culture of Inquiry

Focusing on a culture of compliance may lead to lack of motivation, inconsistent/low engagement, unclear processes/outcomes, difficulty identifying relevant goals, and/or difficulty articulating change work. To foster an effective culture of inquiry, successful adopters incorporate and report a set of Best Practices that are outlined below.

Best Practice	Benefits
Do pre-work to understand needs of internal and external stakeholders, and to communicate change work that enhances their practice and outcomes.	Ability to tailor motivation and engagement approaches to meet the needs of your stakeholders. This fosters mutually beneficial relationships and increases the likelihood of buy-in to continuous improvement efforts.
Provide multiple points of actionable data in ways that are easily understood.	Ensures equitable access to data positioning all stakeholders as contributors to program improvement efforts.
Co-design and co-manage improvement process.	Allows for multiple viewpoints and solutions Drives data-informed decision making Provides a mechanism for documenting success for internal and external audiences
Communicate a continuous improvement process that is also aligned with state and accrediting compliance requirements	Guarantees continuous improvement goals and compliance requirements are met without duplicating effort
Map, plan, and reiterate the improvement process	Establishes an iterative process to close the loop

Identifying Actionable Data





We Have Data, Now What?

Data are powerful. They allow us to make informed decisions based on gathered evidence. Data driven decisions follow a three-step process: data collection, data analysis, and data dissemination. Usually, collecting data is one of the most challenging obstacles in this process. However, your institution collects and stores lots of data. To that end, we have developed a [Data Inventory Guide \(Appendix 3\)](#) to assist you on data exploration.

Data Processes

The handling of data requires careful planning and implementation. The following table details a data process plan to assist you in moving from data collection to data dissemination.

Data Processes

Step 1	Process	Additional Recommendations
 DATA COLLECTION	1.1 Determine how data will be stored 1.2 Determine how data will be secured 1.3 Determine where your data will be stored	Consider the variable when determining when to access the data (e.g., enrollment data can change from day to day)
	1.4 Assign data access, confidentiality, and ownership 1.5 Review saving procedures	Review saving data files and overwrite procedures
	1.6 Develop a data dictionary	Define each variable/metric Define the valid values Leave room for additional variables
	1.7 Develop the procedure for data input, and provide training as needed	Assign roles for data entry
	1.8 Develop a cycle/timeframe for entering data	Align data to collection with data availability
Step 2	Process	Additional Recommendations
 DATA VALIDATION	2.1 Develop formatting procedures	Define coding system for non-numeric data
	2.2 Develop data cleaning and maintenance procedures	Define the procedure for missing, inaccurate and/or ambiguous information
Step 3	Process	Additional Recommendations
 DATA ANALYSIS	3.1 Identify data tools for optimal use	Review different tools for your overall purpose
	3.2 Perform basic descriptive analysis	Start off with conducting a variable frequency table, reviewing measures of central tendency (Mean/Median/Mode & Standard Deviation), performing crosstab analysis among variables
Step 4	Process	Additional Recommendations
 DATA DISSEMINATION	4.1 Identify your data visualization tools	Line up categories of data with the best data visualization tool. Ex. Never use a pie chart for more than 5 variables/responses
	4.2 Present your data	What is the format for your data presentation: face-to-face or virtual? Who is your audience? How long do you have?



Visualizing Data for Ease of Use

Data visualization is the transformation of data into information through visual presentation and analysis. While data visualization may end in a graph, image, or figure, it is not simply a visual product. The process of making meaning of data by seeing connections and understanding patterns and trends is the goal of data visualization. Data dashboards are one strategy to share data in an ongoing and meaningful way. Data dashboards provide an interactive, centralized way to engage with data. These tools, designed to promote the use of data for improvement, should be accessible and designed for ease of use by stakeholders.

Engaging stakeholders in data sharing and understanding is a key component of continuous improvement. Effective data visualization is customized to meet the unique needs of a specific audience with the goal of limiting the likelihood of misinterpretation of data. When preparing to lead data empowered discussions with diverse groups of stakeholders, it is important to ensure that data are shared in a way that encourages inquiry and engagement. Offering opportunities to visualize data in creative and meaningful ways makes data easier to understand, interpret, and use.

