

education policy analysis archives

A peer-reviewed, independent,
open access, multilingual journal



Arizona State University

Volume 26 Number 65

May 21, 2018

ISSN 1068-2341

Sustaining Organizational Change Towards Racial Equity Through Cycles of Inquiry¹

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Citation: Dowd, A., & Liera, R. (2018). Sustaining change towards racial equity through cycles of inquiry. *Education Policy Analysis Archives*, 26(65). <http://dx.doi.org/10.14507/epaa.26.3274>

Abstract: Many national, state, and institutional policies and initiatives advocate for change in higher education through structured forms of data use. The case study of “Old Main University” presented in this article shows how local reformers ($n=9$) drew on data and data use tools provided by a long-term action research project implemented at the university to advance racial equity goals at their university. The case narrative utilizes practice theory, cultural historical activity theory (CHAT), and narrative inquiry to illustrate how administrative leaders and faculty at Old Main University coordinated their efforts in a sustained manner through two cycles of practitioner inquiry that was responsive to policy goals. The findings show that data use is productive to promote racial equity when data and data use protocols are used iteratively and in interaction among practitioners who use them to identify inequities rooted in their own practices. The findings support the conclusion that,

¹ This work was funded through the Study of Data Use and Organizational Learning under Conditions of Accountability by the Spencer Foundation.

to sustain change efforts as long-term (mesogenetic) projects, policy makers and local reformers should plan to iteratively redesign data tools, practices, and policies to institute changes in everyday (microgenetic) work practices. Such purposeful redesign holds potential to re-structure professional interactions, sustain motivation and organizational learning, and acculturate practitioners to equity as a standard of practice.

Keywords: race; equity; educational policy; data; inquiry; postsecondary education; organizational change

Mantener el cambio hacia la equidad racial a través de ciclos de investigación

Resumen: Muchas políticas e iniciativas nacionales, estatales e institucionales abogan por el cambio en la educación superior a través de formas estructuradas de uso de datos. El estudio de caso de “Old Main University” presentado en este artículo muestra cómo los reformadores locales ($n = 9$) recurrieron a datos y herramientas de uso de datos proporcionadas por un proyecto de investigación de acción a largo plazo implementado en la universidad para avanzar objetivos de equidad racial en su universidad. La narrativa de casos utiliza la teoría de la práctica, la teoría de la actividad histórica cultural (CHAT) y la investigación narrativa para ilustrar cómo los líderes administrativos y la facultad de Old Main University coordinaron sus esfuerzos de manera sostenida a través de dos ciclos de investigación profesional que respondían a los objetivos de las políticas. Los resultados muestran que el uso de datos es productivo para promover la equidad racial cuando los datos y los protocolos de uso de datos se utilizan de forma iterativa y en la interacción entre los profesionales que los utilizan para identificar las inequidades arraigadas en sus propias prácticas. Los hallazgos respaldan la conclusión de que, para sostener los esfuerzos de cambio como proyectos a largo plazo (mesogenéticos), los responsables de las políticas y los reformadores locales deberían rediseñar iterativamente herramientas, prácticas y políticas de datos para instituir cambios en las prácticas laborales cotidianas (microgenéticas). Tal rediseño intencionado tiene potencial para reestructurar las interacciones profesionales, mantener la motivación y el aprendizaje organizacional, y aculturar a los profesionales a la equidad como un estándar de práctica.

Palabras clave: raza; equidad; política educativa; datos; investigación; educación post secundaria; cambio organizacional

Manter a mudança para a equidade racial através de ciclos de pesquisa

Resumo: Muitas políticas e iniciativas nacionais, estaduais e institucionais defendem a mudança no ensino superior por meio de formas estruturadas de uso de dados. O estudo de caso da “Old Main University” apresentado neste artigo mostra como os reformadores locais ($n = 9$) recorreram aos dados e ferramentas de uso de dados fornecidos por um projeto de pesquisa de ação de longo prazo implementado na universidade para avançar objetivos de equidade racial em sua universidade. A narrativa de casos utiliza a teoria da prática, a teoria da atividade histórica cultural (CHAT) e a pesquisa narrativa para ilustrar como os líderes administrativos e os docentes da Universidade Principal Antiga coordenaram seus esforços de maneira sustentada por meio de dois ciclos de atividades de pesquisa profissional que respondeu aos objetivos da política. Os resultados mostram que o uso de dados é produtivo para promover a equidade racial quando os dados e protocolos de uso de dados são usados de forma iterativa e na interação entre os profissionais que os utilizam para identificar desigualdades enraizadas em suas próprias práticas. Os resultados apóiam a conclusão de que, para sustentar os esforços de mudança como projetos de

longo prazo (mesogenéticos), os formuladores de políticas e os reformadores locais devem redesenhar iterativamente ferramentas, práticas e políticas de dados para instituir mudanças nas práticas de trabalho cotidianas. (microgenética). Esse redesenho intencional tem o potencial de reestruturar as interações profissionais, manter a motivação e o aprendizado organizacional e aculturar os profissionais para a equidade como um padrão de prática.

Palavras-chave: raça; equidade; política educacional; dados; investigação; ensino pós-secundário; mudança organizacional

Introduction

Many national, state, and institutional policies and initiatives aim to reform postsecondary educational practices through better uses of data by college staff, faculty, and administrators. For example, performance-based funding and other state accountability policies depend largely on institutionalizing the use of standardized performance indicators and metrics (Colyvas, 2012). Most states are investing in databases to measure students' educational progress and hold institutions accountable for improving student success rates (Dougherty & Natow, 2015; Rutherford & Rabovsky, 2014). All of these data will require some type of practitioner inquiry, or structured "sensemaking" process (Kezar, 2014, p. 29), to make data "actionable" and relevant to educational reform (Marsh, 2012, p. 3; Marsh & Farrell, 2015; Witham & Bensimon, 2012). If databases, performance metrics, inquiry, and structured forms of data use are to be vehicles for improved equity, then the conditions that sustain organizational change efforts over time must be better understood. We take up that task in this article, with emphasis on the ways local reformers utilize ideas and tools of broader, long-term change initiatives to advance their agendas.

Our focus in this article is on data use for organizational change towards racial equity at public, predominantly White universities under conditions of accountability. The task of improving equity in higher education through effective uses of data deserves concerted attention. It is a critical challenge to educational policy and practice in an era when colleges and universities in the United States continue to be segregated by race and ethnicity (Anderson, Barone, Sun, & Bowlby, 2015; Baker, Klasik, & Reardon, 2018; Carnevale & Strohl, 2013; Posselt, Jacquet, Bielby, & Bastedo, 2012). The purpose of this study is to improve understanding of the conditions of data use that support organizational learning about inequitable policies and practices and how to go about changing them. The study contributes to the literature on data use and organizational change (e.g., Bensimon & Hanson, 2012; Bertrand & Marsh, 2015; Coburn & Turner, 2012; Dowd & Bensimon, 2015; Dowd & Tong, 2007; Horn, Kane, & Wilson, 2015; Kezar, 2011, 2014; Marsh, 2012) by illustrating how local institutional reformers can effectively use and adapt data and data use protocols made available to them through state and national initiatives that include practitioner inquiry as an element of the change process.

In the setting of our study, the context of data use was a voluntary system of institutional performance accountability adopted by a public state university system. As part of the accountability push, the university system was also involved in national data use initiatives, including the Access to Success Initiative, a project of the National Association of System Heads (NASHE) and the Education Trust. Through Access to Success, the leaders of 20 public higher education systems affirmed their commitment to cutting equity gaps in the rates of college entry and graduation among income, racial, and ethnic groups in half by 2015. Reflecting the demographics of the state in which

this study was conducted, the institutional performance gaps in focus were those affecting African American and Latinx student access, retention, and completion.

This paper has five main sections following this introduction. In the literature review, we synthesize studies of the use of data for organizational learning and change towards racial equity in higher education. As we discuss in our literature review, published works offer many examples of change among individuals who adopt a stronger identity as change agents through participation in action research utilizing practitioner inquiry (the systematic use of observation and data to hone one's professional expertise; Rodgers, 2002). At times, individual agency for equity has been associated with programmatic and departmental level reforms. However, especially in the arena of postsecondary schooling, examples of institution-wide curricular and policy change are less readily available—a gap we address in this article. A discussion of our theoretical framing, which combines practice theory and cultural historical activity theory (CHAT), follows.

The methodology section then begins by describing the broader context of the case study presented in this article, which focuses on the single case narrative of “Old Main University” (OMU) (a pseudonym). OMU was one of 14 universities in a state system of public four-year universities that was participating in the Access to Success initiative to close equity gaps in college access and graduation. To incentivize progress towards those goals, system leaders had also adopted a voluntary system of performance accountability. The accountability policy utilized financial incentives (i.e. performance-based funding) for improvement towards the system's equity and efficiency goals. To support organizational learning about how to use data to address racial equity issues, the system's leaders contracted with the Center for Urban Education at the University of Southern California to facilitate implementation of an action research process known as the “Equity Scorecard” (Bensimon & Malcom, 2012) at each of the 14 universities of the system.² The system leaders' objective was to provide resources for the interpretive framing of issues from an equity perspective and coaching in effective data use to faculty, staff, and administrators who were being called on to use the data to improve institutional performance. After the context of the study has been established, we detail the case sampling decisions, participant recruitment, data collection, and narrative analysis methods used for constructing the OMU case narrative.

The results section then follows in two main parts. The first part tells the story of data use at OMU during an initial cycle of inquiry structured by the Equity Scorecard data tools and inquiry processes. It illustrates how data tools and data use processes purposefully designed to catalyze organizational learning and change about racial equity were used by an “evidence team” of faculty and administrators at OMU to change institutional policies and practices. We characterize change in this dimension as microgenetic, meaning based in interpersonal and organizational-level interactions. The second part of the results section describes a subsequent cycle of data use led by faculty and administrators at OMU who adapted several Equity Scorecard tools from the initial inquiry cycle to create opportunities for more of their colleagues to examine ways to incorporate equity as a standard of practice into their everyday practices.

The discussion highlights the relationship between the knowledge generated through practitioner inquiry in local settings and the design of action research tools and processes in multiple settings over time. The conclusion summarizes the conditions of data use that foster sustained organizational change towards racial equity.

² See <https://cue.usc.edu/tools/the-equity-scorecard/> for information on the USC Center for Urban Education's web site for information about the Equity Scorecard.

