

Engaging in Outcomes-Based Program Review that Connects to Institutional Performance Indicators



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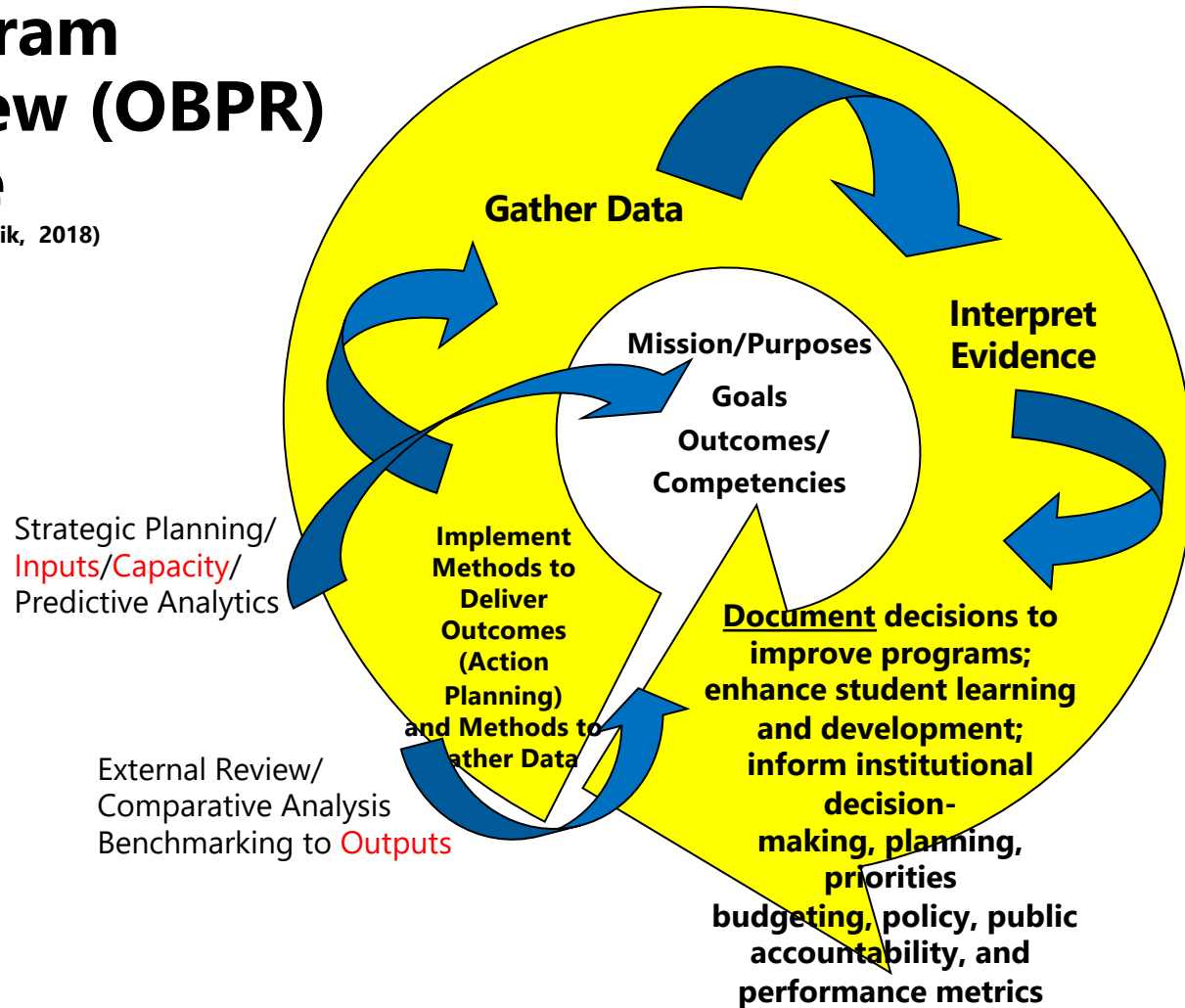
Reflection

What does your institution still need to learn about connecting program review to institutional learning indicators?

What data is supporting the design of curriculum, programs, professional development, and other experiences intended to Improve Institutional learning indicators?

The Iterative Systematic Outcomes-Based Program Review (OBPR) Cycle

(Bresciani Ludvik, 2018)



To Aid Interpretation:
* Leverage previous Research
* Correlate with Performance Indicators, Prediction and Modeling

Performance Metrics such as graduation rates, persistence rates, time to degree, matriculation into graduate school, and job placement

Easily Identified Learning through test scores and standardized exams

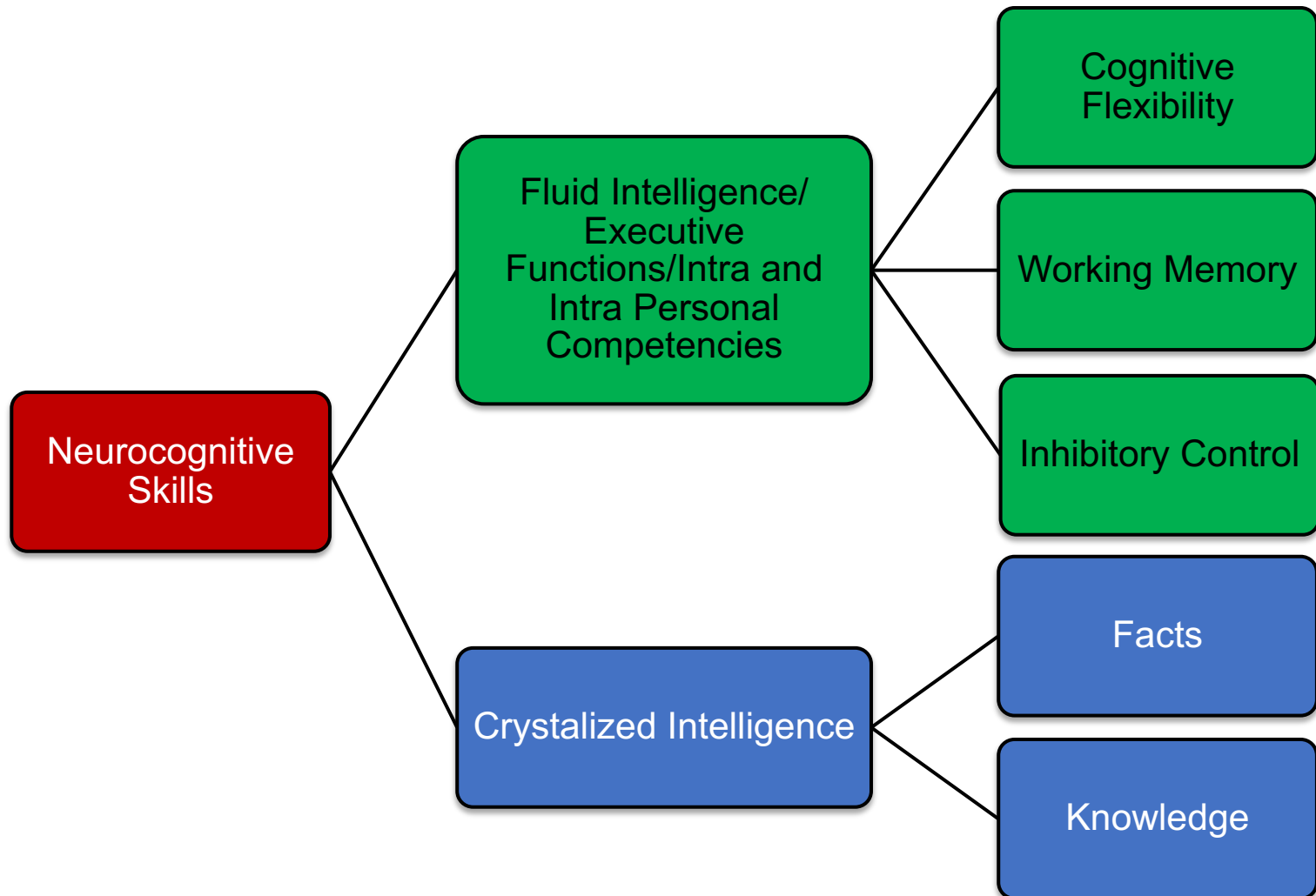


Application of skills such as:

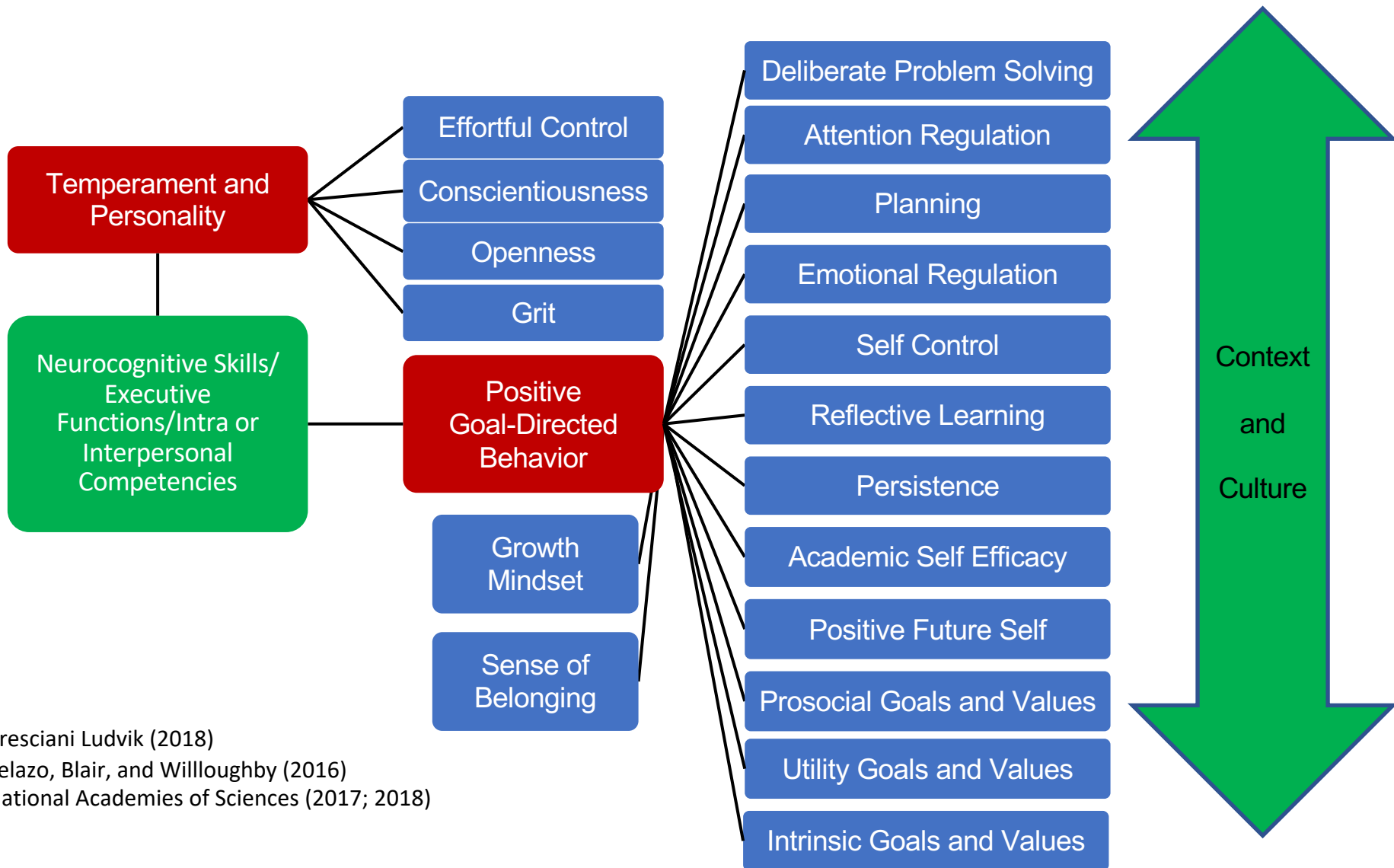
- Attention Regulation,
- Emotion Regulation,
- Active Listening,
- Empathetic Listening,
- Growth Mindset,
- Resilience,
- Prosocial Behavior,
- Implicit Bias Regulation,
- Implicit Stereotype Threat,
- Empathy,
- Openness,
- Reflective Learning,
- Conscientiousness,
- Effortful Control,
- Academic Self-Efficacy, and
- Deliberate Problem