There are many tools and programs available to provide meaningful visualization of data. As part of the Data Toolkit, we have developed a [*Data Visualization Guide using Microsoft Excel*](#). This guide will instruct you on entering your data and creating customizable visuals based on the needs of your educator preparation program.

Closing the Loop

As a culture of inquiry is cultivated across a program, data are not only used to summarize impact, but to formatively identify strengths and opportunities within practice and to implement changes to improve the program. This process of “closing the loop” encompasses asking questions of our data, interpreting results, using that information to improve student learning, and then evaluating again to determine if those changes should be adopted, adapted, or abandoned. This process of closing the loop is a crucial part of the continuous improvement process.

Closing the loop requires going beyond anecdotal evidence to integrate meaningful qualitative and quantitative data from multiple sources to inform decision making. As new data-informed interventions are developed and implemented; they are monitored to evaluate impact. This provides evidence to encourage the dissemination and adoption of best practices within the program and beyond.

Data Equity Focused Guiding Questions

Data Collection & Quality

- Whose voices are being heard in our data collection process?
- Is the data we are collecting aligned with the competencies we value?
- How is bias explored in our data collection and calibration process?
- What gaps exist in the data we are currently collecting?
- How diverse is the team collecting data? If they do not reflect the community being served, how can representative perspectives be brought into the data collection and design process?

Data Analysis & Interpretation

- Are we disaggregating candidate performance data to delve deep into equity gaps/issues?
- Are we analyzing performance data within cultural contexts or just comparing performance to a traditionally advantaged and assumed 'standard' group?
- How are stakeholders connected to our data conversations?
- How are qualitative data used to complement, explore, or question quantitative data?
- How is the community (e.g. students, families, school staff, community members) considered, prioritized, and empowered when decisions are made?

Impact of Program

- Does your EPP know if your candidates are meeting the needs of Black, Latinx, and indigenous students, and students experiencing poverty?
- Do program completers reflect the demographics of the K-12 student population? If not, who are not represented, and why?
- Is evidence disaggregated by race, ethnicity, gender, and other identity markers? If so, do disparities in performance exist?
- Have we used our data to understand what works for whom, where, when, and why?
- Are we evaluating the effectiveness of student supports in and out of the classroom and modifying based on that evaluation?



Teacher Educator Data

- How are data used to determine the effectiveness of teacher educators? What type of data? Are teacher candidate data and related outcomes data included?
- Who participates in the development and calibration of the tools utilized to evaluate teacher educators' effectiveness? Is that team diverse?
- Are there programmatic systems in place to provide teacher educators with ongoing feedback on their course development and implementation?

Teacher Candidate Data

- Who decides how teacher candidates are evaluated? Has the EPP analyzed its gateway assessments to detect bias?
- Whose voices are heard and what data are considered in determining the effectiveness of teacher candidates? Whose voices are being heard when making decisions about program design?
- What structures exist to provide meaningful, formative feedback to candidates?
- What biases are potentially present in instructional rubrics or other evaluation/assessment tools?
- Do we have a process for calibrating/training evaluators?
- How often do evaluators engage in a calibration process? Who leads this process? Does the process engage multiple perspectives and include difficult or courageous conversations about race and difference?
- How are bias and disproportionality explored in the calibration process? To what extent have key outcomes been disaggregated for background factors such as race, ethnicity, language, gender, ability, income, etc.?
- Does the candidate feedback process create a safe environment for candidates to be honest and vulnerable in their feedback?
- Is there a tool used to determine candidate proficiency? If so, who was included in its development and/or selection?
- How might bias show up in attitudinal measures of effectiveness? Are there measures in place to prevent bias?
- What observational and outcome-based measures will be used, and who determines and implements those?

REDI Stakeholder Identification Tool

REFLECT

on current EPP stakeholders

1. Use the *Stakeholder Identification Table* to organize all stakeholders currently engaging with the EPP. This table provides space to outline the vested interest of each stakeholder/stakeholder group and their specific areas of contribution. This table also asks the EPP to reflect on the resources available to each stakeholder, the benefits the stakeholder could receive through this partnership, and any barriers that should be considered.
2. Using the *Stakeholder Mapping Matrix*, plot each stakeholder group onto the matrix based on their level of influence and interest in the work of the EPP. Use this time to reflect on the questions in each quadrant about the role of the stakeholders in your work.