Contribution of the Study

Issues of racial equity in higher education are receiving heightened attention as public incidents and displays of racism are on the rise (Museus, Ledesma, & Parker, 2015). After campus protests in Fall 2015 decrying institutionalized racism (We the Protestors, 2015), numerous institutions began announcing multi-million-dollar initiatives to improve racial diversity. The march by White supremacists on the University of Virginia campus and environs in Fall 2017 punctuated the veneer that universities, as places of higher learning, were immune from virulent forms of racism (Jaschik, 2017). Despite the clear imperative for proactive change, when it comes to the goal of producing equitable educational opportunities and outcomes among racial and ethnic groups in the U.S., change efforts can be derailed by a host of factors including new institutional priorities, leadership turnover, conflicting norms around “race talk,” or political shifts in the broader environment (Dowd & Bensimon, 2015; Pollock, 2001). If data use and organizational learning are to be vehicles for improved equity, then the conditions that sustain learning and change over time must be better understood. The capacity to see, through empirical study, how practitioners engage in organizational learning to address the racial equity issues that are the product of institutionalized racism will enable better investments in organizational change initiatives designed to improve racial equity.

This study contributes to the literature on organizational learning by documenting a data-informed organizational change effort carried out institution-wide by a group of practitioners acting collectively and over a sustained period of time to address inequitable policies and practices at their university. The local reform effort carried out by faculty and administrators outlasted changes in executive and system-level leadership, the loss of funding for structured data use, and political resistance to reform. Therefore, the OMU case presented here provides needed insight into the ways practitioners draw on resources available to them in the broader environment to advance organizational change towards racial equity in their own setting over time.

There are many institutional settings in which inquiry can be conducted to yield a better understanding of how racial inequities are reproduced systematically. At the postsecondary level, racial inequities are observed in several ways, including through institutional data that reveals unequal access and outcomes of racially and ethnically minoritized groups in hierarchically stratified and segregated educational systems (Carnevale & Strohl, 2013; Posselt et al., 2012).³ Stratification is evident in disparate rates of student access and departure from different types of institutions (e.g., research universities, community colleges, for-profit colleges; Harper, Patton, & Wooden, 2009; Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012; Illoh, 2017; Sáenz & Swan, 2018), fields of study (e.g., STEM, social sciences, applied fields such as business; L. D. Patton, 2016; Posselt & Grodsky, 2017), high status or well-resourced programs (e.g., honors colleges, undergraduate research, study abroad; Museus et al., 2015), and graduate study (Garces, 2013; Posselt & Grodsky, 2017). As we show in our results, the practitioners in this case study moved through two cycles of inquiry and instituted changes in multiple institutional policies and functions of the university, including student recruitment, admissions, advising, curriculum policies, governance, and institutional assessment.

The Use of Data in Organizational Change Efforts to Achieve Racial Equity

³ The term minoritized is used instead of “minority” to signify that persons are not born into a minority status, but are made subordinate and rendered into minority positions by US social institutions (Gillborn, 2005; Harper, 2012).

Consistent with the focus of our study, this literature review synthesizes studies about the use of data for organizational change towards racial equity in higher education. It is important to note, however, that the educational policy push for accountability and data use is occurring at all levels of schooling, including elementary (Chappell & Cahnmann-Taylor, 2013) and secondary schools (Coburn & Turner, 2012; Horn et al., 2015; Spillane, 2012; Stillman, 2011; Trujillo & Woulfin, 2014). In response, K-12 educational researchers have been documenting the importance of understanding the conditions of data use that facilitate practitioner learning about effective educational policies and practices.

Studies highlight that merely putting data in the hands of educators does not in itself produce data-informed decision-making by practitioners. The type of data provided (Horn et al., 2015), leadership styles and the framing of conversations about the purpose of incorporating data into every-day practices (Hallett, 2010; Marsh, Bush-Mecenas, Strunk, Lincove, & Huguet, 2017; Spillane, Parise, & Sherer, 2011) and the quality of social interactions during data use matter greatly, especially when issues of trust, power, and professional identity come into play (Datnow & Castellano, 2000; Marsh & Farrell, 2015). The quandary posed by Goren (2012), “data, data, and more data—what’s an educator to do?” has also been addressed by incorporating research findings into comprehensive guides to the practice of data use and inquiry in schools (Boudett, City, & Murnane, 2005; Bryk, Gomez, Grunow, & LeMahieu, 2015; Datnow, Park, & Wohlstetter, 2007; Panero & Talbert, 2013; Wohlstetter, Datnow, & Park, 2008).

Creating the conditions necessary for practitioner learning through data use is one of several mechanisms to promote accountability for improvements in organizational performance (Dougherty & Natow, 2015; Ebrahim, 2010). As suggested by titles such as “The Data Enabled Executive: Using Analytics for Student Success and Sustainability,” a policy report recently issued by the American Council on Education (Gagliardi & Turk, 2018), the press is on for data-informed practice in the postsecondary sector as well. Many higher education leaders in the US have endorsed the use of practitioner inquiry (a tradition of action research involving self-study) to foster organizational learning through structured data use (Lingenfelter, 2011). Generally, those who study organizational learning are interested in understanding “whether, how, and under what conditions organizations learn” (Kezar, 2014, p. 65).

Studies of Action Research and Practitioner Inquiry in Higher Education

In the context of the current study, organizational learning refers to the process by which practitioners engage collectively to learn about the root causes of institutional dysfunctions that produce racial inequities, develop knowledge to address them, and experiment with new policies and practices to improve organizational performance as measured by equity in college student participation and outcomes among racial and ethnic groups (Bauman, 2005; Bensimon, 2005; Bensimon & Harris III, 2012; Lorenz, 2012; Witham & Bensimon, 2012). Inquiry-based approaches to organizational learning rely on practitioners—faculty, administrators, and staff—to use data in a systematic and reflective manner to acquire the knowledge and expertise they need to carry out organizational change (Kezar, 2014; Panero & Talbert, 2013; Reason, 1994).

In a review published of the research literature in the US, the United Kingdom, and other countries, Romm (2010, p. 323) concluded that there are a “dearth of examples of ‘race conscious’ action research” studies. In the context of U.S. higher education, the number of examples has grown over the past decade, as several states, including California (Bensimon, 2004; Dowd, 2008), Colorado (Witham, Chase, Bensimon, Hanson, & Longanecker, 2015), Nevada (Bensimon, Dowd, Longanecker, & Witham, 2012), Pennsylvania (Cavanaugh & Garland, 2012) and Wisconsin (Dowd & Bensimon, 2015), have utilized the Equity Scorecard action research process to structure

practitioner inquiry as a central component of their accountability agenda, thereby centering race-conscious inquiry as a strategy for organizational improvement. In Colorado, the inquiry-based data use process, which led to curriculum restructuring and the development of culturally responsive pedagogies (Ladson-Billings, 1995) was paired closely with accountability policy formulation through the state's Equity in Excellence initiative (Witham et al., 2015).

The Illinois community college system has, similarly, utilized the data-driven continuous improvement process called Pathways to Results to support inquiry into racial inequities in the community colleges and to "scale equity-driven innovations" (Bragg, McCambly, & Durham, 2016, p. 43). All of these projects involved hosting meetings and institutes where participants could interact with each other as they engaged in sensemaking from an equity perspective about racial and ethnic disparities in student progress and success in academic milestones, such as retention to the second year of study or accumulating 30 credits.

Another example of data use for purposes of institutional performance improvement is Achieving the Dream, a major national initiative initially funded by the Lumina Foundation for Education. Achieving the Dream was designed to help community colleges build the capacity to institutionalize a "culture of evidence" through the use of data in decision-making (Mayer et al., 2014; Rutschow et al., 2011). Studies conducted over the course of five years provided evidence that participating campuses enhanced their leadership commitment to student success and increased their research capacity, which are important intermediate steps to organizational cultural change. Although many campuses experienced challenges to increasing faculty and staff engagement with data-driven decision making (Jenkins, Wachen, Moore, & Shulock, 2012; Mayer et al., 2014; Morest & Jenkins, 2007), some participating colleges reported increases in student achievement (Mayer et al., 2014; Rutschow et al., 2011).

Studies of Organizational Learning about Racial Equity in Higher Education

With these state investments in practitioner inquiry, the number of case studies investigating the quality of organizational learning about racial equity issues has grown. The action research literature includes numerous examples of individuals who, through involvement in practitioner inquiry, articulated stronger commitments to racial equity and changed their practices accordingly (e.g., Bensimon & Malcom, 2012; Bishop, 2014; Bragg & Durham, 2012; Dowd & Bensimon, 2015; Dowd, Bishop, Bensimon, & Witham, 2012; Dowd, Bishop, & Bensimon, 2015). For example, faculty members in several California community colleges involved in action research studies reviewed by Dowd and Bensimon (2015) revised their syllabi to use what they viewed as a more welcoming and culturally inclusive tone. In another example, two professors who served as evidence team leaders for Equity Scorecard implementation at the University of Wisconsin expressed growing awareness of White privilege after closely examining recruitment, admissions, and admitted applicant yield data (Dowd, Bishop, & Bensimon, 2015).

Other studies show that some institutional researchers in California and Wisconsin became more willing to utilize racially disaggregated data (called "vital signs" in the Equity Scorecard inquiry process; Bustillos, Rueda, & Bensimon, 2011; Dowd, Malcom, Nakamoto, & Bensimon, 2012), and academic leaders became more willing to publically articulate racial equity goals (Rueda, 2012). These studies show that changes in practice are motivated by an individual's conceptual change (Ching, 2018) towards critical perspectives on the social and political causes of inequities, which is termed "equity-mindedness" in this literature (Harris III & Bensimon, 2008).

Though fewer in number than studies demonstrating individual change, examples of equity-oriented changes at the programmatic and departmental levels have also been documented. Faculty and administrators at community colleges in California, Illinois, and Colorado have created new

programs, adopted race-conscious institutional assessment practices and pedagogies, and developed new communication strategies to foster organizational change (Bensimon & Harris III, 2012; Bustillos et al., 2011; Bustillos et al., 2012; Felix, Bensimon, Hanson, Gray, & Klingsmith, 2015; Pickel & Bragg, 2015; Rueda, 2012). For example, after action research using the Equity Scorecard, the director and advisory group of an honors program at the University of Wisconsin revamped their selection criteria to reduce inequitable emphasis on the use of SAT scores in a shift to a broader array of indicators of academic potential in order to admit a more diverse group of students (Dowd & Bensimon, 2015).

Though demonstrating the value of inquiry to promote equity, most of these studies document change occurring in pockets of an institution. Therefore, the few examples available in this literature of institution-wide change occurring across multiple departments, offices, and functions (e.g. Bensimon, Dowd, Alford, & Trapp, 2007; Felix et al., 2015; Robinson-Armstrong, Clemons, Fissinger, & Saucedo, 2012) are particularly notable. In these studies, faculty and administrative leaders acted jointly and independently in their arenas of functional authority to carefully design interactions with colleagues to discuss data providing evidence of racial equity gaps. In a Colorado community college, subsequent to college-wide, “all college” forums, community college faculty in multiple departments learned how to do peer classroom observations and coach each other about equity-minded pedagogies (Felix et al., 2015), and a California community college that engaged in multiple action research projects over five years completely revamped its academic advising and support services to provide great transfer access to institutions in the University of California system (Bensimon, Dowd, Alford, & Trapp, 2007).