Learning and Development as Neurocognitive Skills

(Bresciani Ludvik, 2018)



Connecting Intrapersonal Competencies to Specific Learning and Development Outcomes



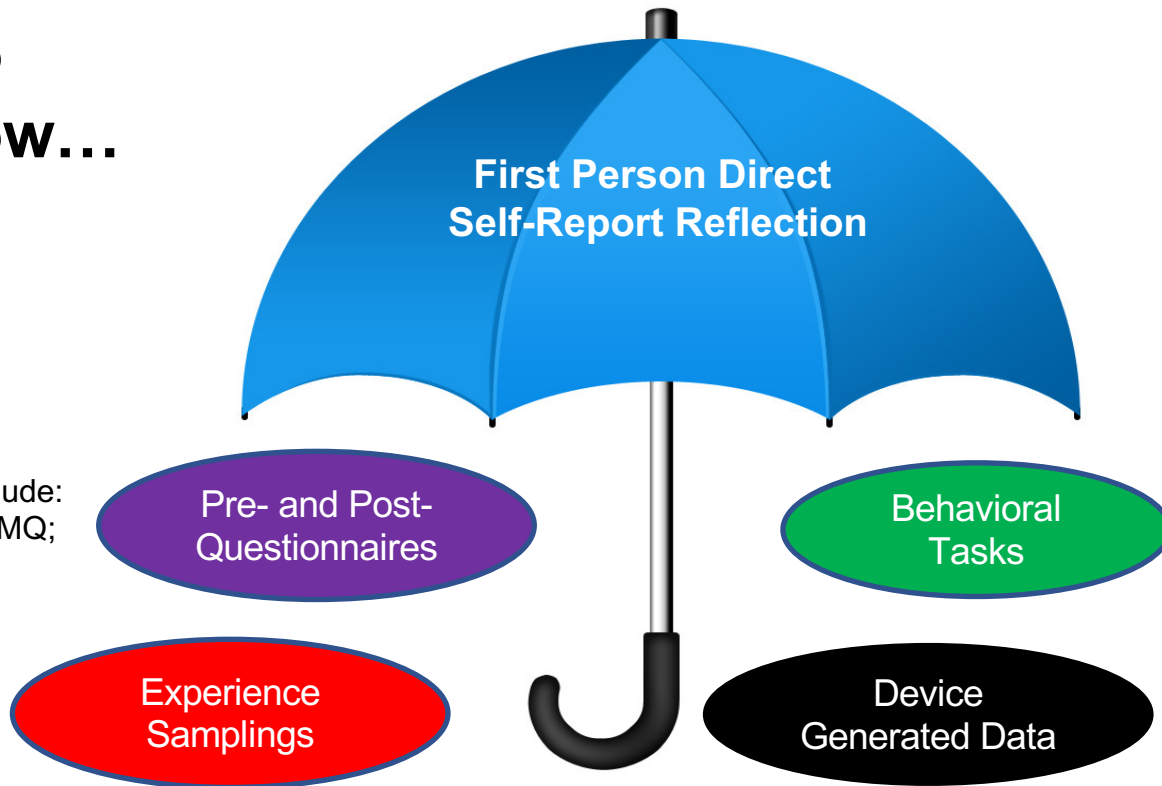
Bresciani Ludvik (2018)

Zelazo, Blair, and Willoughby (2016)

National Academies of Sciences (2017; 2018)

How Do We Know...