EVALUATE

gaps in stakeholder representation

Brainstorm categories for diverse and inclusive stakeholder representation. Using the Stakeholder Identification Table created in Step 1, map each stakeholder/stakeholder group into the appropriate category or “bucket.” Evaluate this map to gain a greater understanding of the areas that indicate opportunity to enhance partnerships or initiate new stakeholder relationships.

Guiding Questions

- What people, places, or organizations are the beneficiaries of our EPP?
- Who among them interact with our EPP on a regular basis?
- What organizations support or influence the broad work of our EPP?
- Are the communities we serve represented by our current stakeholders?
- Whose voices need to be heard? Whose voices are underrepresented or are missing?
- Who are the local education decision makers for our districts?
- Who develops educational policy for our EPP and our districts?



DISCOVER

new stakeholders

Using the identified areas for opportunity, begin identifying new stakeholders that will bridge gaps and provide greater representation of your EPP and the districts and communities that you serve. As new stakeholders are identified, they should be added to the Stakeholder Identification Table. To maximize the role of stakeholders, it is important to strategically determine the value of the project for each stakeholder and the relevance of the contributions they bring to the project. Utilize the *Stakeholder Engagement Spectrum* mapping tool for each project or initiative to better define the role of each stakeholder in the transformational work of the EPP's data-empowered continuous improvement process. Use this tool to identify a project or initiative you are embarking on within your EPP. Designate the appropriate level of engagement for relevant stakeholders related to the work of this specific project.

INVITE

all stakeholders to re-envision their partnership with the EPP

This renewed focus on representative stakeholder groups provides an opportunity to get creative with plans to more authentically and meaningfully engage all stakeholders (existing and new). This could be an event to bring all stakeholders together to celebrate shared vision and create momentum within the EPP. Consider BranchED's *Guide to Building a Shared Vision* tool to guide your efforts. Involving stakeholders in the process of envisioning and/or re-envisioning their partnership with the EPP communicates a commitment to being inclusive and outward looking.

STAKEHOLDER IDENTIFICATION TABLE

[illegible]

STAKEHOLDER MAPPING MATRIX



STAKEHOLDER ENGAGEMENT SPECTRUM (EXAMPLE)

This is an example showing how to utilize the Stakeholder Engagement Spectrum.

PROJECT/INITIATIVE				
Developing explicit list of teacher candidate competencies				
Level of Engagement	INFORM	CONSULT	INVOLVE	CO-CREATE
GOAL	Provide information to stakeholders	Stakeholders provide information	Stakeholder concerns and aspirations are understood and considered	Stakeholders work as equal designers and contributors
EPP will...	...keep you informed.	...listen to and acknowledge your concerns.	...ensure your concerns and aspirations are directly reflected in the decisions made.	...look to you for advice and innovation and incorporate this in decisions as much as possible.
via	<ul style="list-style-type: none"> ✓ Fact sheets ✓ Websites ✓ Open houses ✓ Handbooks 	<ul style="list-style-type: none"> ✓ Focus groups ✓ Surveys ✓ Forums ✓ Town hall 	<ul style="list-style-type: none"> ✓ Workshops ✓ Retreat 	<ul style="list-style-type: none"> ✓ Advisory council ✓ Research partners ✓ Design meetings
SELECT STAKEHOLDERS	<ul style="list-style-type: none"> ✓ Prospective students/teacher candidates ✓ Community members 	<ul style="list-style-type: none"> ✓ Alumni/Program Completers ✓ Accreditors (State, national) 	<ul style="list-style-type: none"> ✓ Teacher Candidates ✓ Mentor/Cooperating Teachers ✓ Clinical/Field Supervisors 	<ul style="list-style-type: none"> ✓ EPP Faculty ✓ PK-12 District Partner

* Adapted from IAP2's Public Participation Spectrum.

STAKEHOLDER ENGAGEMENT SPECTRUM

A blank version of this tool is available below.