The empirical gap in the evidence concerning individual conceptual and behavioral change in contrast to broader organizational change is due in part to the relatively short duration (one to two years) of most of the published case studies. Those studies that did allow for longer-term observations of change show that institution- and system-wide change is difficult to sustain. For example, the California community college that instituted promising college-wide changes to improve transfer access to the University of California saw those efforts greatly diminished by deep state budget cuts (Bensimon et al., 2007; Dowd, Bishop, et al., 2012). At the University of Wisconsin, after several cycles of practitioner inquiry, system leaders were similarly poised to make equity-directed changes to their transfer access policies, but they were then stymied by political pressures (Dowd & Bensimon, 2015).

Summary

This literature review has focused on organizational learning about racial equity through action research and practitioner inquiry involving structured data use in higher education. Other authors provide authoritative syntheses of organizational change in colleges and universities (Kezar, 2014), which we have not sought to replicate here. Recent works hone the findings of earlier studies by focusing on data use for particular purposes, such as improved teaching, learning assessment, and course design (Hora, Bouwma-Gearhart, & Park, 2017), and refining understanding of the role of shared leadership, college-based teams, and communities of practice in carrying out organizational change efforts (Gehrke & Kezar, 2017; Lester & Kezar, 2017). As with the action research literature focused on change towards racial equity, these studies more often document organizational change at a programmatic or departmental level, or at the level of individual instructors’ practices. The more limited evidence concerning institutional-level change indicates a positive association between leadership at multiple levels (e.g. faculty and executive administrators) and sustained engagement in change initiatives over time.

Theoretical Framework

Practice theory and CHAT offer complementary perspectives on learning, development, and organizational change (Collins, 2011; Gutiérrez, Engeström, & Sannino, 2016; Orland-Barak & Becher, 2011; Somekh & Nissen, 2011). Together they enable a focus on the multiple levels at which change in organizations occurs, including the individual (personal), interpersonal (social), and institutional (community) “planes” (Rueda, 2012, p. 180, citing Rogoff). To practice theory’s predominant focus on individual sensemaking and agency, CHAT adds the sociocultural and historical context.

In this article, we provide evidence of the ways data and data use protocols can be used productively to promote interpersonal and institutional change over time in ways that foster racial equity in higher education, for example through changes in institutional policies concerning admissions criteria, curriculum requirements, student learning assessment, and degree completion. The time scales of change we examine include the “microgenetic,” which are changes in “everyday interactions,” and the “mesogenetic,” activities and projects unfolding over a longer period of time in multiple institutions (Lee, 2011, p. 413; see also Parsons & Bayne, 2013, p. 155). Settings where microgenetic interactions occur in higher education include faculty-student advising meetings, classrooms, and governance committee meetings. Mesogenetic, long-term change projects are field-based. Achieving the Dream, performance-based funding, and the “college completion agenda” are prominent examples of these (Baldwin, Bensimon, Dowd, & Kleiman, 2011).

Contributing to an emerging approach in the study of organizational change in higher education (e.g. Bensimon & Malcom, 2012; Dowd & Bensimon, 2015; Dowd, Bishop, & Bensimon, 2015; Dowd, Bishop, Bensimon, & Witham, 2012; Rueda, 2012; Witham & Bensimon, 2012), our theoretical frame integrates practice theory with cultural historical activity theory (CHAT). We use practice theory, which explicates how individual practitioners develop expertise to address problems of practice, to analyze what practitioners learn and do through practitioner inquiry (Kemmis & McTaggart, 2000; Reason, 1994; Rodgers, 2002) and CHAT (Engeström, 2001, 2008; Portes & Salas, 2011; Roth & Lee, 2007; Rueda, 2012) to analyze how the learning of individuals can constitute organizational learning on behalf of their organizations (Lee, 2011; Lee & Roth, 2007; Witham & Bensimon, 2012). Utilizing practice theory and CHAT together creates a multifaceted analytical lens because CHAT expands on the more individualistic lens of practice theory by placing the practices of individual practitioners in social, cultural, and historical context (Portes & Salas, 2011).

A focus on individuals is inadequate because change in higher education is complicated by the fact that institutional operations involve many different functional systems (e.g. curricular, administrative, programmatic), each with its own cultural practices and traditions. CHAT attempts to decipher such complexity by conceptualizing cultural practices and activity systems as having six analytical elements, which place individuals as actors in settings with particular histories and norms. The six CHAT elements are (1) subjects (participants), (2) instruments (also referred to as mediating artifacts or tools), (3) rules (which include roles and norms), (4) communities (of practice and of relationship), (5) division of labor, and (6) object (Engeström, 1987, Figure 4.4). In activity theory, activity is said to be “mediated” by cultural artifacts, which include material things (e.g. desks in a classroom, a PowerPoint display) and symbolic artifacts, which include images, gestures, and language itself (e.g. “equity,” “academic credit”). “Artifacts, both material and symbolic,” are a defining element of professional practice; they “shape human activity and allow human beings to shape activity” (Ogawa, Crain, Loomis, & Ball, 2008, p. 83). The term “object” has a very specialized meaning in activity theory. It refers to the motive or collective sense of purpose that is communicated to and by those who exist within a system.

The six elements of an activity system are parsed out for analytical purposes. However, these elements are closely interrelated in theory and it is, therefore, possible to locate individual practitioners within CHAT. A central CHAT principle is that “changes in any aspect of the activity setting can produce changes elsewhere in the system” (Rueda, 2012, p. 185). The artifacts of practice, distribution of roles and responsibilities, rules of behavior, and boundaries of a community of practice all seem normal to those who are acculturated to the way things are done in a setting. From the CHAT perspective, the generation and use of new rules, roles, and norms by practitioners; the creation of new communities of practice; and acculturation to new divisions of labor in work settings are viewed as evidence of organizational change. As participants in an activity system (in our case higher education practitioners) use new cultural tools or interact with others in new ways, the culture changes; it becomes “re-mediated,” in the Vygotskian sense of cultural remediation (Glassmen, 2001; Moll, 2000; Roth & Lee, 2007). The subjects of the system become acculturated to new ways of doing things, coming to accept them as “the way things ought to be” (Spillane et al., 2011, p. 615).

Theoretically, the process of cultural remediation will produce a different object (motivation) of the system for the individuals involved and a different outcome of activity in that system. The object of activity is often implicit. Individuals who are acculturated in a setting do not typically ask, “what is the object of this activity?” The object is brought into consciousness when it is challenged or questioned, such as may occur when community members from distinct activity systems residing within the same organization interact. For example, professors in one department may view assessment of student learning as an opportunity to weed out weak students; whereas in another, the faculty may utilize assessment to diagnose and address students’ learning needs. If a dean attempted a merger of the two, the conflicting object of the activity system of assessment might become evident as faculty in the merged department tried to decide on their new pre-requisites, curriculum requirements, and grading standards.

Both practice theory and CHAT highlight that contradictions between historically espoused goals and contemporary practices occur and, when consciously engaged by actors in a setting, can be beneficial to promote change. In practice theory, these are referred to as “indeterminate situations” of practice (Polkinghorne, 2004), and in activity theory, these are referred to as “critical disturbances” of practice (Engeström, 2008, p. 38). Such contradictions challenge deeply and implicitly held beliefs. Historically-rooted norms become amenable to change when practitioners experience contradictions, because taken-for-granted assumptions become explicit and can be viewed in a new light. For example, faculty members may believe that SAT scores are fair selection criteria for undergraduate admission until they see data showing that SAT scores are not strong predictors of student success in their own program.

CHAT’s theoretical constructs are useful heuristics to diagnose problems of practice in sociocultural terms. Practice theory offers a prescription, centered on individual agency, for addressing those problems. Practice theory’s methods of reflective practice—which include systematic observation, data use, questioning, reflection, and experimentation—are advocated as an approach to productively bring indeterminate situations of practice into view. Once contradictions are brought into view, practitioners can then actively produce the knowledge and practices they need to resolve critical contradictions (Bensimon, 2012; Lorenz, 2012; Polkinghorne, 2004). As in prior studies of organizational change efforts using the Equity Scorecard tools and process (Bensimon & Malcom, 2012; Dowd & Bensimon, 2015), the critical contradiction of this case study emerges from data use by higher education practitioners that brings institutional practices that are producing racial inequities into view.

Methodology

The findings presented in this article are from a larger case study of organizational learning and change subsequent to action research using the Equity Scorecard, which utilizes a practitioner-as-researcher inquiry model (Bensimon, Polkinghorne, Bauman, & Vallejo, 2004). From 2011 to 2013, a state university system of 14 universities implemented the Equity Scorecard as one aspect of their participation in the NASH/Education Trust Access to Success Initiative and of their performance accountability policy. From 2013 to 2015, the authors were part of a research team that conducted a case study (Stake, 1995) of five of the 14 universities to examine organizational learning through data use under conditions of accountability for equity. The purpose of this article is to illustrate the conditions of data use that foster sustained organizational learning and change towards racial equity. Towards that purpose, we decided to present a single case narrative of OMU as a rich case (M. Q. Patton, 1990), because this approach allows us to detail sustained data use in social interaction at one institution over time. It also enables naturalistic generalizations (Stake, 1995; Trumbull, 1998) by practitioners and educational researchers who wish to inform their own practice of leading or researching organizational change.

The State and Institutional Context of the Case Study

At the time of our case study, OMU and nearly all of the campuses in its system of public universities were classified in the Integrated Postsecondary Education Data System (IPEDS, 2013-2014) as public, four-year “primarily baccalaureate or above” institutions. These institutions had an average four-year graduation rate for Bachelor’s degrees of 35% and an average six-year graduation rate for Bachelor’s degrees of 56%. System-wide six-year graduation gaps facing African American and Hispanic/Latinx students averaged 23 to 15 percentage points. The lower rates of student success among African American and Hispanic/Latinx students were a strong factor motivating the system’s adoption of a voluntary performance accountability policy and its participation in Access to Success.

In addition, with a declining college-going White population in the state and region, university budgets increasingly depended on the retention of enrolled students through to graduation. Regional institutions, their enrollment profiles reflected the predominantly White population of the suburbs, towns, and rural areas of the state. The majority of undergraduates were White (with enrollment shares typically in the range of 78% to 87%), came from within the state, and lived on campus. Black or African American student were the next largest group of enrolled students, averaging 8% within a range of 5% to 9%, and Hispanic/Latino students averaged 4%. Asian, Pacific Islander, and Native and American Indian students were a very small proportion of enrollments (less than 2%).