Examples include:
BAI; PSS; FFMQ;
MDCS, etc

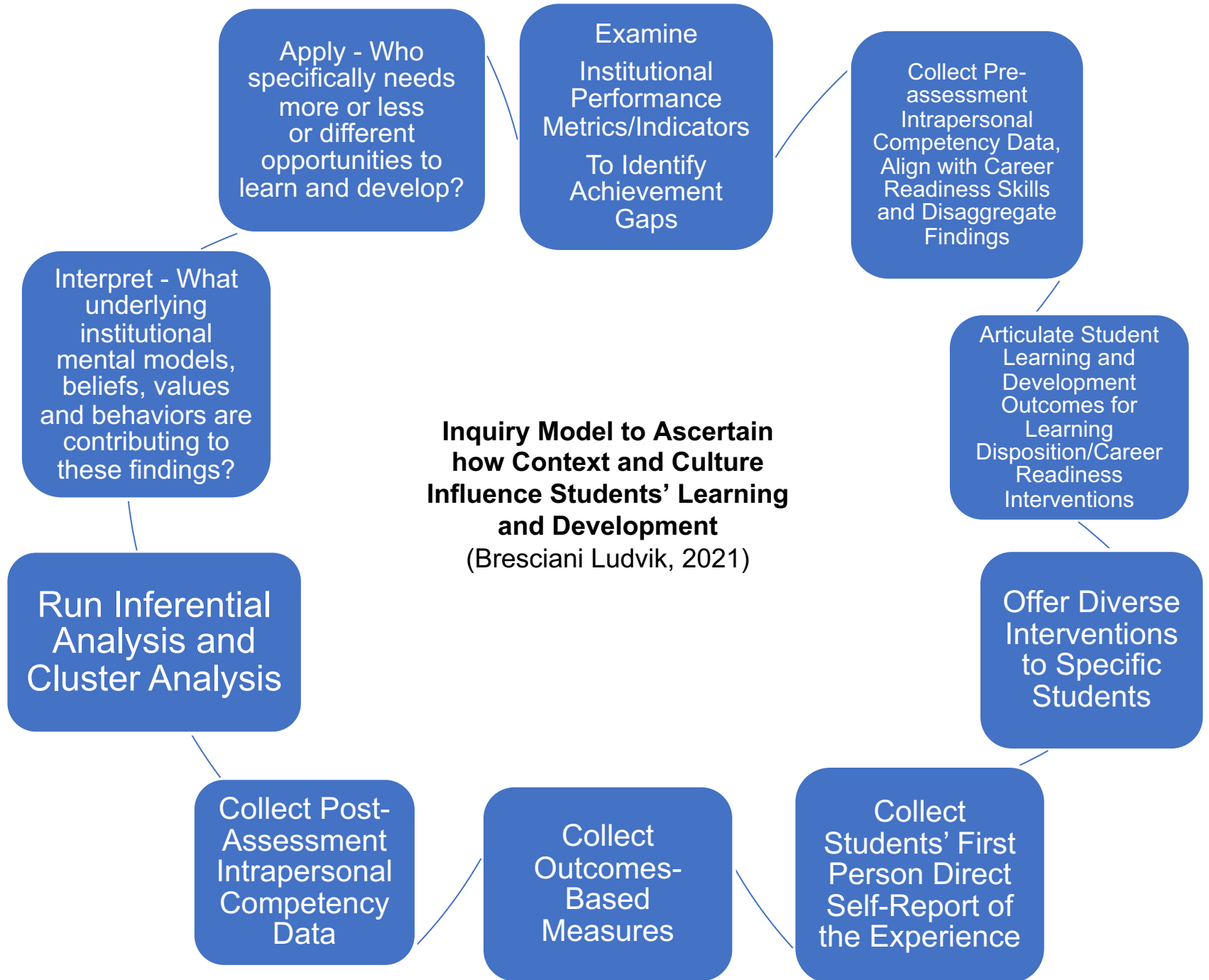


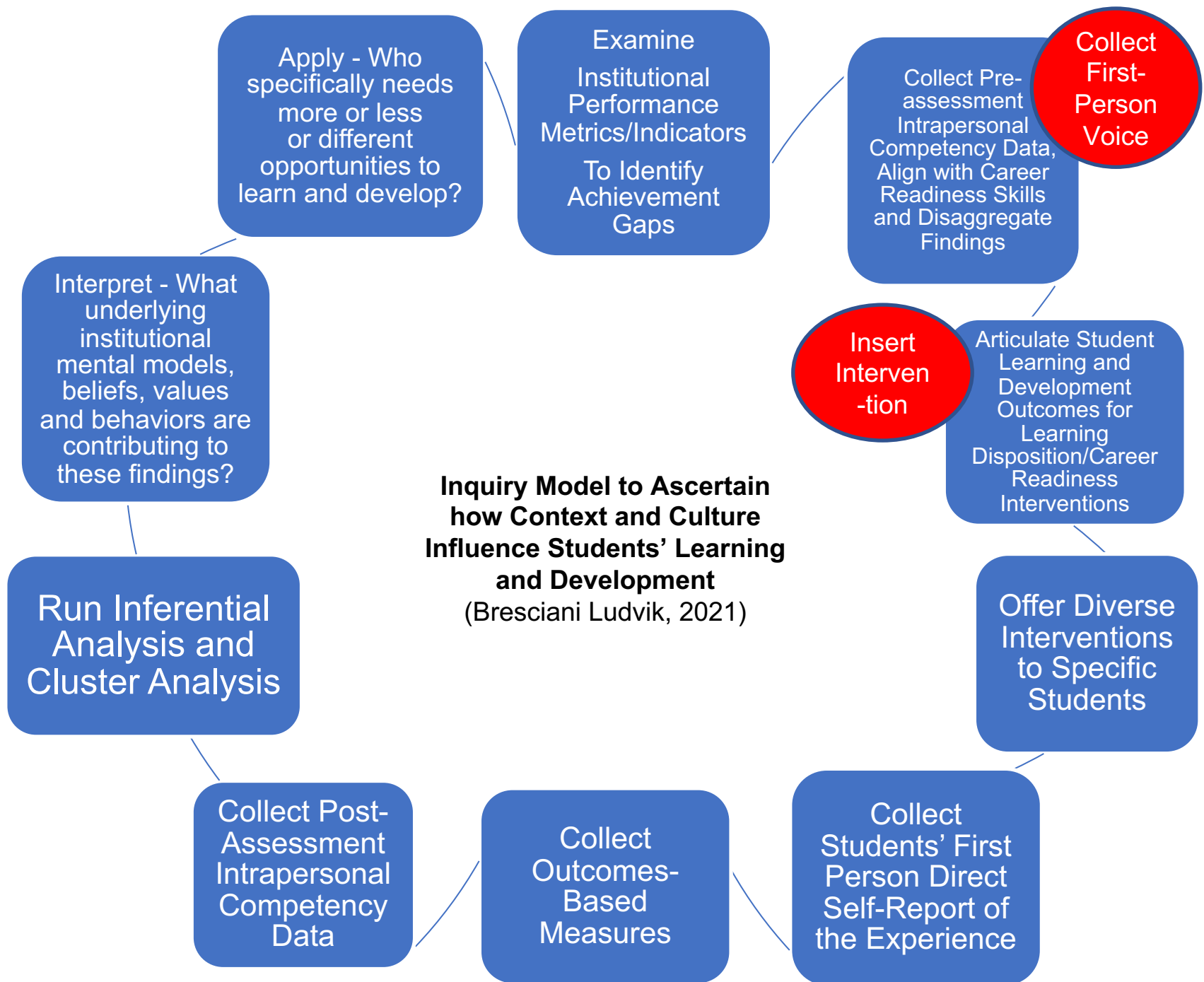
Assessed activity/
assignment where
behavior can be
observed either
within or outside
the designed
“intervention” or
outside of

Reflective Practice - Describe in detail where
emotion regulation was experienced – within or
outside the designed “intervention” and 360
observations

Not Applicable Here

(Bresciani Ludvik, 2021)





Reflection

What in this discussion so far is applicable to your institution?

What changes do you want to make in the ways you approach:

- Writing student learning and development outcomes
- Data collection
- Approach to improving performance indicators



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Institutional Example



EQUITY-DRIVEN, HIGH ACHIEVEMENT

Assessment of Student Learning and Development

Marilee Bresciani Ludvik

With contributions from Marjorie Dorimé-Williams, Lara Evans, Mari Guillermo, Brianna Lynn Kuhn, Valerie Nye, Bill Sayre, Caren Sax, Charlene Teters, Andrea Vonny Lee, Stephen Wall, and Felix Wao

Deep Thank you to:
Stephen Schellenberg,
Randy Timm, Nina
Potter, Sandy Kahn,
Rogelio Becerra
Songolo, Shiming
Zhang, Robyn Saiki,
Rey Monzon (May He
Rest in Peace), Caryl
Montero Adams, Kara
Bauer, Lisa Gates,
Rebecka Harmata,
Jeanne Stronach,
Anna Jost, and many,
many more...

**First Year of the Pilot
Focused on Residence Students
and Commuter Students**
(Fall 2018) (Bresciani Ludvik et al,
under Review)

- Identified Inequities from Disaggregated Data
- Articulated student learning outcomes that focused on intrapersonal competencies
- Re-designed an intervention
- Selected pre- and post-assessments
- Designed first-person voice assessments
- Conducted focus groups



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Results (Bresciani Ludvik et al, under Review)

- Closed Equity Gaps between residence students and commuting students for:
 - Persistence
 - Academic probation
 - But not for GPA



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Second Year of the Pilot (Fall 2019) (Bresciani Ludvik et al, under Review)

- Focused on closing GPA equity gap
- Refined student learning outcomes that focused on intrapersonal competencies
- Re-designed the intervention
- Revised selection of pre- and post-assessments
- Refined first-person voice assessments
- Revised data analysis methodology



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Results (Bresciani Ludvik et al, under Review)

Revealed closing of equity gaps except for

- incoming college choice
- two ethnic identities
- incoming GPA

Revealed perceived stress, purpose in life,
and environmental mastery as where we
needed to focus refinements for

Fall 2020



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Third Year of the Pilot (Fall 2020) (Bresciani Ludvik et al, under Review)

- Focused on closing GPA equity gap
- Refined student learning outcomes that focused on specific intrapersonal competencies
- Re-designed the intervention – had to go fully online
- Revised selection of pre- and post-assessments
- Refined first-person voice assessments
- Further refined data analysis



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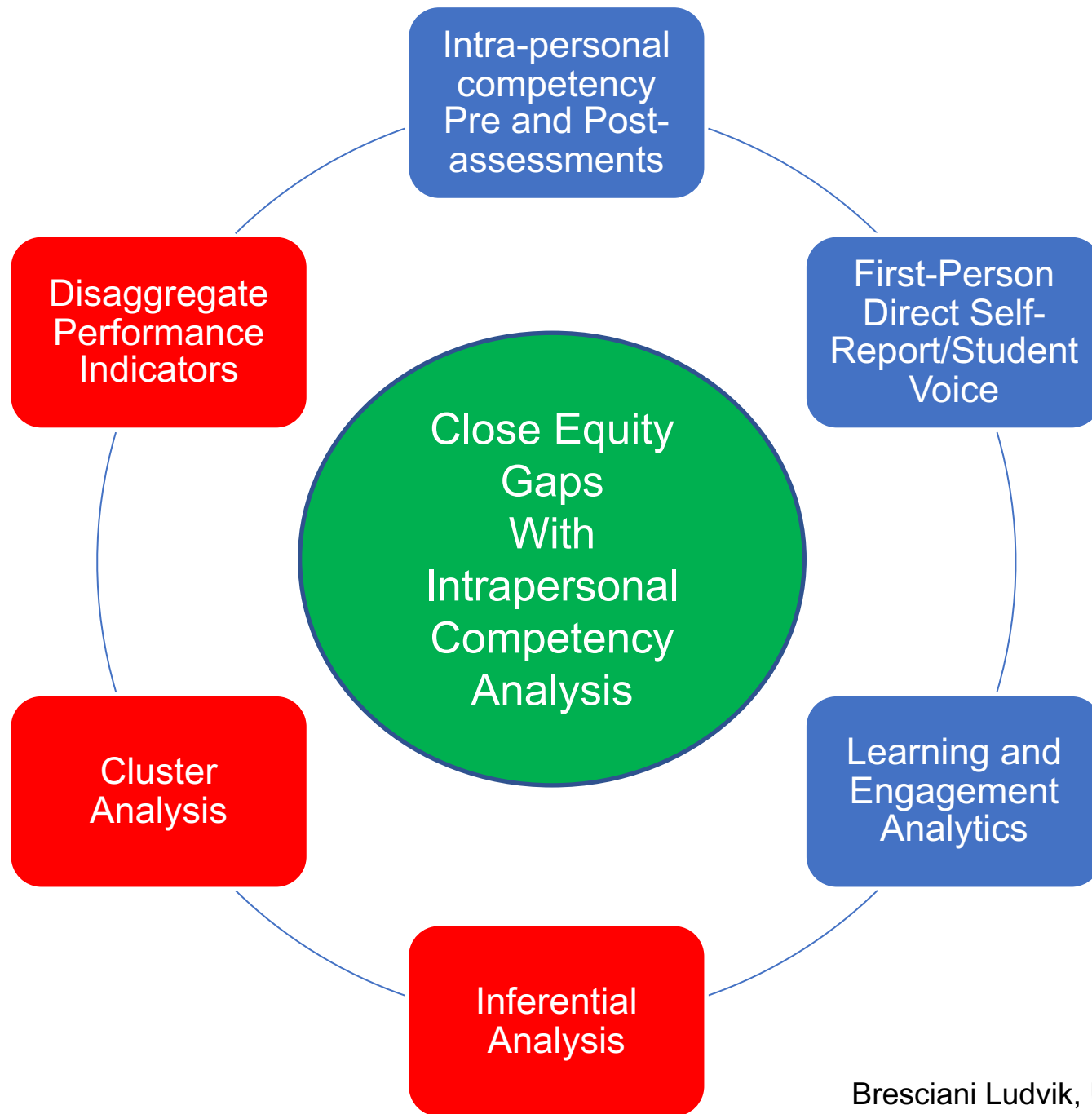
Results (Bresciani Ludvik et al, under Review)

Closed Equity Gaps, except for Asians

The only other differentiation in EOT
GPAs was explained by significant
differences in all of the intrapersonal
competency measures