PROJECT/INITIATIVE				
Level of Engagement	INFORM	CONSULT	INVOLVE	CO-CREATE
GOAL	Provide information to stakeholders	Stakeholders provide information	Stakeholder concerns and aspirations are understood and considered	Stakeholders work as equal designers and contributors
EPP will...	...keep you informed.	...listen to and acknowledge your concerns.	...ensure your concerns and aspirations are directly reflected in the decisions made.	...look to you for advice and innovation and incorporate this in decisions as much as possible.
via	<ul style="list-style-type: none"> ✓ Fact sheets ✓ Websites ✓ Open houses ✓ Handbooks 	<ul style="list-style-type: none"> ✓ Focus groups ✓ Surveys ✓ Forums ✓ Town hall 	<ul style="list-style-type: none"> ✓ Workshops ✓ Retreat 	<ul style="list-style-type: none"> ✓ Advisory council ✓ Research partners ✓ Design meetings
SELECT STAKEHOLDERS				

Data Inventory Guide

The table below provides a comprehensive listing of data that is likely available within your institution. It serves as a handy resource detailing where, when, and from whom you can obtain the data. In addition, you can determine whom to engage in the analysis and action planning process as well as when to share the results and with whom (i.e., disseminate to internal and external audiences). The questions provided are a representative sample of what you may want to learn from the data. The list is intended to be illustrative and not exhaustive.

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Student Overall GPA <ul style="list-style-type: none"> Admission to Institution Admission to EPP program By semester Graduation from the program 	Race Ethnicity FTFT Transfer Early College High School HS Graduated From	<ul style="list-style-type: none"> Academic performance at strategic points in time Differences in performance based on specific characteristics (or a compilation thereof) 								Is there a correlation between GPA at strategic points along the pipeline and Certification Exam pass rates/attempts?
Student GPA by course <ul style="list-style-type: none"> Content areas Instructor 	Race Ethnicity FTFT Transfer Early College High School	<ul style="list-style-type: none"> Academic performance in specific courses Differences in performance based on specific characteristics (or a compilation thereof) Difference in performance in same course based on instructor 								Is there a connection between course GPA and subsequent performance in the content certification exam? Is there a connection between course instructor and subsequent performance in the content certification exam?

* Can look at all of these at discrete points in time or longitudinally to assess change over time.

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Graduating High School	Race Ethnicity FTFT Transfer Early College High School	<ul style="list-style-type: none"> Were we are drawing students from throughout our service area 								Is there representation of all districts in our service area? If not, how can we reach out and connect with those students/districts/schools?
Early College Credit <ul style="list-style-type: none"> Number of credit hours Courses taken Institution awarding ECC 	Race Ethnicity	<ul style="list-style-type: none"> If there is a difference in early college attainment based on specific characteristics (or a compilation thereof) 								Is there a correlation between participation in and/or number of hours completed via Early College High School at strategic points along the pipeline and Certification Exam pass rates/attempts?
Financial Aid <ul style="list-style-type: none"> Institutional Scholarship 	Race Ethnicity FTFT Transfer Early College High School	<ul style="list-style-type: none"> If there is a difference in financial aid provided based on specific characteristics (or a compilation thereof) 								<p>Are students who receive financial aid more likely to complete the program?</p> <p>Are students who receive financial aid more likely to complete the program within 4 years?</p> <p>Is there a difference in amount of financial aid obtained based on specific characteristics?</p>

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Courses and Instructors <ul style="list-style-type: none"> • Prior to admission to EPP • Throughout EPP program 	Race Ethnicity FTFT Transfer Early College High School	<ul style="list-style-type: none"> • If there is a difference in academic performance based on instructor within and beyond the EPP 								Is there a connection between course GPA and subsequent performance in the content certification exam? Is there a connection between course instructor and subsequent performance in the content certification exam?
Certification Exam Content <ul style="list-style-type: none"> • Passing Score • Number of Attempts 	Race Ethnicity FTFT Transfer Early College High School Point in time taken	<ul style="list-style-type: none"> • Differences in performance based on specific characteristics (or a compilation thereof) • Differences based on domain areas • Differences based on when the exam was attempted and passed 								Is there a correlation between performance in content certification exams and course taking behaviors/instructors? Is there a difference in performance based on specific characteristics (or compilation thereof)? Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign? Is there a difference based on when the exam is attempted and passed (e.g., upon completion of content courses)?