At OMU, the racial-ethnic composition of the undergraduate student body of approximately 15,000 undergraduates in Fall 2013 was roughly 80% White, 10% Black/African American, 4% Hispanic/Latino, 2% Asian/Native Hawaiian/Pacific Islander, and 0% American Indian/Alaska Native.⁴ Population growth for the White and Black populations in the region surrounding OMU was stagnant, but the Hispanic population had experienced a nearly 50% jump from 2007 to 2012, according to Census Bureau estimates.⁵ Moderately selective in its admissions, OMU admitted

⁴ Sum of percentages does not equal 100% due to rounding and omission in these descriptive statistics of students with unknown race/ethnicity.

⁵ U.S. Census Bureau, *ACS Demographic and Housing Estimates*, 2007 American Community Survey 3-Year Estimates and 2012 American Community Survey 3-Year Estimates [DP05]

almost half of those who applied for undergraduate full-time enrollment and had an average yield rate among admitted applicants of approximately one-third.⁶

The Equity Scorecard Implementation

As is typical in the Equity Scorecard process (Bensimon & Harris III, 2012), the chief academic officers of each of the 14 universities in the state system that is the broader setting of our study invited a cross-functional group of 12 administrators, faculty, and staff to act as an Equity Scorecard evidence team (for the leadership principles guiding evidence team selection, see Bensimon & Neumann, 1993; Neumann, 1991). These evidence teams were typically led by two team leaders (one a faculty member and one an administrator) and included the university's institutional researcher who provided access to existing institutional data disaggregated by race and ethnicity, which team members discussed during monthly team meetings. The numerical baseline data for inquiry were referred to as "vital signs" and organized in sets of indicators representing milestones in student access, retention, and graduation.⁷

The Equity Scorecard concepts and data tools were introduced, first to evidence team leaders and then to evidence team members, at two "kick off" institutes designed as professional development workshops. These institutes involved presentations, facilitated dialogue about race and equity, case study readings, review of report templates and project timelines, data analysis worksheets, and equity goal setting. To foster data use from an equity perspective, conceptual tools such as the concepts of "equity-mindedness," "equity gaps," and "institutional responsibility" were introduced during system-wide professional development institutes. Subsequent inquiry activities at each university, including inquiry using observational, documentary, and interview data collected by evidence team members, were guided by an action research facilitator and data-use coach who was a professional staff member of USC's Center for Urban Education. (The design of the Equity Scorecard protocols is extensively documented elsewhere; for more information, see e.g., Bensimon, 2012; Bensimon et al., 2012; Bensimon & Hanson, 2012; Bensimon & Harris III, 2012; Bensimon & Malcom, 2012; Dowd & Bensimon, 2015; Dowd, Bishop, et al., 2012; Dowd et al., 2015; Felix et al., 2015; Witham & Bensimon, 2012; Witham et al., 2015).

After the initial project launch focused on team work and the access vital signs, two additional institutes were held to encourage the institutionalization of equity standards. These institutes, which also included evidence teams from all of the participating campuses, focused on retention/graduation indicators and on sustainability of organizational learning about racial equity. As evidence teams completed their review of access and retention/completion data, they summarized their inquiry findings and action plan recommendations as Equity Scorecard reports, which were presented to the university's chief academic officer for their decision making regarding which of the recommended steps to implement.

⁶ U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2013), Integrated Postsecondary Education Data System (IPEDS), 12 Enrollment (E12) component, [Data file]. Available from <http://nces.ed.gov/ipeds/datacenter/>

⁷ Among other statistics, the vital signs indicators for college access included initial admissions status (e.g., special admit; undeclared major). Retention indicators included credit accumulation indicators (e.g., 30 credits completed) and first-to-second year and second-to-third year retention for students enrolled full time. Graduation indicators included four-year and six-year completion rates. Trend lines and three-year averages were also utilized, especially as needed to aggregate small numbers of Black and Hispanic students.

OMU and its sister institutions continued to be subject to performance-based funding and reporting throughout the period of Equity Scorecard implementation.⁸ System leaders addressed participants at each of the institutes to show their support for the work of the evidence teams and to make connections between the inquiry work being conducted and the performance accountability goals. These features of the action research project locate the OMU inquiry process within the longer-term projects of the Equity Scorecard and of performance-based funding as a driver of organizational change based in accountability policies.

For several reasons, we decided to present our results in this article concerning the conditions that foster sustained, institution-wide change towards racial equity through a single case narrative of organizational learning and change at OMU. We selected OMU from among the five universities studied as part of our larger case study because, in comparison with the four other institutions, OMU's evidence team members sustained their efforts for the longest period of time, even continuing to meet with each other after the formal conclusion of the action research initiative. The nature of the group's collaborative and sustained interactions were also evident during interviews. Each had regularly attended the monthly team meetings and recounted specific inquiry steps they had taken with other team members (e.g., conducting peer interviews in the admissions office).⁹ Team members were familiar with specific details of recommendations they had made in the Equity Scorecard report to OMU's provost and could explain the inquiry results that had informed those recommendations. These results and recommendations were well grounded in specific data points from the vital signs and findings generated from qualitative data collected during inquiry activities. These qualities of team work and data use at OMU contrasted with other case study sites, where in some cases much of the work had fallen on the team leaders alone or where Equity Scorecard Reports were incomplete.

Finally, of importance to us in deciding to feature this particular university as a focal case in this article, it is noteworthy that OMU evidence team members implemented changes in the curriculum and curriculum policies (as we show in the results). This is particularly noteworthy because, in comparison to student services and special programs (e.g., peer mentoring), the curriculum is a core university function that is not readily amenable to change under accountability policies because it typically requires sustained faculty involvement, which can be hard to attract when the push for change is coming from external sources.

The Case Study Design

Data collection. We recruited individual case study participants by sending an initial and then a follow-up email message to all team members. Seven of 12 OMU team members agreed to participate in the study, one declined, and four did not respond. Two senior administrators who had responsibility for receiving and deciding whether to act on the evidence team's recommendations

⁸ The performance funding required universities to measure and report on a variety of metrics organized to monitor student access and outcomes, as well as institutional efficiency and productivity in resource use (e.g., faculty teaching loads). Accountability reporting for the access and success categories included indicators of equity gaps measured by student race, ethnicity, and income status.

⁹ The purposeful sampling of the five universities provided us with variation in the data use process at each institution, as reflected by: the evidence team's Equity Scorecard reports; leadership turnover, which is known to impede sustained change (Kezar, 2009), or leadership stability during the action research phase; and geographic variation between rural/small town and suburban locations (none were urban campuses).

also participated, bringing the total number of OMU case study participants to nine.¹⁰ As detailed in column 1 of Table 1, they included three senior administrators (a White woman, a Black man, and a Latina), five faculty members (one Black man, one White man, and three White women), and a Black Latina staff member.¹¹

The primary mode of data collection involved a total of 18 interviews with individual OMU administrators and faculty conducted from April, 2014, to January, 2015. During field entry, we met on the OMU campus with the provost and, separately, with the two OMU team leaders together to conduct informal interviews, which were not audiotaped. These conversations revolved around the study's purpose, design, and human subjects' protections. Similar meetings were held midway through the study to inform these individuals of the study's progress. Then we conducted semi-structured, approximately hour-long interviews with the seven evidence team members, including the two team leaders, and the provost. These were guided by an interview protocol, and with the exception of an interview with one administrative staff member who declined to be recorded, they were audiotaped.

The semi-structured interview protocol included questions about the participants' expectations and motivation for involvement in the inquiry project, their racial and ethnic identities, and their experience of team meetings.¹² Follow-up questions probed for examples of data use in respondents' daily work, interactions with others, and participants' knowledge of performance-based funding metrics and policies.¹³ After initial analysis of the structured interview data, we used a teleconferencing platform to conduct member check interviews with four evidence team members.¹⁴ The member check interviews allowed us to learn whether events and activities described by participants in the earlier interview held the same meaning for the respondent after a year-and-a-half had gone by and whether plans and recommendations generated by the inquiry process had come to fruition.¹⁵ Observations of physical spaces on campus (e.g. lounge area of the multicultural center, the cafeteria, faculty offices) and document collection complemented the interviews.¹⁶ A research

¹⁰ The same purposeful sampling procedures were followed at the other four universities in the larger study. In addition, as part of the larger study, we recruited participants who were frequent data users but who were not members of the Equity Scorecard team.

¹¹ The team members who did not participate included the institutional researcher, a department chair, a dean, a faculty member, and a staff member.

¹² During the first part of the interview, we checked our understanding (gleaned from the document review of Equity Scorecard reports) of the activities OMU team members had engaged in during the inquiry process. We provided a one-and-a-half page summary of the key findings and recommendations we had excerpted from the two Equity Scorecard reports (one concerning student access and one concerning student retention) that were available for our review at the start of the case study phase.

¹³ The interview protocols were designed to collect data about PBF and inquiry implementation, as experienced directly by the respondent. PBF featured in the experiences of executive leaders (e.g., provosts, system leaders), but not directly in the experiences of faculty or lower-level administrators and staff whom we interviewed. The findings of this study are based on respondents who referenced the inquiry process rather than PBF.

¹⁴ We used a PowerPoint display to present emerging findings, supported by quotations from the prior interview with the participant. We asked each respondent to comment on our interpretations and their current feelings and beliefs about what they had said previously. Responses were captured in field notes.

¹⁵ The broader case study involved 95 interviews with 65 participants.

¹⁶ We collected and reviewed brochures and other materials oriented towards student advising and professional development regarding diversity, equity and multiculturalism. For example, we obtained a meeting agenda for a workshop conducted by OMU team members for OMU staff that provided professional development for those interested in playing a role as equity advocates. We also accessed on-line

team member observed a three-hour data use workshop led by four evidence team members for OMU department chairs during the start of the second inquiry cycle and provided field notes for our analysis.

Data analysis. Audiotaped interviews were listened to, transcribed, and read in full by both authors. We used Atlas.ti qualitative data analysis software and data summaries in Excel to implement the plot analysis technique of narrative inquiry described by Daiute (2011, 2014, 2015). Through plot analysis, we identified the “complicating actions” and “resolution strategies” featured in participants’ stories of data use and inquiry to promote racial equity at OMU.¹⁷ Plots are a natural feature of language and a basic building block of narratives. They revolve around “high points,” as narrators make sense of their position in the world, the “troubles” they encounter (2011), and their interactions with others and with events. Plot analysis involves coding for setting, characters, initiating actions, complicating actions, the high point (also known as turning point or climax), resolution strategies, ending, and coda.