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Questions and Comments

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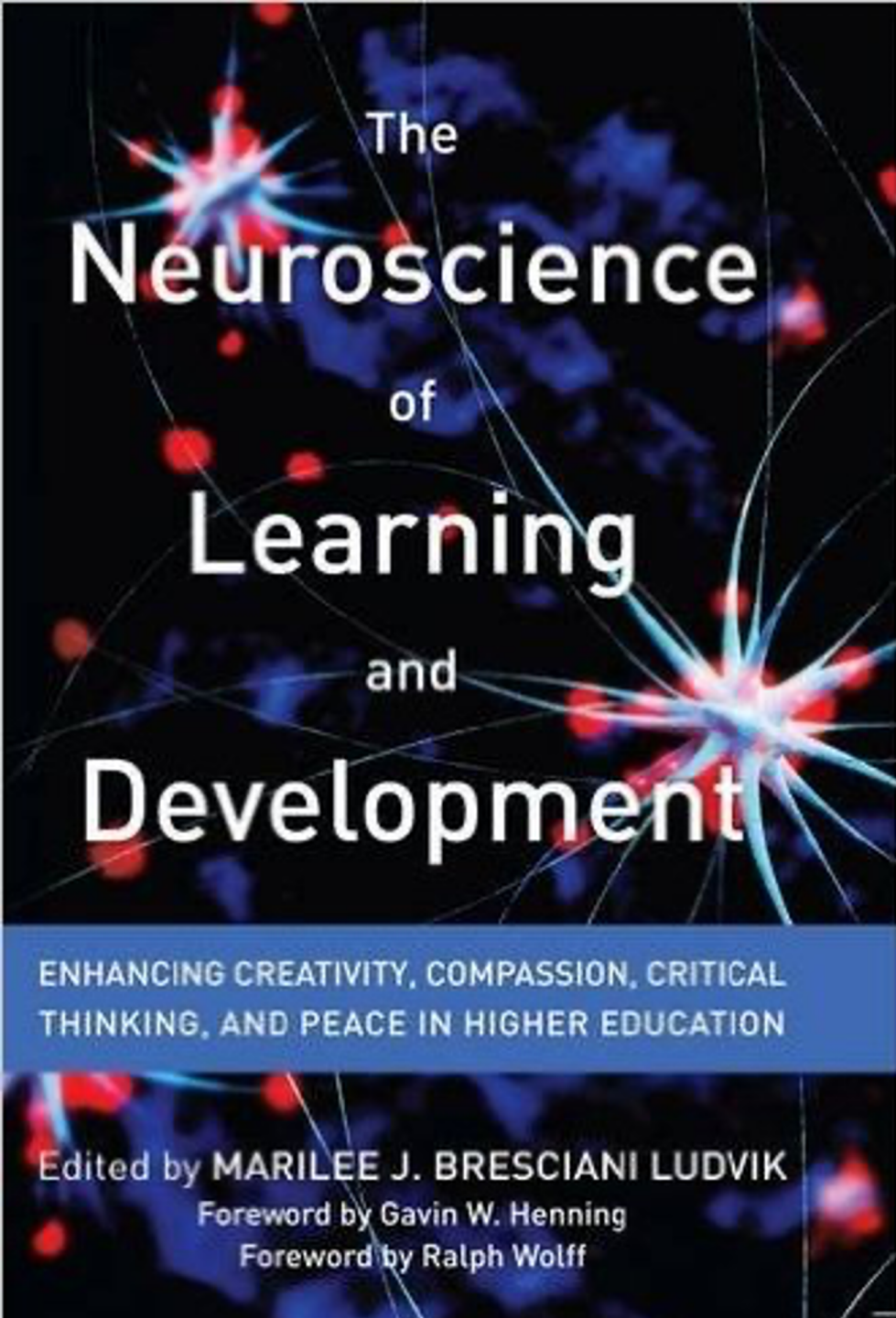
EQUITY-DRIVEN, HIGH ACHIEVEMENT

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The
Neuroscience
of
Learning
and
Development

ENHANCING CREATIVITY, COMPASSION, CRITICAL
THINKING, AND PEACE IN HIGHER EDUCATION

Edited by **MARILEE J. BRESCIANI LUDVIK**
Foreword by Gavin W. Henning
Foreword by Ralph Wolff

OUTCOMES-
CLOSING ACHIEVEMENT GAPS IN- AND OUTSIDE
BASED
THE CLASSROOM WITH ALIGNMENT TO
PROGRAM
PREDICTIVE ANALYTICS AND PERFORMANCE METRICS
REVIEW

MARILEE BRESCIANI LUDVIK
Foreword by Ralph Wolff

Second Edition of *Outcomes-Based Academic and Co-Curricular Program Review*



Looking Below the Surface to Close Achievement Gaps and Improve Career Readiness Skills

Marilee Bresciani Ludvik

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*Looking
Below the
Surface*

to Close Achievement
Gaps and Improve
Career Readiness Skills

SUCCESS

By
Marilee Bresciani Ludvik



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In Short

- Achievement gaps still remain even though many institutions have invested in efforts to close them.
- Some institutions have benefited from the use of data analytics, yet may be unaware of whether they are reinforcing institutional and social behavior that may be increasing or maintaining achievement gaps.
- Focusing efforts on cultivating learning dispositions shown by neuroscientists to be malleable may prove beneficial in closing achievement gaps while ensuring career readiness skills.
- In order to close achievement gaps by focusing on the cultivation of learning dispositions, specific institutional inquiry processes need to be explored or refined.
- Discovering what various groupings of students need to be successful and then planning and delivering those various opportunities while also assessing their effectiveness takes an investment in development professionals, time, and planning materials.

There has been a great deal of emphasis on using data analytics to close achievement gaps in terms of persistence, graduation rates, and time-to-degree among varying and intersecting identity groups. For some institutions, applying just-in-time academic and student support initiatives predicted as necessary by data analytics has been fruitful. For other institutions, this approach may be less welcomed, as it may not account for institutional leaders' desire to understand individual students' needs or to critically examine how well the institution is avoiding a deficit mindset. Indeed, both of these may occur simultaneously.

Using predictive analytics that are in essence based on historical institutional processes without an understanding of how those analytics intersect with students' attainment of desired career readiness skills could potentially increase rather than decrease achievement gaps. With increasing emphasis on preparing career readiness competencies, such as social emotional intelligence, self-awareness, global citizenship, compassion, pro-social behavior, and lifelong learning skills and abilities, this article seeks to offer an additional lens through which to collect data in order to close achievement gaps while also ensuring optimal career readiness preparation.

Given that neurodiversity exists and its presence may not be easily identifiable by social groupings, how might we consider malleable learning dispositions (e.g., desired career readiness skills) that could be culturally constructed in order to honor each students' lived experience and cultural wealth while also ensuring the closing of achievement gaps and optimizing career readiness learning and development skills?

CAREER READINESS AND DEVELOPMENTAL COMPETENCIES

In 2016 and 2017, a synthesis of learning and development research was published by the Institute of Educational Sciences (Zelazo, Blair, & Willoughby, 2016) and the National Academies of Sciences (NAS, 2017), respectively. In 2018, NAS released another synthesis of research, *How People Learn II: The Science and Practice of Learning*. Within these manuscripts and this book, decades of research reported how malleable, desired career readiness skills are and subsequently provided some ways in which they could be cultivated and assessed within in- and out-of-class educational settings.

What was also made clear in the 2018 NAS publication is that culture and context play an important role in understanding how people learn. "Learning does not happen in the same way for all people because cultural influences pervade development from the beginning of life" (p. 22). And while many scholars have been exploring the influence of internal and external persuasions on learning within specific contexts, the research is still in a nascent stage.

While there is no question that sociocultural groupings of students and their intersection are significant in describing achievement gaps across the country, there are many complications to identifying ways to improve learning and development based on sociocultural groupings and associated predictive metrics. As *How People Learn II* (NAS, 2018) pointed out,

Research on genetic differences among population groups has established that there are not scientifically meaningful genetic differences among groups commonly identified as belonging to different races (Smedley and Smedley, 2005). It has long been recognized by social scientists that race is a social construction and that criteria for inclusion in a racial category or definition of particular groups as racial ones have varied over time (see, e.g., Figueroa, 1991; Kimmelmeier and Chavez, 2014; Lopez, 2006). (p. 24)

Adding to the complexity of interpreting the influence of social construction of identities on learning, perspectives on what constitutes culture and how it relates to learning and development have changed over time, further complicating data analytics. For example, while there are genetic differences within gender classification (Penn State, 2005), understanding those differences when it comes to designing and assessing postsecondary education student learning and development also has cultural and contextual challenges, particularly due again to social constructs encompassing gender identity.

That said, there are a number of studies that illustrate how culture plays a role in basic cognitive processes that help learners understand and organize the world, such as attention, memory, and perception of self and others, as well as the cognitive processes that shape learning (Chua, Boland, & Nisbett, 2005; Cole, 1995; Gelfand et al., 2011; Kitayama

& Cohen, 2007; Kronenfeld, Bennardo, de Munck, & Fischer, 2011; Markus & Kitayama, 1991; Medin & Bang, 2014; Nisbett, Peng, Choi, & Norenzayan, 2001; Rogoff & Chavajay, 1995; Segall, Campbell, & Herskovits, 1966). Furthermore, students' environmental experiences and personal choices can change certain portions of their brains necessary for learning and development (Bresciani Ludvik, 2016). And since there is clear evidence that human beings have a wide variety of diverse environmental experiences and personal choices and that not all human beings have the same opportunities to learn and develop, neurodiversity is a fact that educators must contend with simply based on the variety of lived experiences each student has had prior to college.

Given that neurodiversity exists and its presence may not be easily identifiable by social groupings, how might we consider malleable learning dispositions (e.g., desired career readiness skills) that could be culturally constructed in order to honor each students' lived experience and cultural wealth while also ensuring the closing of achievement gaps and optimizing career readiness learning and development skills?

In order to address this, institutional leaders should first examine their easy-to-identify performance indicators by social groupings and intersections of them. Such performance indicators include persistence rates, time-to-degree, cumulative grade point averages within specific majors, and

graduation rates, to name a few. In addition, performance on standardized exams disaggregated by social grouping and their intersections would also include easy-to-identify information.

However, gathering this type of data is not new; this is how we identify achievement gaps. In order to discern the full range of ways to close these achievement gaps, educators need to intentionally shift their focus to cultivating career readiness skills, also known as learning dispositions (NAS, 2017). So, how do we design opportunities for students to cultivate learning dispositions and measure them in a way that informs the closing of achievement gaps?