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Certification Exam Pedagogy <ul style="list-style-type: none"> Passing Score Number of Attempts 	Race	<ul style="list-style-type: none"> Differences in performance based on specific characteristics (or a compilation thereof) 								Is there a correlation between performance in pedagogy certification exams and course taking behaviors/instructors?
	Ethnicity	<ul style="list-style-type: none"> Differences based on domain areas 								Is there a correlation between performance in pedagogy certification exams and field experiences (school/district/mentor teacher)?
	FTFT	<ul style="list-style-type: none"> Difference based on when the exam was attempted and passed 								Is there a difference in performance based on specific characteristics (or a compilation thereof)?
	Transfer									Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign?
	Early College High School									Is there a difference based on when the exam is attempted and passed (e.g., upon completion of pedagogy courses)?
	Point in time taken									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Dispositions <ul style="list-style-type: none"> List points in time (e.g., after 1st semester; mid-point in the program; end of the program) as well as by respondent 	Race	<ul style="list-style-type: none"> Differences in performance based on specific characteristics (or a compilation thereof) Differences based on domain areas 								Is there a correlation between performance in certification exams (content and pedagogy) and dispositions ratings across time?
	Ethnicity									
	FTFT									
	Transfer	<ul style="list-style-type: none"> Differences in performance based on time of assessment 								Is there a correlation between performance in certification exams (content and pedagogy) and field experiences (school/district/mentor teacher)?
	Early High School									
	Respondent (e.g., self, instructor, university supervisor, cooperating teacher)									Is there a difference in performance based on specific characteristics (or a compilation thereof)?
	Point in time									Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign?

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Confidence/ Self-Efficacy	Race	<ul style="list-style-type: none"> Differences in self-assessment ratings based on specific characteristics (or a compilation thereof) 								Is there a correlation between self-assessment ratings and pass rates/ attempts on certification exams (content and pedagogy)?
	Ethnicity									
	FTFT	<ul style="list-style-type: none"> Differences in self-assessment ratings based on domain areas 								Is there a correlation between self-assessment ratings and course taking behaviors/instructors?
	Transfer	<ul style="list-style-type: none"> Differences in self-assessment ratings based on time of assessment 								Is there a correlation between self-assessment ratings and field experiences (school/ district/mentor teacher)?
	Early High School									
	Point in time (e.g., after 1st semester; mid-point in the program; end of the program)									
	Additional disaggregation or variables that can apply:									Is there a difference in self-assessment ratings based on specific characteristics (or a compilation thereof)?
	Instructors									Are there trends based on self-assessment ratings by domain areas that would suggest the need for re-teaching or curriculum redesign?
	Courses									
	Mentor Teachers									
	Field and Clinical Experience (location, level, type, etc.)									Is there a difference based on when the assessment is completed?
	University supervisor									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Employment <ul style="list-style-type: none"> School Certification Area 	Race	<ul style="list-style-type: none"> Districts/schools most likely to hire our graduates 								Do hiring patterns differ based on specific characteristics or some compilation thereof?
	Ethnicity	<ul style="list-style-type: none"> Differences in hiring patterns based on specific characteristics (or a compilation thereof) 								Are particular districts more likely to hire our candidates?
	Setting (e.g., urban, suburban, rural, high poverty)	<ul style="list-style-type: none"> Whether graduates are hired in the area they were prepared 								Do our candidates remain in the area?
	Level									Do our candidates return to their own districts to teach?
	Type (e.g., private, charter, public, parochial)									Is there a difference in hiring patterns based on the type of clinical teaching/student teaching completed (i.e., traditional or residency)?
Retention <ul style="list-style-type: none"> Track for first five years 	Race	<ul style="list-style-type: none"> Differences in retention rates based on specific characteristics (or some compilation thereof) 								Do retention rates vary by school/district/certification area/level/etc.?
	Ethnicity	<ul style="list-style-type: none"> EPP retention rate compared to state rate and/or comparable, aspirational, or peer EPPs 								How do our retention rates compare to state rate and/or comparable, aspirational, or peer EPPs?
	Institutions	<ul style="list-style-type: none"> Differences based on certification area / school-district / level, etc. 								Do retention rates vary based on type of clinical teaching/student teaching completed (i.e., traditional or residency)?
	State									
	Setting (i.e., urban, suburban, rural)									
	Level									
	Type (i.e., private, charter, public, parochial)									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Key Assessments	Race Ethnicity FTFT Transfer Early High School Overall score Score by domain area	<ul style="list-style-type: none"> Differences in performance based on specific characteristics (or a compilation thereof) and across time Differences based on domain areas within individual key assessments 								<p>Is there a correlation between performance in certification exams (content and pedagogy) and in key assessments?</p> <p>Is there a difference in performance based on specific characteristics (or a compilation thereof)?</p> <p>Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign?</p> <p>Are there trends based on performance by program area/level that would suggest the need for re-teaching or curriculum redesign?</p>