We conducted plot analysis for those narratives where the turning point revolved around activities involving data use, inquiry protocols, beliefs about equity and diversity (participants’ own and others’), and participants’ perceptions of the changes associated with the data use and inquiry process.¹⁸ The number of plots coded ranged from six to 12 per transcribed interview and summed to 63 plots. Each plot was coded thematically as a narrative about one or more of the following themes, which were derived from our literature review and the study purpose: action, change, data, diversity, knowing, legitimacy, and resources.¹⁹

Plot elements referencing the settings, characters, and initiating actions informed our construction of a holistic story of data use, inquiry, racial equity, and change at OMU. Whereas plot analysis allowed us to deconstruct and reconstruct our data categorically and thematically, writing a chronological narrative of data use at OMU helped us to understand events, actors, and their use of cultural artifacts holistically, “keeping the story together” (Beal, 2013, p. 692) as part of a larger, “temporally linked” whole (p. 695). Plot analysis and our process of narrative construction were iterative as we moved from analysis of data collected earlier to data collected later on. In

news articles, press releases, and blogs that referenced equity and diversity-related news and events at OMU. For example, we obtained the strategic plan (which incorporated the team’s equity plan recommendations) and learned about changes in the institution’s leadership through news reports.

¹⁷ Consistent with the nature of the questions on our interview protocol, the most common complicating actions revolved around data (e.g., access to, points learned from, continuing use of, etc.) and feelings about “race talk” and racial equity. Complicating actions (which can be negative or positive plots turns) concerning institutional capacity featured in the plots of administrators; the related issue of juggling multiple roles and responsibilities were raised by faculty. Issues of legitimacy of data use for inquiries into racial equity and of the evidence team complicated the narrative plots of faculty and administrators alike. Participants often described more than one type resolution, with resolutions involving the use of ideas (e.g., equity- and deficit-mindedness) occurring with the highest frequency. Other prevalent resolution strategies involved various forms of coordination, persuasion, communication, and approaches (e.g., meetings and committees) to legitimize data use and communities of practice, of the Equity Scorecard team members and others. The bridging role of team leaders Liz Michaels and Alejandra Castillo was evident in their use of a relatively large number of resolution strategies and Dr. Castillo’s prevalent use of communication, collaboration, and accountability strategies.

¹⁸ Examples of the type of text that we did not code include descriptions of a person’s job responsibilities, the organizational structure of the respondent’s unit, and details of data definitions.

¹⁹ We also coded for three additional themes as narratives of agency, doing the good (praxis), and trust. Our analyses of these themes are presented in related articles, in preparation. This allows us to focus in this article on the relationship between the mesogenetic and microgenetic aspects of planned change.

constructing the narrative, we reviewed and incorporated information in field notes, Equity Scorecard reports, meeting agendas, and other collected documents. Throughout our analyses and development of the OMU case narrative, we moved back and forth deductively and inductively between the CHAT-based action research theory of change and our data, challenging the adequacy of our interpretations by looking for confirming and disconfirming evidence (M. Q. Patton, 1990).

Columns 3 and 4 of Table 1 (discussed further in Results) document the variety of artifacts team members referenced in the coded plots. These listings show that the OMU team had many resources available to them in their immediate and broader environment to engage in organizational change. Column 3 lists an array of institutional artifacts (including functions, organizational structures, and programs). Column 4 lists artifacts in use in the national field of higher education (including organizations, materials, tools, and concepts), followed by a listing of the Equity Scorecard artifacts referenced by participants during their interviews. The high frequency of reference among participants to the team structure, leaders, meetings, inquiry protocols, reports, and team recommendations indicate that the group was functioning as a collaborative work group, a “real team” (Bensimon & Neumann, 1993).

Our “Story of Data Use at OMU” in the Results foregrounds evidence team members’ use of Equity Scorecard artifacts to address racial inequities in academic and curricular policies facing undeclared majors (the classification assigned to students who had not yet declared a major, who were also referred to as “pre-majors”). This focal effort was described by five participants during multiple structured and informal interviews, documented in reports and meeting agendas, and represented in field notes collected at a three-hour professional development workshop that team members hosted for department chairs. We selected it as the central narrative of data use at OMU because triangulation of these multiple data sources strengthens the credibility and trustworthiness of our account. The data provide strong evidence that the data workshop for department chairs was a pivotal event in the inquiry process, held meaning for team members, and was part of a concerted, sustained, and consequential effort to bring about organizational change. To us, the workshop also represented a critical transition point at which OMU team members began to adapt the Equity Scorecard inquiry tools for use broader use.

As shown in Table 1, the OMU team members (whom we refer to by pseudonyms in presenting our results) also addressed other focal efforts, which are not featured in our case narrative. For example, Dr. Alejandra Castillo, Dr. Gary Young, and Ms. Melora Castro spoke in detail about their efforts to improve transfer access from community colleges, while Dr. Andrew Swenson focused considerably on strategic planning and general education reform.

Table 1

Case Summary by Demographic Characteristics and References to Institutional Artifacts, Equity Scorecard, and National Field Artifacts

Participant (pseudonym); Race/Ethnicity/Gender/ Role; Data Collection: # of Plots Coded	Institutional artifacts	Artifacts adopted or adapted from the <u>National higher education field</u> & from the <u>Equity Scorecard</u>
Margaret Knight, White woman, Provost One unstructured interview during field entry; One semi- structured, audiotaped interview; Observation of participation in a professional development workshop. Plots coded: 7	President, vice presidents, deans, department chairs; Office of Student Affairs; the Budget; Office of Admissions, Enrollment Management & Planning, and Multicultural Affairs; Special admissions program; Pre-major advising, student mentors, and tutoring; Academic planning process and innovation resource fund; Curriculum, assessment, and assessment coordinator; Math placement test.	<u>National higher education field artifacts</u> Access to Success; Performance-based funding; Degree Compass; American Assn. of State Colleges and Universities (AASCU) conference presentation; URMs (“under-represented minority students”) <u>Equity Scorecard artifacts</u> Evidence team and team leaders; Structured inquiry process; Evidence team final report and recommendations, action plans; Materials used at data workshop for chairs
Alejandra Castillo, Latina, Senior administrator & team leader Two unstructured interviews during field entry; One semi- structured, audiotaped interview; Observation of participation in a professional development workshop; One member check interview. Plots coded: 9	President’s cabinet of chief academic officers & vice presidents; Associate deans executive council; Student retention committee; Associate provost and associate deans; Director of institutional research; Director of social equity; Diversity committee of College of Arts and Science; Enrollment management & planning group, registrar, and financial aid; Advisory board;	<u>National higher education field artifacts</u> Performance indicators; First-Year Experience conference participation; URMs (“under-represented minority students”); Learning communities; FIGs (Faculty inquiry groups); EDI (Education Delivery Institute); Distributed leadership; Culturally inclusive campus; NSSE (National Survey of Student Engagement); Campus climate survey. <u>Equity Scorecard Artifacts</u> Evidence team members, team selection protocol, team

Academic policies (e.g. credit accumulation, probation, student admission tiers);
Mentoring program;
Data and assessment policies;
Leadership portfolio;
Curriculum committee and assessment rubric;
Teaching assistant;
Evidence team retreats and hosted workshops;
Budget and three-year cost projections;
Freshman composition and remedial writing courses;
Community colleges;
Deans' competitive funding priorities;
Equity scenarios (for professional development workshops);
Student affairs and staff meetings;
Individual equity action plans;
"All in for Equity" stickers.

meetings, and team's inquiry calendar;
President's charge to Scorecard team;
Structured inquiry process;
Kick-off Scorecard "training";
Team facilitation tools (working in pairs; off-topic conversations put in "parking lot");
Access, retention and graduation, and excellence perspectives;
Inquiry protocol for qualitative data collection;
Progress and recommendations report;
Materials used at data workshop for chairs.

Gary Young,
Black man,
Administrator
One semi-structured,
audiotaped interview.
Plots coded: 7

President's cabinet;
A.V.P of Enrollment Management, Director of admissions, recruiting staff, and application fee waivers;
Transfer student orientation;
Academic probation;
Institutional research and data;
Survey results and regression analyses;
Credit completion rate;
Cumulative GPAS.

National higher education field artifacts
URMs ("under-represented minority students")
Equity Scorecard Artifacts
Evidence team's recommendations.

<p>Liz Michaels, White woman, Faculty member & team leader One unstructured interview during field entry; One semi- structured, in-person interview; One member check interview; Observation of participation in a professional development workshop. Plots coded: 12</p>	<p>Institutional researcher; GPAS; Retention committee; Governance committees; Campus news articles; Department chairs planning group; Admissions office; Professional training/facilitation skills; Strategic planning committee; Tenure system; Brother-to-brother program; Office of multicultural affairs; Student services; Honors College; Provost's funding incentive and request for inquiry proposals.</p>	<p><u>National higher education field artifacts</u> Performance funding; Enrollment management; Research literature and regression analyses (findings about causal factors/ "risk factors," and predictors of student success); SATs/ SAT-optional; EDI (Education Delivery Institute). <u>Equity Scorecard Artifacts</u> Equity Scorecard project specialist; Team members, team selection process, and team leaders; Big picture/data use; Access, retention and completion, and excellence perspectives; Focal efforts and equity benchmark goals; Progress and recommendations report; Materials used at data workshop for chairs.*</p>
<p>Owen Walker, Black man, Department chair & faculty member One semi-structured, in-person interview; One member check interview; Observation of participation in a professional development workshop. Plots coded: 9</p>	<p>President's cabinet and vice presidents; Department chairs; Institutional researcher; Admissions office, recruiters, and Transfer Day; Undeclared majors; Gatekeeping courses, and student advising open sessions; Early alert system; General education, Tutoring/academic development program; Academic governance/policies; Multicultural faculty commission;</p>	<p><u>National higher education field artifacts</u> Accreditation <u>Equity Scorecard Artifacts</u> Ground rules (race talk) Team members and team leaders; Access, retention and completion perspectives; Retention rates/numbers Equity gaps/small numbers; Peer interview guide; Materials used at data workshop for chairs.</p>