BELOW THE TIP OF THE ICEBERG

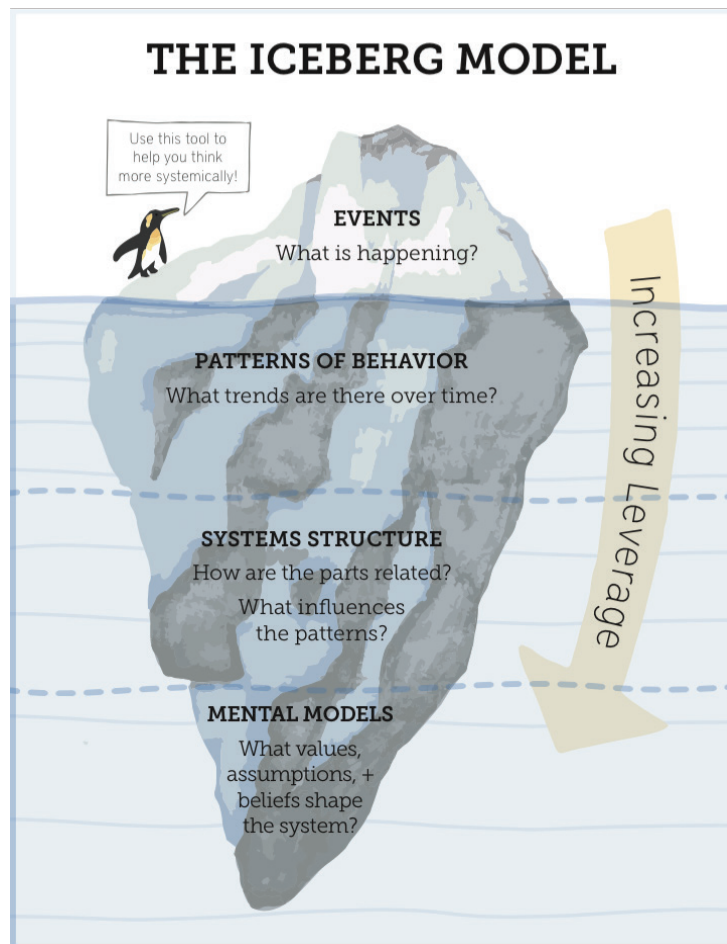
To address this question, consider the iceberg analogy of learning dispositions introduced in Kuh, Gambino, Bresciani Ludvik, and O'Donnell (2018) and adapted here. In Figure 1, several learning dispositions are listed underneath the surface of the water, which researchers have suggested significantly correlate with degree completion or in some cases predict degree completion. The understanding from cognitive, social, and emotional neuroscientists is that these dispositions are indeed malleable, and the assumption is that it is our responsibility to cultivate these toward positive, goal-oriented behaviors, such as persistence, higher grade point averages, and ultimately degree attainment.

FIGURE 1. ICEBERG ANALOGY OF LEARNING DISPOSITIONS



FIGURE 2. OTTO SCHARMER'S ICEBERG MODEL

Awareness of the Iceberg



Furthermore, many of these learning dispositions map directly onto career-readiness skills desired by employers.

Figure 1 illustrates that many of our efforts to identify achievement gaps within our institutions rely in large part on the measurements of indicators listed above the water line. Measurement tools such as tests, standardized exams, time-to-degree, and persistence are easy-to-gather measures. And many current data analytic practices are seeking to understand students' behavior as it correlates with or predicts these indicators, specifically as they are grouped by social identities. This kind of data may be useful to many institutional decision-makers; however, it neglects to account for a great deal of underlying conditions, such as context and culture, that involve learning dispositions that are known to contribute to academic success (NAS, 2017). These learning dispositions also tightly aligned with employer-desired career readiness skills (Bresciani Ludvik, in press).

How do we get at a better understanding of those, particularly given neurodiversity? And how do we assess and respond institutionally to these dispositions?

Figure 1 is similar to Otto Scharmer's (2009) organizational behavior change "Theory U." In Scharmer's organizational behavior change theory, leaders must conduct their own deep dive, "below the tip. . .," to understand why their

performance metrics are the way they are and how they might be improved (p. 305). The deep dive process, illustrated in Figure 2, requires an understanding of patterns of past institutional as well as past students' behavior, which data analytics may be able to shed light upon.

Understanding past patterns of behavior is not simply gathering data to identify a pattern. Rather, according to Scharmer, the intention is to unearth the identification of deep-seated beliefs, values, mental models, and systemic structures to explain what informs the creation of those identified patterns of behavior. Analyzing the systemic structures that contribute to the patterns of behavior involves awareness of the values, assumptions, and mental models that have shaped these behavior patterns. This also includes being able to respond to the discomfort that often arises when organizational leaders realize that the very ways they have been doing business may be systematically contributing to the continuance of achievement gaps.

As you can see in this model, this requires refraining from acting on the easy-to-identify performance indicator data. Instead, leaders would leverage their increasing awareness through specific intentional collaborative reflection to examine ways of being and doing that have caused their organizations' past failures. It is an exploration of the systems

of belief, values, and attitudes that have informed policies, practices, and behavioral expectations that reside underneath the obvious question as to why the performance indicators might look the way they do. In other words, it requires gathering the kind of data that contributes to understanding how institutional practice and policies, intentionally or unintentionally, are or are not closing achievement gaps in cultivating malleable learning dispositions, such as pro-social goals and values, reflective learning, emotion regulation, and conscientiousness.

The reflection in Figure 2 can in turn prompt the deeper dive suggested in Figure 1, which includes a more thorough examination of students' learning dispositions and how institutional behavior is influencing the cultivation of these learning dispositions that correlate, and in some cases predict, timely degree completion. Thus, organizational leaders must begin collecting data on how known malleable learning dispositions are intentionally cultivated within their institutions via outcomes-based methodology. They can then compare those strategies within and across groupings and subgroupings of individuals using pre- and post-assessment measures along with first-person direct self-report experience data. When this type of inquiry is implemented, we can better understand how organizational and individual context and culture influence easy-to-identity "above-the-surface" data. This in turn can inform current institutional improvement strategy, which may explain the inability to close achievement gaps.

Engaging in this kind of inquiry requires an investment of time to collaborate, design, and pilot evidence-based strategies known to cultivate learning dispositions. It seeks to ascertain the influence of culture and context on student learning and development. Therefore, it also requires evidence that can be meaningfully compared across identity groups. Thoughtfully administered pre- and post-assessment

measures across varying learning and development opportunities along with gathering individual students' voices of their learning experience, analyzed by various groupings and subgroupings of students, can signal to leaders what is working for whom, under what conditions, and why.

There are a number of free, valid, and reliable pre- and post-learning disposition/career readiness questionnaires and measures available to assess desired skills (Bresciani Ludvik, 2018). For example, institutional leaders can utilize the Growth Mindset Intelligence Scale (Dweck, 1999) to measure the extent growth mindset is being cultivated. There is also a multidimensional compassion scale (Jazaieri et al., 2014) to identify readiness to act with empathy or engage in pro-social behavior and a Self-Regulation Scale (Schwarzer, Diehl, & Schmitz, 1999) to measure attentional control in the pursuit of positive goals.

These learning disposition measures could be administered as pre-assessments for students; then, these measures could be administered as post-assessments at the end of the term to ascertain whether certain learning opportunities within the semester contributed to significant improvements or declines. If other first-person direct self-report data are collected, institutional leaders would then also know how the learning opportunities were experienced and can begin to explain how institutional culture and context may be influencing intended gains or unintended declines.


Use of these pre- and post-learning disposition scales could also be seen as providing indicators for equity. These are malleable skills but initially we do not know how individual students' experiences may have already cultivated them (or not) prior to students' entry into our institutions, and we thus do not know whether these dispositions need to be cultivated within their higher education experience. What we do know is that they are related to desired career-readiness skills and students' ability to demonstrate what they do

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know and have learned. And we of course want to see these skills developed in an equitable way with equitable results, thus improving the possibility of closing existing achievement gaps.

Probably the most time-consuming portion of this underneath-the-surface inquiry process would be gathering meaningful student voices and collaboratively interpreting it in a way that allows the institution to understand how its behavior influenced student experience. This is imperative to understanding the role of institutional and students' culture and context in student learning and development. Embedded reflective journal prompts, digital narratives, 360-degree evaluations, and thoughtfully constructed reflective student portfolios provide a wealth of data about students' internal processes of meaning-making. While this type of inquiry is time-consuming, without organizational leaders gaining a deeper understanding of what is working well for whom via the use of pre- and post-learning disposition measures (equity evaluation using these measures) and through listening to student voices, we cannot know where to allocate the precious resource of time to whom and when in order to close achievement gaps.

Gathering pre- and post-learning disposition data along with first-person self-direct report of experience could ground dialog for priority decisions around who needs something different than what we have been providing in order to succeed. Furthermore, it lets us know who is already coming in with high levels of specific learning dispositions, which then can highlight who is demonstrating cultural wealth in which dispositions. This systematic analysis is one actionable way to define and pursue evidence-based equity decisions.



Discovering what various groupings of students need to be successful and then planning and delivering those various opportunities while also assessing their effectiveness takes an investment of time, planning material, and the expertise of learning and development professionals.

CHANGING ORGANIZATIONAL BEHAVIOR WITH BELOW-THE-SURFACE INQUIRY

This kind of probing is likely not possible for many institutions under current one size fits all assumptions. In other words, institutions need to be resourced in a manner where they can be responsive to varying needs of varying students. They need to engage in meaningful assessment of those experiences to determine whether what they are providing as equitable opportunities are actually working as expected. Given the oft-expressed skepticism about assessing students' learning and development, this may be an uphill battle for some institutional leaders seeking to collect meaningful evidence.

It also may simply not be possible unless organizational leaders are really willing to think critically about how educational opportunities are designed and delivered, especially how those who contribute to expected learning and development are hired, on-boarded, and provided with professional development to adopt and adapt learning science design and evaluation. It also requires that equitable student learning and development work be resourced fully, recognized, and evaluated in accordance with employment contracts and position descriptions. Discovering what various groupings of students need to be successful and then planning and delivering those various opportunities while also assessing their effectiveness takes an investment of time, planning material, and the expertise of learning and development professionals.