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
PK-12 Student Survey (e.g., TRIPOD)	Race (TC)	<ul style="list-style-type: none"> PK-12 student perceptions of the instructional environment 								Are there differences in student responses based on program/level?
	Ethnicity (TC)									Are there differences in student responses based on specific characteristics of TC?
	Gender (TC)									Are there differences in student responses based on school type (e.g., rural, suburban, urban, high poverty, etc.)?
	Subject Area (TC)									Are there differences in student responses based on content area?
	Grade Level (TC)									Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign?
	School Name									Are there trends based on performance by program area/level that would suggest the need for re-teaching or curriculum redesign?
	School Type (e.g., rural, suburban, urban, private, public, etc.)									
	Domain area									
	This will vary based on the assessment.									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Observations: Early Field Experiences	Race	<ul style="list-style-type: none"> School/district in which TCs are placed 								Are TCs provided opportunities to engage in diverse settings for their early field experiences?
	Ethnicity	<ul style="list-style-type: none"> Who serve as mentor teachers 								Do we distribute our TCs equitably across our service area for early field experiences?
	School Setting									Are there differences in observation scores based on specific characteristics (or some compilation thereof)?
	Respondent (e.g., mentor teacher, university supervisor, self)									Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign?
	Level									Are there trends based on performance by program area/level that would suggest the need for re-teaching or curriculum redesign?
	Type (e.g., private, public, charter, etc.)									Are there differences in observation ratings based on respondent?

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Observations: Clinical Teaching	Race									Are there differences in observation scores based on specific characteristics?
	Ethnicity									Are there differences in observation scores based on respondent?
	School Setting									Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign?
	Respondent (e.g., mentor teacher, university supervisor, self)									Are there trends based on performance by program area/level that would suggest the need for re-teaching or curriculum redesign?
	Level									
	Type (e.g., private, public, charter, etc.)									
	Traditional or Residency									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Mentor Teacher Effectiveness (survey TCs and University Supervisors)	Race	<ul style="list-style-type: none"> Effectiveness of mentor teachers/university supervisors 								Are there differences in TC responses based on program/level?
	Ethnicity									Are there differences in TC responses based on specific characteristics of school/district?
	How they were selected									Are there differences in TC responses based on school type (e.g., rural, suburban, urban, high poverty, etc.)?
	Respondent									Are there differences in TC responses based on mentor teacher/university supervisor characteristics (or some compilation thereof)?
	Domain area									
	Years of experience									
	School Setting									
	Respondent (e.g., mentor teacher, university supervisor, self)									
	Level									
	Type (e.g., private, public, charter, etc.)									
	Traditional or Residency									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Employer Satisfaction Survey (State and/or EPP)	Race	<ul style="list-style-type: none"> How EPP compares to state average and/or comparable, aspirational, or peer EPPs 								Do our beginning teachers perform at or above the state average and/or comparable, aspirational, or peer EPPs overall?
	Ethnicity									Do our beginning teachers perform at or above the state average and/or comparable, aspirational, or peer EPPs by domain area?
	School Level									Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign?
	Type									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
TC Exit Survey	Race	<ul style="list-style-type: none"> Extent to which the program prepared them for the profession 								<p>Are there differences in based on specific characteristics (or some compilation thereof)?</p> <p>Are there differences based on domain areas?</p> <p>Are there differences based on school/program/clinical experiences/content area, level, etc.?</p>
	Ethnicity									
	FTFT									
	Transfer									
	Early College High School									
	Field Experiences and									
	Clinical Experience									
	School type (e.g., private, public, charter, etc.)									
	Type of clinical experience (traditional or residency)									
	Program									
	Level									

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Graduate Survey (State and/or EPP)	<p>This will vary based on the assessment.</p> <p>If EPP created, be intentional about how you want to disaggregate the data.</p>	<ul style="list-style-type: none"> • Extent to which the program prepared them for the profession • How the EPP compares to state average and/or comparable, aspirational, or peer EPPs 								<p>Are there differences in based on specific characteristics or some compilation thereof?</p> <p>Are there differences based on domain areas?</p> <p>Are there differences based on school/program/clinical experiences/content area/level, etc.?</p>