<p>Theresa Sample, White woman, Faculty member One semi-structured, in-person interview, One member check interview; Observation of participation in a professional development workshop. Plots coded: 6</p>	<p>Mentoring program for faculty. President's cabinet, Provost, Vice president of enrollment; Governance committees; Undeclared majors; GPAs; Retention committee; Institutional research; Information Technology office.</p>	<p><u>National higher education field artifacts</u> PeopleSoft student management information system; First-gen students. <u>Equity Scorecard Artifacts</u> Disaggregated data by race/ethnicity/gender; Team members and leaders; Website review protocol; Access, retention and completion, and excellence perspectives; Equity gaps; Team's recommendations and reports; Materials used at data workshop for chairs.</p>
<p>Andrew Swenson, White man; Faculty member One semi-structured, in-person interview & one member check interview. Plots coded: 7</p>	<p>Deans/provost; Strategic planning committee; Student success network; General education reform committee; Admissions and financial aid office; Regular reporting structures.</p>	<p><u>National higher education field artifacts</u> none <u>Equity Scorecard Artifacts</u> Team members and team leaders; Disaggregated data tables; Use of big data and small data; Equity-minded and deficit-minded; Questioning; Race-consciousness; Equity-gaps; Inquiry (monitoring the gaps).</p>
<p>Diane Stone, White woman, Faculty member One semi-structured, in-person interview. Plots coded: 6</p>	<p>Institutional policies; LGBT services; Student teaching field placement; GPAs; Benchmarks; Budget; Counseling Center; Residence Life; Career Development</p>	<p><u>National higher education field artifacts</u> none <u>Equity Scorecard Artifacts</u> Kick-off meeting/Workshops; Evidence team members, meetings, and leaders; Peer interview protocol; Data and use of small numbers; Hunches (problem-framing)</p>

	Center; Financial Aid; Work-study.	protocol; Equity, equity gaps and focal effort; Team recommendations; Materials used at data workshop for chairs.
Melora Castro, Black Latina, Staff member One semi-structured, in-person interview. Plots coded: NA	Faculty stipend for service on Equity Scorecard team; Retention Committee; Mentoring program; Student learning outcomes assessment; Retention rates; Student leadership conference; Academic awards program; Physical office space; Student affairs division meeting.	<u>National higher education field artifacts</u> NSSE (National Survey of Student Engagement) <u>Equity Scorecard Artifacts</u> Evidence team members, meetings, agendas, and leaders; Presentation at evidence team meeting. Team recommendations; Peer interviews; Web scan (document analysis protocol).

Notes: The materials used at data workshop for chairs included disaggregated data tables; cohort milestones in retention and graduation progression; asset mapping; equity gaps and goals; narrative goals statement).

NA = No transcription was available for plot analysis for this case because the participant declined to have the interview recorded.

Positionality. Data intermediaries and organizations that provide technical support for change in educational institutions are not neutral and objective contributors to change processes (Trujillo & Woulfin, 2014). We subscribe to the stated goals of and have been involved in the design of the action research tools of the Equity Scorecard. This means that as action researchers and as case study researchers we are interested in understanding how data collected and reported with affirmative race consciousness (Bensimon, 2012, p. 36) can be used productively by higher education practitioners. In moving between action research and case study research, we do not believe we are moving from a position of subjectivity to one of objectivity. We place value on constructing a holistic case that illustrates what practitioners do, how they use cultural artifacts designed by them or others, and the challenges they face when implementing organizational change towards racial equity. Our belief in the value of such a case heightens rather than diminishes our interest in presenting a trustworthy and credible analysis. As Ching (2018), drawing on Dole and Sinatra’s “Cognitive Reconstruction of Knowledge Model,” emphasizes, the presentation of content that is “coherent, comprehensible, plausible, and rhetorically compelling” and has personal relevance to practitioners provides a necessary stimulus to the conceptual change we aim to promote.

Action research need not and should not be conducted void of theoretical and empirical analysis (Romm, 2010). Our knowledge of the action research design positioned us to compare the theorized design functions of the action research tools with what we observed of their use in real practice settings. As Moll (2000, p. 261, citing Scribner) argued, in order to “mediate between an interpretation of theory and the development of practice,” it is necessary “to do considerable theorizing, including the development of model systems, both in the sense of an analytic-investigative device and as visions of desired states of affairs.” Our interest in deciphering the

conditions that promote the desired state of affairs of racial equity as a standard of practice motivates us to engage the complexity of data use for sustained organizational change.

Limitations. This study focuses on the experiences of a hand-picked and self-selecting group of participants and, therefore, its findings are limited relative to leading organizational change imposed without this type of initial buy-in by. OMU team members were already doing equity work and were motivated to engage in the process by their prior experiences. They were selected to participate in the Equity Scorecard process for those reasons. Further, five of 12 OMU Equity Scorecard team members did not participate in this study. The experiences and perspectives of those five who did not participate may have differed markedly from the seven team members who did.²⁰

In considering the limitations of this study, it is also important to note that staff members in higher education and “‘ordinary’ workers” in other types of organizations (Lee & Roth, 2007, p. 96) are integral to organizational change. Yet, our OMU case narrative revolves around faculty and administrators, and the study sample included only one staff member. The case narrative revolves around academic and curriculum policy change, an aspect of the Equity Scorecard implementation at OMU in which the staff member was less involved. Therefore, the case provides little insight into the experiences of staff members during organizational change processes.

Results: The Story of Data Use at Old Main University

We present our story of data use at OMU in two parts. The first part of the case narrative describes how the OMU evidence team used Equity Scorecard tools, including data disaggregated by race and ethnicity, an inquiry protocol for collecting qualitative data through peer interviews, and the team structure itself to complete an inquiry cycle focused on student access to the university. We show how team members used these tools to make changes in their social interactions. These results demonstrate change in the interpersonal plane. They are illustrated by Figure 1, a triangular diagrammatic heuristic frequently employed²¹ in studies that use the six CHAT elements of a cultural activity system to examine organizational change: (1) subjects, (2) instruments/artifacts, (3) rules, (4) community, (5) division of labor and (6) object (Engeström, 1987, Figure 4.4).

²⁰ We note too that none of those faculty who participated were in science, technology, engineering, or mathematics (STEM) fields, though these fields were represented among team members. Those who did participate were in applied, professional, social sciences, and humanities fields. The perspectives and cultural practices of STEM faculty are known to differ from faculty in other fields (Austin, 1990); the involvement of STEM faculty in the case study results may have produced different findings.

²¹ A sampling of published works that utilized the activity triangle diagrammatic heuristic in presenting results include those referenced in this study by Lee, 2011; Orland-Barak & Becher, 2011; Roth & Lee, 2007; Stillman, 2011; Yamagata-Lynch, 2007.

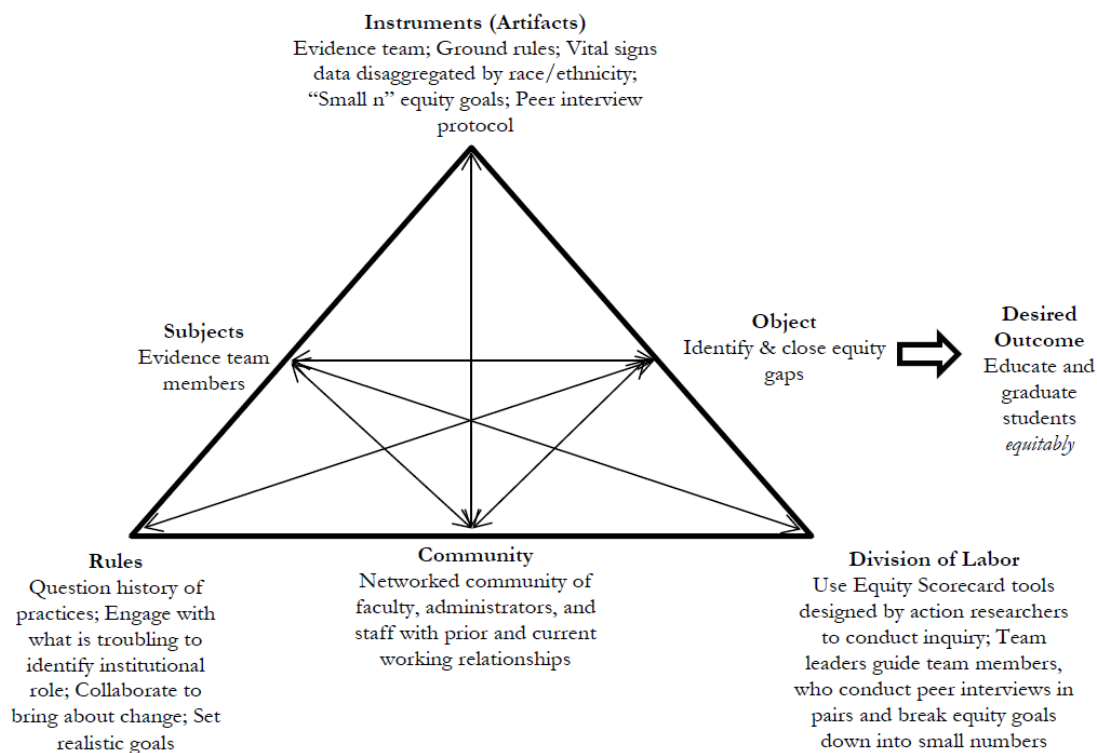


Figure 1. The Activity System of the OMU Evidence Team

The second part of the case narrative describes what the OMU evidence team members learned and did during their second cycle of inquiry. At that point in their inquiry process, the evidence team members were engaging in change in the institutional plane. As we show in the results, they took steps to change institutional policies that they believed were creating racial inequities in student retention and graduation. After discovering during the first inquiry cycle that the academic status of the “undeclared major” (UDM) disproportionately inhibited the degree progress of African American and Latinx students, they collaborated to involve department chairs in the inquiry process through a data-use professional development workshop. They believed that department chairs had authority to enable greater numbers of African American and Latinx students to move more quickly into more resource-rich advising situations enjoyed by students with declared major fields of study.

As we show, this effort realized important gains, but also faced cultural and political barriers to further progress. The reform effort involved using cultural artifacts introduced to team members in the setting of the Equity Scorecard evidence team in a new setting, where the team members took on a new role. They aimed to encourage department chairs to incorporate equity as a standard for reviewing internal admissions criteria to major fields of study. In particular, departments that used SAT scores as a criterion for entry to the major, which were called “restrictive admissions” departments, were asked to examine the equity impacts of the use of SAT scores for this purpose.

The results of part 2 of the case narrative are illustrated by Figure 2. To illustrate the CHAT-based theoretical expectation that organizational change is most likely to occur when disturbances arise through the interaction of two or more activity systems, Figure 2 reproduces the depiction of the activity system of the Equity Scorecard team on the left side of the diagram and adds the interacting activity system of academic departments at OMU on the right side.