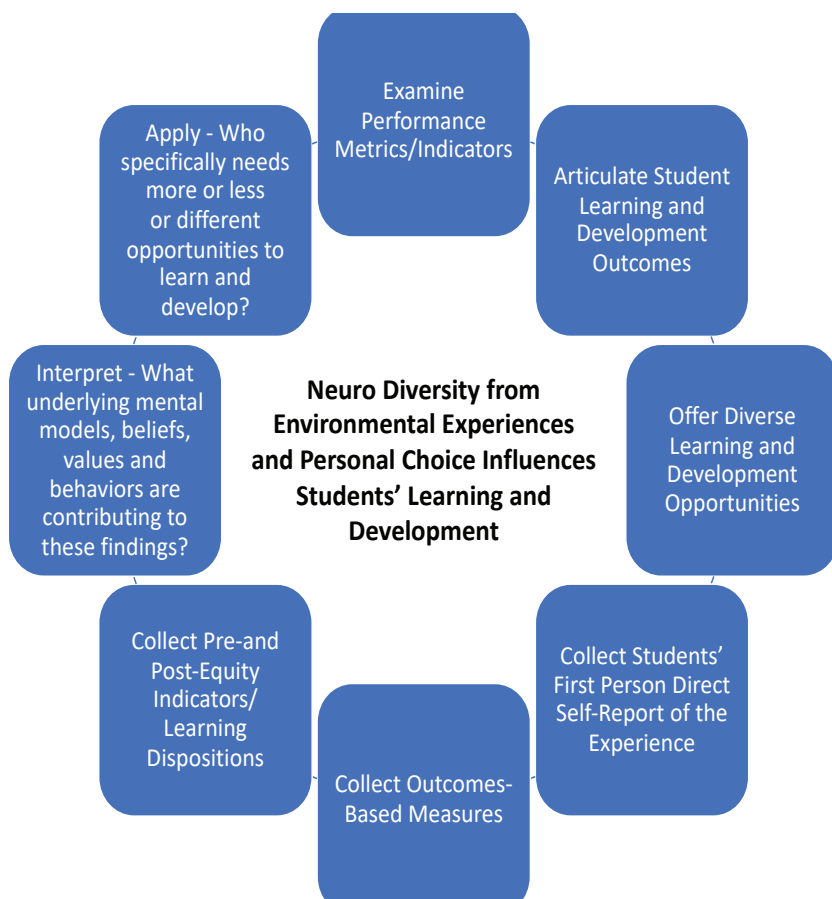
Figure 3 summarizes the context of blending the above- and below-surface inquiry methodologies. In this figure, moving clockwise from the top, the investigative process begins with examining above-the-surface institutional performance indicators to determine where inequities reside. This of course assumes that the institution is already disaggregating its data by identity groups and intersecting of identity groups. Many responsible and well-educated institutional researchers are reluctant to do this because of what they know to be true about small subpopulation sizes and statistical error. Nonetheless, we need the descriptive data story; we need to see the trendlines. So, we must first examine the performance indicator trends descriptively.

Also, we cannot close achievement gaps by ignoring our students' experiences just because there are not enough of them within our institutions to calculate statistical significance. As one of my colleagues puts it, "underrepresented students don't feel marginalized for no reason." At San Diego State University (SDSU), we had plenty of historic descriptive performance indicator data to show how we were under-serving our commuting population, which were predominately Pell eligible, first generation, and LatinX. Discovering this historical trend gave us an opportunity to dive deeper into exploring how we, as an institution, could repair the inequity of underserving this population by offering specific learning and development opportunities to these students.

Once educators examine their institutional performance indicators by identity groups and their intersections, they can then select the career readiness student learning and

FIGURE 3. EDUCATIONAL CONTEXT FOR EQUITY

**Educational Context
for Equity-Driven
High Achievement
Assessment**



development outcomes/learning dispositions about which they care. Within our SDSU Commuter Life pilot project, we had a deep conversation about learning dispositions and wrote them into our semester one-unit credit-bearing course as learning and development outcomes. Informed by learning and development science research, the discussion included almost all stakeholders, from SDSU faculty researchers and students, to alumni and employers, and the professionals in direct service to our students.

The next step was re-designing the course to ensure that these outcomes and the ways in which we would systematically cultivate these skill sets for various identity groups were clearly outlined week by week. We have one set of core practices that cut across various course sections, but then other material is added for other groups of students with other shared identities, which includes science, technology, engineering, and math pre-majors, those self-selecting to cultivate their leadership skills, those who are undecided in their major, and those who want more support with transitioning, to name a few. The placement of the students into the course sections is intentional, as is the assignment of the instructor to the course section.

Following the collection of data that is intended to inform re-design decisions, including first-person direct self-report evidence and pre- and post-learning disposition data using our preselected measures, leaders interpreted the findings,

asking questions that probe at underlying causes. We found significant gains for some students and significant declines in some subscale measures for other students. Without the collection of first-person direct self-report data, we would not have known where to focus our efforts on improving the design of the student and instructor experience. All of these data informed an intentional re-design of the course for the following year. As can be seen, the process concludes with refining provided opportunities for specific populations, keeping in mind that not every student needs every learning and development opportunity to succeed.

This inquiry process, represented in Figure 3, requires institutions to move from only making decisions based on above-the-surface data collection or predictive analytics, to investing resources in a more thorough process. Following the abbreviated inquiry model in Figure 3 provides institutional leaders with evidence to inform how the performance indicators can be moved and how achievement gaps can be closed. For instance, from our SDSU pilot data, we examined how shifts in pre- and post-learning disposition data significantly correlated with shifts in performance indicators such as desired decreases in academic probation, increases in term-to-term persistence data, and increases in cumulative grade point averages as well as number of hours toward specific degree completion. This kind of correlation analysis, coupled with first-person direct self-report data, gave us

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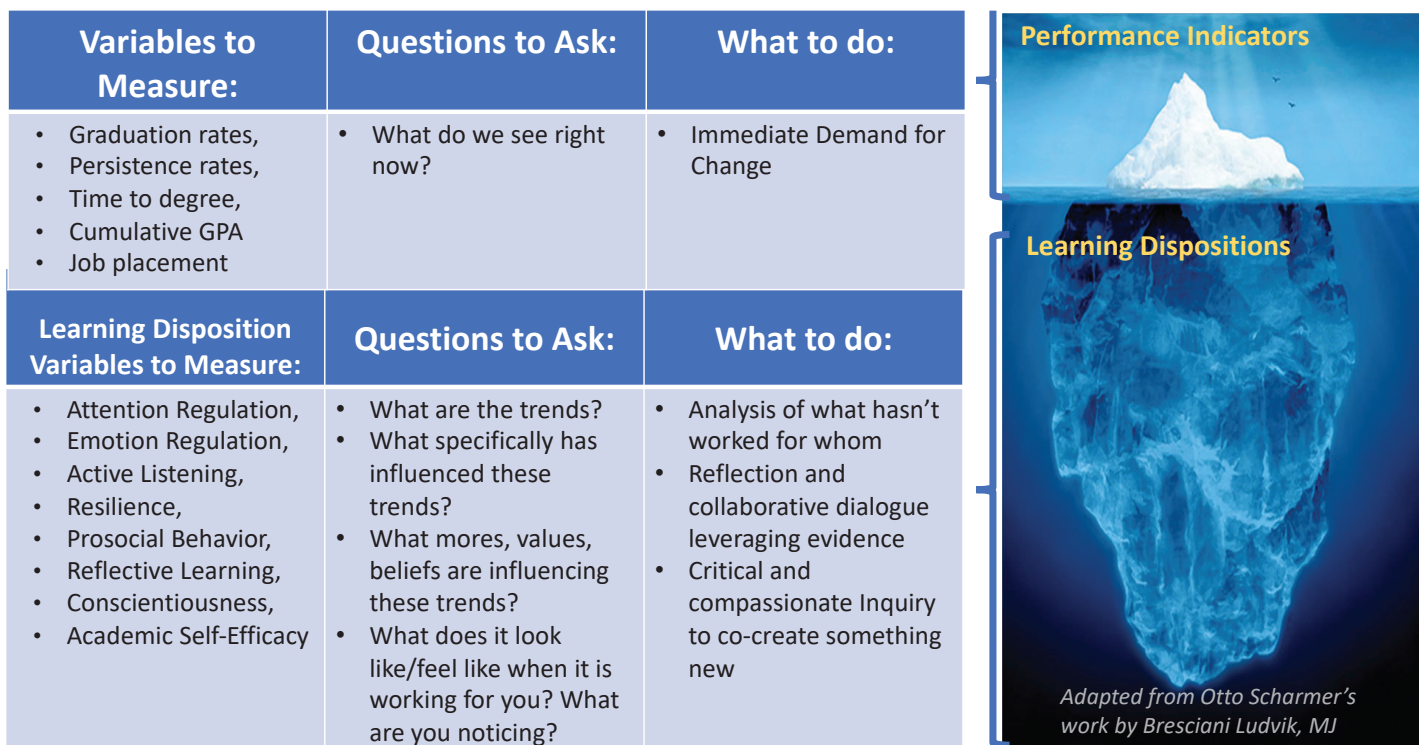
deeper insight into what to change for whom and when. It also informed some additional data collection practices that we are implementing this fall as we expand our pilot project and include more variations in the design for additional identity groupings.

In responding to the beneath-the-surface process in Figure 3, institutional leaders will explore an expanded set of variables, questions, and possible courses of action, as illustrated in Figure 4. Figure 4 exemplifies the movement from above-the-surface decision making, which demands changes based on easy-to-identify institutional performance indicators to decisions informed by evidence collected on learning disposition variables.


If institutional leaders seek to ensure they are not perpetuating achievement gaps or inadvertently increasing them, and they also seek to assure the cultivation of malleable learning dispositions that ensure career readiness, then they need to respond to the following questions:

1. What malleable learning dispositions does our institution value?
2. How well do our valued learning dispositions map to our employers' desired career readiness skills?
3. Where are we providing opportunities for these skills to be cultivated, how, and to whom specifically?
4. How are we gathering first-person direct self-report evidence of these learning experiences from the students?

FIGURE 4. ORGANIZATIONAL CHANGE INQUIRY



5. How are we collecting evidence that the desired learning disposition/career readiness skills were acquired?
6. How are we comparing this evidence (pre- and post-scores) gathered across social grouping and subgroupings to identify how well the cultivation of these skills is allowing certain groupings and subgroupings of students opportunities to achieve (as is often measured by institutional performance indicators)?
7. How is what we are learning from this evidence providing us with opportunities to re-think our mental models, beliefs, values, and behaviors around previously conceived notions for how all students succeed?
8. How well are we using these data and dialog to refine specific experiences so that all students have an opportunity to achieve at high levels?

Neurodiversity exists; while there are some very real genetic and epigenetic differences in some students influencing their ability to learn and develop in expected ways, it remains a fact that not every human being is experiencing the same thing externally or internally in any given moment. Internal capacity and choices and perceptions, as well as external resources and experiences, are shaping each person's ability to learn and develop even when the same opportunity for learning and development is provided. Engaging in the deep dive below the surface to address the above questions may take more time, and will require compassionate dialog and active listening, but it also may dramatically improve career readiness skills that employers are seeking in our graduates while also closing achievement gaps. 

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Appendix C

High Performance for All Students

Learning and Development Outcome Measures and Performance Indicators

This Appendix is extracted from Bresciani Ludvik, M. J. (2018). *Outcomes-Based Program Review: Closing Achievement Gaps in and Outside the Classroom With Alignment to Predictive Analytics and Performance Metrics*. Sterling, VA: Stylus.