Data	Disaggregated By:	What does it tell me?*	Is it available?	Who is the owner?	How do I access it?	When do I access it?	Whom do I engage in the analysis process?	With whom do I share the findings?	When do I share the findings?	What questions do I have?
Transition Points List any additional data points you have available that will provide pertinent information for program improvement	This will differ based on the data available	<ul style="list-style-type: none"> Differences in performance based on specific characteristics (or a compilation thereof) and across time Differences based on domain areas within individual key assessments 								Is there a correlation between performance in certification exams (content and pedagogy) and in key assessments? Is there a difference in performance based on specific characteristics (or some compilation thereof)? Are there trends based on performance by domain areas that would suggest the need for re-teaching or curriculum redesign? Are there trends based on performance by program area/level that would suggest the need for re-teaching or curriculum redesign?

Glossary

APPENDIX 4

- **Aggregate**
Data grouped for comparison or analysis.
- **Benchmarking**
Measuring quality by comparing performance with those of peer institutions or with those of departments/divisions that are internal to an institution. The purpose is to learn how other organizations/divisions achieve performance levels and to use this information to make improvements.
- **Calibration**
Professional development provided on a regular basis to develop consistency in interpretation and scoring of the rating instruments.
- **Clinical Educators**
Teacher education faculty and P-12-school-based individuals responsible for instructing, supervising, assessing, and supporting candidates during clinical experiences.
- **Clinical Practice**
Specific time required for teacher candidates to engage in PK-12 classrooms with in-service teachers. Synonymous with student teaching, field experiences, internships, and/or clinical experiences.
- **Clinical Supervision**
A structure for facilitating a reflective process for candidates to achieve and sustain high quality practice. It typically involves focused support and development by means of pre-conference, observation, and post-observation analysis.
- **Clinical Supervisors**
Individuals (College of Education and/or district/ PK12 personnel) who engage in clinical supervision, which consists of a variety of activities including observations and feedback. Also called cooperating teachers, university liaisons, mentor teachers.
- **Competencies**
Skills, attributes, and behaviors that are considered important for successful performance as an educational professor or teacher.
- **Completers**
Individuals who completed all programmatic requirements for graduation and certification.
- **Community-based Learning**
Activities that engage candidates within local communities. Synonymous with service learning.
- **Continuous Improvement**
The process of extracting meaning from data to make decisions for continuous quality improvement of instruction and programming.
- **Culture of Data Inquiry**
The engaging environment in which data is examined, analyzed, and acted upon.
- **Culture of Evidence**
The engaging environment in which data is shared and communicated for the purpose of making decisions.
- **Critical Reflection**
Assessing teaching by making connections and drawing relationships between the teaching and concepts of diversity, power, and equity.
- **Curriculum Literacy**
Being critical consumers of instructional resources (e.g., curricula, textbooks, and instructional materials) to ensure alignment to standards and to ensure equitable instruction (e.g., adapting/supplementing curriculum to support students with differing needs, adding to, or challenging perspectives articulated in curricula and instructional materials).
- **Curriculum Mapping**
Diagramming the curriculum to identify and address gaps, redundancies, and misalignments to improve coherence of a course and/or program of study.
- **Data**
A set of numbers, characters, processes, or comments.
- **Data Access**
The amount of information made available to an individual and/or group.

- **Data Dictionary**

The defining terms of each variable/element in a given database.

- **Data Ownership**

The responsibility of collecting, organizing, and maintaining integrity of data.

- **Data Visualization**

The graphical representation of data and/or information.

- **Data Collection**

The act of gathering of all facts, figures, statistics, and other information for analyses and assessments.

- **Data Empowerment**

Providing guidance and support to assist individuals to gain knowledge, confidence, and ability to access and engage with their own data to improve their community.

- **Data Equity**

Addressing and correcting the ethnical, social and/or environmental consequences of how data is collected, analyzed, interpreted, and distributed.

- **Data Inquiry**

The systematic process of the investigation, analysis, and interpretation of data.