Activity System of OMU Evidence Team

Activity System of Academic Departments

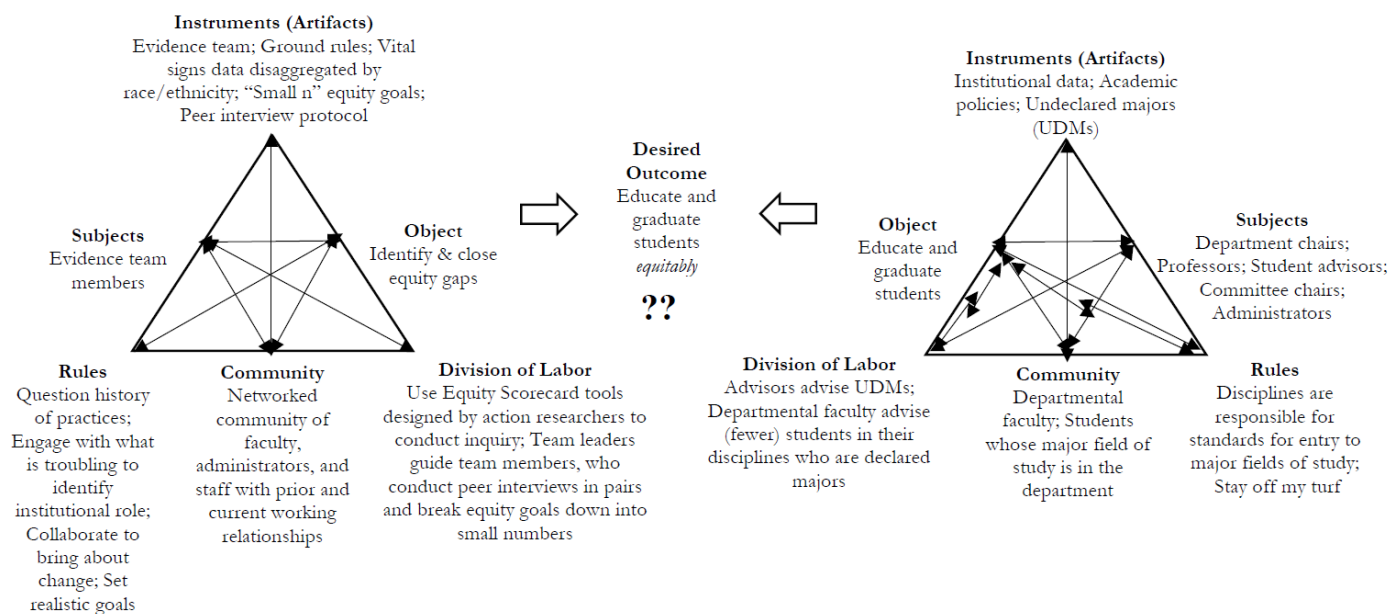


Figure 2. Interacting Activity Systems of the OMU Evidence Team and Academic Departments

Table 1 lists the Equity Scorecard artifacts that interview participants referenced in their interviews or that appeared in documents they provided to us. In addition, field-based artifacts such as the names of initiatives being carried out by national higher education associations are listed to illustrate the context of policy and educational reform in this setting.

Dr. Owen Walker, a Black faculty member and department chair, and Dr. Theresa Sample, a White faculty member, serve as the main protagonists of our narrative. We decided to feature them in this synthesis of data collected from all OMU participants because both were involved in planning and hosting the central event of narrative (the data workshop for department chairs). As a department chair, Owen Walker implemented the academic policy and curriculum changes he hoped other department chairs would enact. During the period of our case study, he later took a more senior administrative role and was involved in restructuring curricular opportunities for undeclared majors institution-wide. Although also a faculty member, Theresa Sample’s role differed from Owen Walker’s because she was responsible for advising undeclared majors, who do not have a departmental home where they can access faculty in academic disciplines. Further, Dr. Walker and Dr. Sample were paired up to conduct inquiry during the qualitative data collection phase of the Equity Scorecard. Their collaboration, which involved learning from each other’s different roles and responsibilities, illustrates how the team structure and inquiry process helped remediate the division of labor in student recruitment and admissions at OMU.

First Cycle of Inquiry: Interpersonal Change

In results that follow below, we show how the team members used Equity Scorecard inquiry protocols for analyzing numerical and qualitative data, such as the peer interview protocol and vital

signs, to break equity goals into manageable, “small n” numbers. These artifacts are indicated at the top of Figure 1.

Inquiry was guided by protocols and case examples. The statistics that the team members had reviewed representing access to the college showed that there were racial equity gaps in recruitment and admissions. The acceptance rate for African American applicants was 15 percentage points lower than the average for all groups. To learn more about recruitment and admissions practices at OMU, Owen Walker and Theresa Sample arranged to conduct interviews with the director and staff of the admissions office, using a peer interview protocol provided among the Equity Scorecard inquiry tools. Based on examples of inquiry findings and recommendations reported from previous Equity Scorecard teams at other universities, the OMU team also decided to review incomplete student applications for admission. Prior inquiry findings showed that a variety of institutional practices could be changed to improve application completion rates by African American applicants. As indicated on Figure 1, the team members were guided in their inquiry process by Equity Scorecard tools and case study examples to determine how to proceed, drawing directly from available resources and initially engaging in similar activities.

Describing the Equity Scorecard protocol for conducting the peer interviews, Owen Walker’s remarks illustrate the ways that the evidence team used the protocols provided to structure the inquiry process and to learn from it. Here he recalls the importance of being paired with another team member by team leader Alejandra Castillo, who was guided in this step by the peer interview protocol provided by the action researchers.

We interviewed and took notes and then if this didn’t make sense ... we’d follow up. So, I thought that was really effective to work with someone. We felt like we were both in the same boat and we were kind of learning together. So, again, I don’t know if that was something Alejandra did, or if that was something they were told to do, but I thought that was really good. That was really kind of a system that we used throughout, because as we had to move onto other areas we worked in pairs. We worked with different people based upon their interest in things so they would kind of pair us off.

Like many faculty members (and despite being a new department chair), Dr. Walker had little direct knowledge of administrative functions in the admissions office and in many areas of student services. During the inquiry process, it became clear to him that team members held different pieces of the puzzle when it came to making sense of the University’s admissions criteria, understanding who held responsibility for advising and retaining students, and finding out what resources were being employed in different areas to improve retention and completion rates.

As Owen Walker’s partner during the first phase of inquiry, Theresa Sample brought different knowledge and expertise to the interviews they conducted together. A perceived risk of being “out on your own” in asking admissions personnel about “their” process was lessened for Dr. Walker by being paired with a partner to conduct the interviews. Not only was the information gathered through the peer interviews technical and detailed, stepping onto someone else’s turf is tricky. The evidence team itself was a structure that acted as a cultural artifact to give legitimacy to the questions team members were asking about admissions practices. The collaborative nature of the inquiry process structured by the Equity Scorecard enabled Dr. Walker to gain operational knowledge of admissions policies and practices at OMU. The interview protocol, which emphasized that the peer interviews were designed for organizational learning, guided him when he initially encountered a resistant response from admissions staff members.

We have so many different units and I think our units are used to working but not working across. Units are used to working like, whoever is your VP. I think there was, especially for me being [an] academic coming into Admissions, I think there was like, “Okay who are these people,” you know what I’m saying? “They are on our turf.” I thought after a couple of times, I think people were a little more open then realizing we weren’t trying to come in and say everything you are doing is bad, we are just trying to see if there is any way we can help you in your process.

The words *turf*, *bad*, *come in and condemn* stand out in the narrative above communicating the sense of risk that Dr. Walker experienced in the early stages of the inquiry process. To mitigate that risk, he actively used the Equity Scorecard artifacts of the “evidence team” and “peer interview” to reposition what might have been viewed as a conflictual situation as an opportunity for collaboration. As annotated on Figure 1 (lower right corner), these artifacts enabled initial negotiation of a new division of labor.

Inquiry leads to a new division of labor in recruitment. Although requesting a peer interview seemed to counter standard norms of practice, Owen Walker’s initial worry about treading on the turf of another unit gave way when admissions officers realized that the evidence team’s inquiry findings could (and ultimately did) garner additional resources for their office. Disclaiming any interest in “condemning” the work of the admissions office, Dr. Walker emphasized:

I thought that was helpful to this project to realize we are trying to work together. We are not trying to come in and condemn people ... no we just wanted to learn about the process: What could be done more effectively? And then when they saw some things, “Okay, wow. Here are some results.”

By positioning the evidence team’s inquiries in a positive light, Dr. Walker developed new relationships with staff members in the admissions office. A staff member from the admissions office would now call him from time to time and ask, “Hey, Owen there’s a student who is right on the borderline,” should we admit him? “Before, they might not have done that,” he noted. “Now, if they have questions about certain things they know people over here,” he explained, “and if we have questions – you know what I’m saying [we ask them].”

The new relationship between admissions officers and Owen Walker continued and grew over time. For example, admissions staff asked him to accompany them to an informational event for potential transfer students. The inquiry process brought Dr. Walker into a new working relationship with Dr. Sample and more productive communication with staff members in the admissions office. The division of labor among them was changed in ways that enabled them to work together to recruit and admit African American and Latinx students.

Overall the inquiry into college access at OMU, including equity gap formulations, the peer interviews, a web scan of application instructions on the OMU web site, and a review of incomplete applications, provided information for equity goal setting that was specifically grounded in the admissions offices current practices. The interactive processes of inquiry and the team members’ findings, report, and recommendations held potential to improve racial equity at OMU. For example, an additional admissions officer was hired with specific responsibilities to reach out to African American and Latinx communities and students. Further, a new policy was implemented to proactively waive admissions fees instead of leaving incomplete applications to languish, a practice that had a disparate negative impact on African American and Latinx students.

The evidence team also recommended that the administration adopt an equity goal of cutting the admissions gap by two-thirds and increasing the number of African American students

admitted annually by nearly 100 students. The action steps recommended by the evidence team to achieve this goal included enhancing the use of social media, holding admissions sessions in churches and community centers, reducing jargon in application materials, providing easy access to financial aid calculators on line, and distributing recruitment responsibilities across the entire recruiting staff instead of relying on a “multicultural” recruiter. With team members representing diverse offices and functions of the university and the team leaders acting as “boundary spanners” (Bensimon & Harris III, 2012) with connections across the university (see Table 1), the team’s recommendations also took a broader view beyond the admissions function. They highlighted the need for coordination among the offices of financial aid, new student orientation (new students and transfers), departments, institutional research, and the office of multicultural affairs.

Finally, the team also called attention to the role that the use of SAT scores played in reducing admission rates for African American applicants, whose SAT scores were below the average of the OMU application pool. They recommended that the use of holistic admissions, which was already being utilized, be reviewed with consideration of alternative admissions criteria. As we show in the next part of our findings, SAT scores resurfaced again as a cultural artifact of practice that contributed to racial inequities in retention and graduation rates.

Second Cycle of Inquiry: Institutional Change

The second cycle of inquiry began for OMU’s evidence team as the first one had, with review of data, disaggregated by race and ethnicity, representing student retention (first-to-second and second-to-third year) and six-year graduation rates. OMU’s institutional researcher worked with team members and explained the data until members began to have a better understanding of retention and graduation rates for various groups. Reviewing the data during evidence team meetings, team members found that the second-to-third year retention rates for African American and Latinx students lagged that of counterparts with other racial and ethnic characteristics by five percentage points and that graduation rates were lower by 12 percentage points.