Adapted from a National Institute for Learning Outcomes Assessment (NILOA) Occasional Paper (Kuh, Gambino, Bresciani Ludvik, & O'Donnell, 2018)

This is an example of how learning outcomes can be used as comparable performance indicators and/or used in predictive analytics when used consistently, ethically, and with integrity. There are many other measures that could be used. This table simply serves to provide some examples for your organization to discuss, consider, and then responsibly choose and implement.

Note that these learning outcomes/performance indicators become more meaningful when the data are aggregated by groupings of student self-identifiers (e.g., race, ethnicity, gender, sexual orientation, religious affiliation, disability, veteran, first-generation, foster youth, commuter, Pell-eligible, number of hours/week working off-campus, etc.). It is also useful to aggregate data by the intersections of these identifiers (e.g., comparing female Muslim first-generation commuters with African American and Black male commuters). Knowing which intersections to aggregate the data by is a topic for another conversation and may require a more sophisticated random forest tree analysis on your campus in order to determine which students need your attention most.

| Learning Outcome/Performance Indicator | Data Collection Instrument | Purpose |
|---|--|--|
| Term-to-term persistence rates | IPEDS Definition extracted from student transactional system | To determine whether there are gaps among groups of students or types of institutional experiences among students who are persisting from term-to-term to be able to refine OBPR implementation and organizational decision-making |
| Graduation rates | IPEDS Definition; Data extracted from student transactional system | To determine whether there are gaps among groups of students or types |

| | | |
|--------------------------------------|---|---|
| | | of institutional experiences among students who are graduating to be able to refine OBPR implementation and organizational decision-making |
| Cumulative Grade Point Average (GPA) | IPEDS Definition; Data extracted from student transactional system | To determine whether there are gaps among groups of students or types of institutional experiences among students who are earning below “high achievement” expectations to be able to refine OBPR implementation and organizational decision-making |
| Learning Outcome Rubrics Scores | AAC&U LEAP rubric scores; data extracted from student transactional system | To determine whether there are gaps among groups of students or types of institutional experiences among students who are earning below “high achievement” expectations of specific learning outcomes to refine OBPR implementation and organizational decision-making |
| Time to Degree | IPEDS Definition; Data extracted from student transactional system | To determine whether there are gaps among groups of students or types of institutional experiences among students who are not achieving expected time-to-degree expectations for specific degrees in order to refine OBPR implementation and organizational decision-making |
| Pass rates of Gate-Keeping Courses | Campus definition of Gate-Keeping Courses; Data extracted from student transactional system | To determine whether there are gaps among groups of students or types of institutional experiences |

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|-----------------------------------|---|---|
| | | among students who are not achieving expected time-to-degree expectations for specific degrees in order to refine OBPR implementation and organizational decision-making |
| Job Placement Rates | Data collected at graduation or in a 6-month alumni follow-up survey | To determine whether there are gaps among groups of students or types of institutional experiences among students who are not securing meaningful or gainful employment for specific degree areas in order to refine OBPR implementation and organizational decision-making |
| Progress Toward Degree | Campus definition of Progress toward Degree; Data extracted from student transactional system | To determine whether there are gaps among groups of students or types of institutional experiences among students who are not achieving expected progress-toward-degree expectations for specific degrees in order to refine OBPR implementation and organizational decision-making |
| Discipline Competency Exam Scores | Campus definition; Data extracted from student transactional system | To determine whether there are gaps among groups of students or types of institutional experiences among students who are earning below “high achievement” expectations of specific discipline competencies in order to refine OBPR implementation and organizational decision-making |

| | | |
|--|--|--|
| <p>Licensure and Certification Exam Pass rates</p> | <p>Data extracted from student transactional system</p> | <p>To determine whether there are gaps among groups of students or types of institutional experiences among students who are earning below “high achievement” expectations of specific discipline competencies in order to refine OBPR implementation and organizational decision-making</p> |
| <p>Number of Major Changes and Hours Accumulated when Change was Made</p> | <p>Campus definition of student activities; Data extracted from student transactional system</p> | <p>To determine whether there are gaps among groups of students or types of institutional experiences among students who are not achieving expected progress-toward-degree expectations for specific degrees in order to refine OBPR implementation and organizational decision-making</p> |
| <p>Participation Rates in Campus Approved Student Activities and Organizations</p> | <p>Campus definition of student activities; Data extracted from student transactional system</p> | <p>To determine whether there are gaps among groups of students or types of institutional experiences among students who are engaging in college/university community life in order to refine OBPR implementation and organizational decision-making</p> |
| <p>Participation Rates in High Impact Practices (HIPs)</p> | <p>AAC&U definition of HIPs; Data extracted from student transactional system</p> | <p>To determine whether there are gaps among groups of students who are engaging in HIPs or types of HIPs in order to refine OBPR implementation and organizational decision-making</p> |

| | | |
|----------------------------------|--|---|
| Academic Self-Efficacy | Academic Self-Efficacy Scale (Chemers, Hu, & Garcia, 2001) | Measures confidence in abilities. |
| Attention and Emotion Regulation | Five Facet Mindfulness Questionnaire (FFMQ) (Baer et al., 2008) | Measures five facets of mindfulness: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. |
| Compassion/Pro-Social Behavior | Multidimensional Compassion Scale (MCS) (Jazaieri et al., 2014) | Measures four components: awareness of suffering (cognitive component); sympathetic concern (empathy) triggered by suffering (affective component); desire to relieve suffering (intentional component); and readiness to help relieve suffering (action component). |
| Conscientiousness | Chernyshenko Conscientiousness Scales (CCS) (Green et al., 2015) | Measures industriousness, order, self-control, traditionalism, virtue, and responsibility. |
| Engagement | National Survey of Student Engagement (NSSE) | Measures engagement of higher-order learning, reflective and integrative learning, learning strategies, quantitative reasoning, collaborative learning, discussions with diverse others, student-faculty interactions, effective teaching practices, quality of interactions, and supportive environment. |
| Grit | Grit Scale (Duckworth & Quinn, 2009) | Measures perseverance in achieving goals and consistency of interests over time. |
| Growth Mindset | Growth Mindset Intelligence Scale (Dweck, 1999) | Measures self-perceptions of abilities. |

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|------------------------------------|---|--|
| Mental Well-Being | Warwick-Edinburgh Mental Well-being Scale (WEMWBS) (2006). | Measures overall mental well-being and the effects of participation in programs and projects on mental well-being. |
| Personal and Social Responsibility | Personal and Social Responsibility Inventory (Reason, 2013) | Measures five dimensions: striving for excellence; cultivating academic integrity; contributing to larger community; taking seriously the perspectives of others; and ethical and moral reasoning. |
| Psychological Well-Being | Psychological Well-Being (Ryff & Keyes, 1995) | Measures autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance |
| Resilience | Brief Resilience Scale (Smith et al., 2008) | Measures ability to “bounce back” following an adverse experience. |
| Self-Control | Self-Control Scale (Tsukayama, Duckworth, & Kim, 2013) | Measures ability to regulate interpersonal and social impulsivity. |
| Self-Regulation | Self-Regulation Scale (Schwarzer, Diehl, & Schmitz, 1999) | Measures attentional control in goal pursuit. |
| Sense of Belonging | Sense of Belonging Scale (Hoffman et al., 2002) | Measures perceived peer support, faculty support/comfort, classroom comfort, isolation, and empathetic faculty understanding. |

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Outcomes-Based Assessment Plan and Report for Program Review Purposes Checklist

This is taken from Bresciani Ludvik, M. J. (2018). *Outcomes-based program review: Closing achievement gaps in and outside the classroom with alignment to predictive analytics and performance metrics* (2nd ed.). Sterling, VA: Stylus.

This checklist is designed to accompany the *Assessment Plan and Report for Program Review Purposes within the book*. All questions should be answered as either (a) *yes* – present in the proposed plan or (b) *no* – not present in the proposed plan. If no, an explanation needs to be provided for why that component is missing. The intention of this checklist is to simply guide institutions in selecting which components to include in their OBPR process.

Furthermore, if applicable and if it is helpful to the reviewer and the one being reviewed, the reviewer can rate the quality of the component as *5 = excellent, 4 = very good, 3 = good, 2 = average, 1 = below average, 0 = not present*.

Overall/General

1. Is the plan and/or report written to conform to APA formatting guidelines (6th edition)?
2. Is the plan and/or report void of spelling errors?
3. Does the plan and/or report use proper grammar?
4. Was the plan and/or report submitted by the posted due date?
5. If the plan and/or report includes appendices, are they properly and accurately referred to within the plan?
6. Does the plan and/or report include a properly formatted APA list of references, if applicable?

Program Name

1. Does the plan and/or report provide the program/project/service area name?
2. Does the program name provide an indication of the scope of the OBPR project?
3. Does the plan and/or report list the primary contact information of the person who can answer questions about the plan and/or report?

Program Mission or Purpose

1. Does the plan and/or report provide the program/project/service area mission or purpose statement?
2. Does the plan and/or report provide an explanation of how this program mission or purpose aligns with the mission of the department, college, division, or university wherein it is organized?
3. Does the plan and/or report provide an explanation how the program aligns with institutional values and priorities?

High Achievement for All Students (HAAS) Statement

1. Does the plan and/or report indicate how this program has been designed to advance HAAS?
2. Do the plan and/or report list performance indicators that will demonstrate the closing of achievement gaps and the demonstration of high achievement expectations for all students?
3. Are there related HAAS goals for each performance indicator?
4. Are their related outcomes for each HAAS goal and corresponding performance indicator?
5. Is there indication of how the identity characteristics (e.g., race, ethnicity, gender, sexual orientation, disability) and intersection of identity characteristics of students, faculty, and staff will be aggregated for each outcome, as appropriate?

Descriptive Overview

1. Does the plan and/or report describe the program that is being assessed in a general manner that would be understood by people outside of the program?
2. Does the plan and/or report introduce any learning, development, and engagement theories that undergird the program goals and outcomes?
3. Does the plan and/or report describe a brief history of the program?
4. Does the plan and/or report introduce other relevant literature, such as professional standards or accreditation requirements indicating why the program exists and what it is intended to accomplish?
5. Does the plan and/or report include a vision statement, market research, and/or community needs' assessment about why the program came into being or explain the importance of the program's existence?
6. Does the plan and/or report indicate how the program mission, purpose, goals, and outcomes were derived?
7. Where literature is not obtainable or accessible, does the plan and/or report list assumptions about the program?