- **Disaggregate**

Break down aggregated data into various characteristics (e.g., age, race, ethnicity socio-economic status, academic preparation, etc.) to reveal patterns, trends, and other information.

- **Diversity**

Intentional representation of persons, perspectives, and experiences from a variety of racial, ethnic, gender, religious, and other identity groups.

- **Dispositions**

Teachers' or teacher candidates' beliefs and attitudes toward teaching and learning, and toward working with students, families, colleagues, and communities.

- **Equity**

Addressing and correcting the ethical, social, and/or environmental consequences of policies,

ideologies, institutional and systemic structures, or actions on historically marginalized groups to ensure equal opportunities for all.

- **EPP**

Educator Preparation Program.

- **Evidence**

Documentation that supports an EPP's claims related to competencies, outcomes, and indicators (e.g., Individual Transformation Plan indicators; CAEP/AAQEP standards; state standards, etc.).

- **Feedback Cycles**

Performance reviews or meetings where feedback is provided to support growth and development on an ongoing basis.

- **Formative Assessment**

Collecting ongoing information about candidates' understanding or progress and using this information to modify teaching and learning activities undertaken by the instructor, candidates, or both.

- **Fidelity**

The degree to which a course/program is delivered as intended.

- **Field Experience**

Applied experiences that are completed prior to student teaching. They can take place in community or PK-12 settings and are scaffolded, allowing pre-service teachers to move from observation to independent and small group instruction.

- **Inclusion**

Creating the conditions in which individuals are valued, respected, and supported to thrive.

- **Inter-Rater Reliability (IRR)**

The degree of agreement among raters, which can be calculated by determining percent agreement, Pearson Correlation Coefficient, Cohen's Kappa, Krippendorff's Alpha.

- **Multiple Measures**

Multiple sources of information used to determine whether an applicant possesses the requisite characteristics, knowledge, skills, and abilities required by a program.

- **Minority Serving Institutions (MSIs)**

Institutions of higher education that serve minority populations.

- **Parity**

A quality state of being equal.

- **Partnerships**

A reciprocal, well-defined relationship in which all participating members achieve common goals (e.g., EPP and district partnership) and engage in a process to monitor effectiveness.

- **PK-12 Curricula**

PK-12 instructional materials, including but not limited to textbooks, scope and sequence guides, grade level expectations, etc.

- **PK-12 Students**

Preschool, elementary, and secondary school students enrolled through 12th grade.

- **Program Features**

Choices made by an educator preparation program to create positive effects (e.g., choices made about content and instruction, clinical experiences, admission criteria, school/district partnerships, etc.). (Synonymous with program attributes).

- **Quality Control Gates**

Benchmarks at strategic points along a program of study that candidates must meet to successfully progress in and complete the educator preparation program. (Synonymous with Transition Points).

- **Rubric**

An instrument aligned to an assessment that establishes a consistent set of competencies that candidates/students must demonstrate.

- **Shared Understanding**

The extent to which members of a team and various stakeholders reach a common understanding of outcomes, tasks, processes, each other's viewpoints, and responsibilities.

- **Shared Decision-making**

A process by which stakeholders (e.g., EPP and districts/schools) collaboratively engage in the decision-making process.

- **Stakeholders**

Any individual or organization interested and/or involved in the operation and/or outcomes of the educator preparation program, and who are also impacted by the transformation process (e.g., university faculty, schools, districts, teacher candidates, community groups, businesses, community members, community education services providers, community colleges, etc.).

- **Standards**

Statements that describe what candidates can and should be able to do in a measurable way.

- **Summative Assessment**

Measuring learning at the end of a learning activity or a series of learning activities.

- **Teacher Candidates**

Individuals participating in an educator credentialing program in preparation for professional education positions. These individuals have met specific requirements to be admitted to the program or are approved for coursework and field/clinical experiences. (Synonymous with Student Teachers).

- **Teacher Educators**

Individuals who play a role in the preparation of teacher candidates by providing instruction or guidance. Teacher educators may hold roles such as: Teacher Education and Arts and Sciences faculty employed by a university, site coordinators, coaches/clinical instructors, PK-12 school-based teachers (e.g., mentor, coordinating teacher), and Pk12 administrators.

- **Transition Points**

Benchmarks at strategic points along a program of study that candidates must meet to successfully progress in and complete the educator preparation program. (Synonymous with Quality Control Gates).

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