Program Goals

1. Does the plan and/or report provide goals that are broad, general statements of what the program expects participants to be able to do or to know?
2. Does the plan and/or report align each program goal to department, college, division, and university goals or strategic initiatives?
3. Does the plan and/or report align each program goal to each HAAS goal and/or performance indicator?
4. Does the plan and/or report describe the alignment of program goals to the program mission?
5. Does the plan and/or report assist in your understanding of how meeting program goals may mean meeting higher-level organization goals and strategic planning initiatives, such as HAAS?

Outcomes

1. Does the plan and/or report include outcomes that are detailed and specific statements derived from the goals?

2. Do the outcomes describe what programs expect the end result of their efforts to be?
3. Can you identify participant learning and development outcomes?
4. Can you identify other program outcomes that address student services, program processes, enrollment management, research, development, alumni outreach, and other practices (if applicable)?
5. Is each outcome aligned with a program goal?
6. Is each outcome aligned with a relevant HAAS goal and/or performance indicator?</NL>

<A>Planning for Delivery of Outcomes/Outcomes-Alignment Matrix<NL>

1. Is there an easy-to-read outcome delivery map or curriculum alignment matrix included?
2. Is it clear that there is an opportunity provided to participants of the program that enables each participant to achieve each listed outcome?</NL>

<A>Evaluation Methods and Tools<NL>

1. Does the plan and/or report describe a detailed inquiry methodology?
2. Does the plan and/or report describe the assessment tools and methods (e.g., observation with a criteria checklist, survey with specific questions identified, essay with a rubric, role-playing with a criteria checklist) that will be used to evaluate EACH outcome?
3. Does the plan and/or report identify the sample or population that will be evaluated for each outcome? (This can go here or in the *Implementation of Assessment Process* section.)
4. Does the plan and/or report provide a description of how the sample size was selected? (This can go here or in the *Implementation of Assessment Process* section.)
5. Does the plan describe the sample by race, ethnicity, gender identity, socio-economic status, and other relevant identifiers? (This can go here or in the *Implementation of Assessment Process* section.)
6. Does the plan and/or report identify one or more evaluation methods or tools for each outcome?
7. Does the plan and/or report include the criteria that will be used with the tool for each outcome to determine whether the outcome has been met?
8. Does the plan and/or report provide a rationale for the measurements used to assess each outcome (e.g., why certain outcomes were measured quantitatively, while others were measured qualitatively, or using mixed-methods)?
9. Does the plan and/or report provide definitions of variables?
10. Does the plan and/or report provide a description of how the analyses will be conducted or were conducted? (This can go here or in the *Implementation of Assessment Process* section.)
11. Does the plan and/or report provide any other relevant discussion of methodological questions important to the context of the program being assessed, such as questions raised by previous or current accreditation, state, or federal standards?

12. Does the plan and/or report indicate (if applicable) the limitations of the evaluation methods or tools? (This can go here or in the *Limitations and Assumptions* section.)
13. Does the plan and/or report include the actual assessment and evaluation tools in the appendices?

Level of Achievement Expected

1. Does the plan and/or report indicate a particular expected level of achievement for each outcome?
2. Does the plan and/or report indicate the level of expected achievement for all program participants?
3. Does the plan and/or report indicate the expected level of achievement for each performance indicator?
4. Does the plan and/or report indicate who determined that expected level of achievement (either for the outcome or for the performance indicator)?
5. Does the plan and/or report indicate how the expected level of achievement was determined (either for the outcome or for the performance indicator)?

Limitations and Assumptions

1. Does the plan and/or report include a list of limitations?
2. Does the plan and/or report include a list of assumptions?
3. Does the plan and/or report detail how race, gender, ethnicity, and other identity characteristics may have been categorized together along with the assumptions and limitations that were made as a result?

Implementation of Assessment Process

1. Does this section describe the plan for the implementation of the assessment process? (In the case of the report, does it indicate what was completed?)
2. Does the implementation plan identify the individuals responsible for conducting each step of the evaluation process? (In the case of the report, does it indicate what was completed?)
3. Does it provide a timeline for implementation and include the points in time when each outcome will be evaluated? (In the case of the report, does it indicate what was completed?)
4. Does the plan identify the individuals who will be participating in interpreting the data and making recommendations? (In the case of the report, does it indicate who participated and how?)
5. Does the plan and/or report provide a timeline for implementing the decisions and recommendations?
6. Does the plan describe how the assessment results will be communicated to stakeholders, including who will see the results, when will they see the results, and who will be involved in making decisions about the program based upon the assessment results? (In the case of the report, does it indicate what was completed?)
7. Does the plan describe who will be connecting the outcomes to the program goals and other performance indicators, including HAAS indicators and goals? (In the case of the report, does it indicate what was completed?)

8. Does the plan include a list of resources (e.g., time, professional development, specific assessment or benchmarking tools that must be purchased, consultants, data entry professionals or analysts that must be hired, etc.) and corresponding budget, if applicable, that need to be provided in order to assure a quality OBPR process? (In the case of the report, does it indicate what resources were used and how much was spent?)
9. Does the plan describe how results will be communicated to all of the stakeholders? (In the case of the report, does it indicate how this was completed?)

Results

1. Are the results summarized for EACH outcome that was evaluated?
2. Are the results summarized for EACH HAAS goal and other performance indicators or benchmarks that were used in the evaluation?
3. In the summary of the results, is there a brief narrative that indicates whether the results met the expected level, particularly relating to the various ways that participant results (e.g., faculty, staff, and students) were disaggregated by characteristic identity and intersection of identities?
4. Are detailed results, if applicable, contained as tables, charts, or narrative in the appendix?
5. Is there a narrative about the process to verify/validate/authenticate the results for each outcome that was evaluated?
6. Is there a brief narrative that illustrates whether results were discussed with students, alumni, other program faculty and/or administrators, or external reviewers?
7. Are the results generated from this OBPR linked to any other program, college, or institutional performance indicators?
 - And if so, is there a brief narrative describing the linkage?
 - Is there a narrative for the rationale of linking the results to those performance indicators?
8. Have the limitations and assumptions and the data analysis section of the plan been updated based on the process and the data analysis that was conducted?
9. Has everything else in the plan that may have changed during actual assessment, such as tool dissemination, data collection, and analysis, been updated?"

Reflection, Interpretation, Decisions, and Recommendations

1. Are the decisions and recommendations summarized for EACH outcome?
2. Are the decisions and recommendations summarized for EACH HAAS and other performance indicators or benchmarks that were used in the evaluation?
3. Is the process described for how to determine whether the results were satisfactory for ALL participants? In other words, be sure to describe the process used to inform how the level of acceptable performance was determined and why it was determined as such, particularly for disaggregated results.
4. If applicable, is the benchmark data that informed your decision of whether your results were “good enough” included?
5. Is there a reminder of what the expectations are for a certain level of learning as well as why that level was expected?

6. Are the decisions and recommendations that may contribute to the improvement of higher-level goals and strategic initiatives, including HAAS, identified as such?
7. Are the people identified who participated in the reflection, interpretation, and discussion of the evidence that led to the recommendations and decisions?
8. Is there a summary of suggestions that arose for improving the assessment process, tools, criteria, outcomes, and goals?
9. Is there an indication of when each outcome will be evaluated again in the future (if the outcome is to be retained)?
10. Are those responsible for implementing the recommended changes identified?
11. If applicable, are the additional resources required to implement the required changes listed? If so, is there a description of what those are or might be?
12. Have you indicated whether a member of the organization at a higher organizational level needs to improve the new resources requested? If so, have you indicated who that is and how the results and recommendations will be communicated to that individual?
13. If making a recommendation for a change that resides outside of the program leadership's locus of control, have the individuals and the process for forwarding the recommendation and the action required/requested been indicated?
14. Are there recommendations for use of or change of use of institutional performance indicators?
15. Are there recommendations for use of or change of use of institutional predictive analytics?

Action Plan, Memorandum of Understanding, and/or Documentation of Higher-Level Organizational Feedback

1. Is there an action plan to indicate how results will be used?
2. Are the specific tasks that need to be completed included?
3. Is the primary responsible party for task completion listed?
4. Does the action plan include the time frame for implementing the decisions, and who will be responsible for that implementation?
5. Does the action plan refer to an assessment plan or performance indicators for how the action plan will be determined successful? Or will the assessment of this action plan be included in the next OBPR cycle?
6. How have the decisions that inform this action plan been disseminated throughout the organization?
7. Have the appropriate people approved the action plan?
8. Have you included the plan and/or budget for the new resources, policy changes, or other information that is required to improve the program learning outcomes that were assessed?
9. Have you noted any changes that will be made to the program goals, outcomes, evaluative criteria, planning processes, and budgeting processes as a result of higher-level organizational feedback, if feedback was already obtained?

External Review Report (If Applicable)

1. Have the members of the external review committee been named and their roles and responsibilities listed?

2. Is there a narrative included describing how they were selected and approved by the appropriate authorizing agent?
3. Are the charge that was given to the external review committee as well as the timeframe for completion indicated in the report?
4. Are the guiding questions that the external review members were given clearly articulated in the report?
5. Is the comparative analysis or benchmarking report included, if applicable or required?
6. Is there evidence that the recommendations made by the external reviewers were considered by program leaders and high-level organizational leaders prior to the action plan being determined?

Program Viability (If Applicable)

1. Has a decision been rendered to continue with action plan improvements or phase out the program been made?
2. Has capacity data (e.g., inputs, market research, community needs data, etc.) been considered prior to the program viability decision being made?
3. Has evidence of human flourishing been considered prior to the program viability decision being made?
4. Is there evidence that the OBPR process, which may or may not include an external reviewer report, has been used to make this decision?

Be Sure to Include Any Additional Appendices Generated From Completing Your OBPR Report

1. Have you included any detailed level results, assessment instruments, rubrics, and/or meetings minutes that identify where accepted level of learning and development were identified and how?
2. Have you included any program syllabi, faculty CVs, enrollment data, admission yield data, outreach data, budget data, market analysis, needs assessment, or any other pertinent data used in interpreting OBPR results?
3. Have you included information that illustrates how the summary of the learning from engaging in the OBPR process has been made public/transparent?
4. Have you included anything else that may be pertinent to understanding the context of this plan and/or report?