As shown in Figure 1, equity goals are an important artifact of the Equity Scorecard evidence team activity system. Owen Walker described how the team set annual goals to eliminate the equity gap in retention rates over a three-year period. Here referencing the statistics for African American students, he highlights the small numbers of students—“a jump of 10 students”—who would need to be retained to achieve higher and equitable retention rates.

The average is 50% and that’s not very good. But moving it up to 54 by 2014--so you are talking about a jump of 10 students. It’s seemed like we should be able to do that. Then it goes up to 60% by 2015 and projected to 2016 we go up to 65%. So, you are talking 20 students in that time. That shouldn’t be...but it really makes a difference percentage-wise.

Dr. Walker went on to explain that the team was interested in setting equity goals that were “realistic” and “achievable.”

I think the idea was we were trying to, trying to set something realistic. We were trying to think of something that would be a realistic goal that we could actually achieve on campus. I can’t recall who was influential in that, but I do remember that was something that was achievable and I remember someone said, “Hey this is not that many. We can do this because when you think about it from a numerical value it’s not that many students.” I remember those two critical pieces come into play when we were discussing it.

At this point in the inquiry process, the OMU team was using the Equity Scorecard data analysis tools, the Equity Scorecard report, and the “power of simple numbers,” all of which had been utilized by previous evidence teams in other college settings, to inform their work (Dowd et al., 2015, p. 183). As team members in other university settings had previously, OMU team members found this process of breaking down the numbers and setting concrete goals to be motivating. This motive of the activity of the Equity Scorecard evidence team is reflected in Figure 1 as the “object,” or shared sense of purpose, of the activity: “identify and close equity gaps.” As we turn to Figure 2, this changes. Producing equitable student outcomes was not a motive of activity of academic departments across the whole university.

Identifying the critical disturbance of the undeclared major. While the team was looking at retention data, Theresa Sample, who was an academic advisor to students in undeclared majors, pressed to obtain data showing the transitions of students from undeclared- to declared-major status. The focus that emerged among OMU team members on what we came to view as the “critical disturbance” of the undeclared major was a pivotal aspect of the Equity Scorecard implementation at OMU. At this junction, the OMU team began to develop new strategies and artifacts for organizational change that were similar but not identical to models provided by earlier Scorecard implementations. This transition reflects the ways that the evidence team members were learning from the structured inquiry process of the Equity Scorecard to learn on behalf of their institution.

Students who “did not count at all.” Given her advising responsibilities, Theresa Sample was most familiar with the academic trajectories of undeclared majors. She indicated that 40% of each entering class was in what she called the “no man’s land” of the pre-major. Approximately one-third of those students were students of color, a proportion nearly double the share of students of color at the university. In comparison, the proportion of students of color in the department led by Owen Walker was about 6%. According to Dr. Sample, students caught in the “no man’s land” of the undeclared major were invisible in the university’s performance indicators to such an extreme extent that they did “not count at all.”

With Theresa Sample’s advocacy and the help of the institutional researcher, the OMU team was able to examine disaggregated data on access to major fields of study. OMU team members learned that restricted admissions to some major fields of study were creating racial disparities at the university. Some fields required an SAT score for admissions to the major that was higher than the score required for admission to the university. The restrictions were having a disproportionate negative impact on African American and Latinx students, who were admitted more often than White students using “special admit” designations and more often placed in undeclared major status. The OMU Equity Scorecard report indicated that relative to White students, the equity gap in admission to a first-choice major was close to 30% for African American students and 20% for Latinx students.

Dr. Liz Michaels, a faculty member who was one of the two OMU evidence team leaders, described the inequitable impact of restrictive departmental admissions on African American students as “really troubling.”

Our African-American students that apply at the University as native students and White students that apply as native students have totally different experiences. Most of the White students get the major that they want. Most of the – at least half of the African-American students don’t. A large percentage of the African-American students end up leaving as ... liberal studies students, and they just don’t have the same major requirements, the same major experience, the same advising experience that a student in the major would and that was really troubling to me. Some of that

has to do with – a lot of that has to do with access and when you get into a major and how you get into a major.

It was “troubling” to Dr. Michaels and other team members that African Americans and Latinos were languishing disproportionately in the undeclared major status. They realized that students were being admitted, taking courses, using up their financial aid eligibility, and accumulating student debt, but not being admitted to a major.

The inequitable nature of this arrangement was evident in the university’s use of advising resources and in student success rates. Fewer advising resources were provided to students in pre-major status than to students enrolled in majors. Undeclared majors had access to specially designated advisors; however, they lacked a departmental home and benefited from fewer advising resources. As noted on Figure 2 (right side) as a “division of labor” of importance to this case, the advising load of faculty who advised pre-majors was much greater (up to 10X) than that of faculty who advised students majoring in a field of study within their department. Compared to students with pre-major status, declared majors benefitted from closer interactions with faculty, for example through advising workshops and opportunities to do research. They also enjoyed extracurricular activities through academically focused clubs, teams, field trips, career-oriented outings, and hosted events with guest speakers.

Policies that restricted the number of credits some categories of special admit students could take to only 12 credits, rather than the more typical 15, were creating difficulties for special admit students later on (because they then lacked courses to complete field of study, general education, and graduation requirements). By looking at the data further disaggregated by different cohorts of students admitted under a variety of special admit programs, the team members could also see that when students with relatively low SAT scores were provided with tutoring and academic advising, they were retained and graduated from OMU at the same rates as students admitted under the regular admissions policies. Team members concluded that the OMU’s academic policies were problematic. Undeclared majors persisted and graduated at lower rates than those who entered into a major in their first year. This was primarily due to low credit accumulation and the internal SAT admission requirements rather than to low grades or the capacity of students who were admitted with relatively lower SAT scores to complete course requirements successfully.

Owen Walker, himself the chair of a restrictive admissions department, observed that the restrictive admissions requirements for his department had not been questioned previously and probably “made sense at the time” they were created. As a relatively new department chair, he couldn’t say why those standards had been adopted. “A lot of them were historical,” he said. “They were just set at a certain time and that’s what it was.” He agreed the standard had to change because his department was “rejecting a lot more people than we accept.” As artifacts of practice, the institutional policies governing admission to the major (noted on Figure 2, right side) were ones that could be changed to create more equitable practices. These artifacts of practice—in this case, academic credit accumulation policies, internal admissions criteria, and course pre-requisites for entry into a major field of study—had a forgotten history that made the existing inequitable admissions policies seem normal.

Questioning and disturbing norms of practice. The inquiry process brought restrictive departmental admissions into view as an inequitable practice²² that was reproducing racial segregation within the university. We term the team’s recognition of the problem of the undeclared major a “critical disturbance” in practice, because the root of the problem was not merely technical.

²² Under the principle of vertical equity (DesJardins, 2003), if resources are allocated unequally, greater resources should be directed towards those with greater educational needs.

Activity theory predicts that when practitioners experience contradictions in their practice, the existing motivation of a system can be brought into view. “Critical disturbances,” which are defined as “deviations from the normal scripted course of events in the work process,” can be productive during planned change because they bring “explicit rules” and “tacitly assumed traditions” into question (Engeström, 2008, p. 24). Unlike technical disturbances, which can be addressed through changes in organizational functioning, critical disturbances must be addressed at the level of values and meaning-making about an organization’s purpose.

The critical disturbance of the undeclared major, faced by the evidence team members, called into question the rules and traditions governing access to fields of study. As at most institutions, academic policies at OMU were guided by meritocratic values about who deserves access as a college student and the designation of a college graduate conferred by a degree. This critical disturbance is represented as an organizational dysfunction on Figure 2 by jagged lines between the rules of “stay off my turf,” the division of labor that created disparate advising resources for declared and undeclared majors, and the object and desired outcome of the evidence team of educating and graduating students equitably.

Although the object, or motivating sense of purpose, of the evidence team members was to identify and close equity gaps, as indicated by the question marks between object and outcome in the activity system of department chairs on Figure 2, the two activity systems were not acting in concert. The rules and the division of labor that separated departmental advisors from those faculty who advised undeclared majors might work well enough to educate and graduate students, but not to do so equitably. The values that had created these rules and division of labor would need to be questioned by the chairs to remediate a system that was producing inequities. This would require looking at common artifacts of practice, such as institutional data, academic policies, and the very concept and status of the “undeclared major” itself, with new eyes.

In their Equity Scorecard report, the evidence team members recommended that OMU take steps to incrementally eliminate the equity gaps in retention and graduation rates over the next several years with a major focus on improving equitable access to major fields of study. A first step the team took toward their equity goals was to host a workshop with department chairs to involve them in revising their academic policies governing access to major fields of study. Team members wanted to share the data and inquiry findings that had brought the “troubling” status of undeclared majors to their attention with the chairs. They aimed to expand the number of people who were taking a critical look at internal, restrictive admissions policies. As Liz Michaels expressed it, “if nothing else comes out of that workshop but that 10 out of 30 majors are starting to think about access in a different way, I think we’ve accomplished something big.”

Remediating inequitable practices in access to majors. To address inequities in access to major fields of study, Drs. Alejandra Castillo, Liz Michaels, Theresa Sample, Owen Walker and Diane Stone (another faculty member on the evidence team, see Table 1), planned and held a workshop for department chairs to bring the problem of the racially segregating “no man’s land” of the undeclared major to the attention of the chairs. The three-hour workshop, which was held in a seminar room on campus, attracted 26 participants and used tools adopted and adapted from the inquiry process experienced by the evidence team members. To initiate a peer mentoring model, the five team members who were hosting the workshop dispersed themselves among four meeting tables, which each sat six to eight participants. An evidence team member was assigned to each chair as a peer coach.

The workshop got underway with words of welcome from evidence team leader Dr. Alejandra Castillo and Dr. Margaret Knight, the senior administrator who had convened and charged the team. Then team leader Liz Michaels used PowerPoint to present sample data tables and

describe the inquiry process the chairs were being asked to undertake. Participants were provided with a packet of data and inquiry protocols from the Equity Scorecard. The packet included data tables, “equity gap” worksheets, an “asset mapping” diagram for brainstorming available resources to address a “focal effort,” and a template for summarizing and reporting equity gaps in narrative form (for examples of these types of data use protocols, see Bensimon et al., 2012; Bensimon & Hanson, 2012; Witham et al., 2015). The data tables represented student retention and six-year graduation at three levels: university, college, and department. In addition, the packet included an “All-In for Equity” sticker that was to serve as a symbolic representation of the participant’s completion of the training session—something they could display as a public commitment to equity.

Participant reactions were mixed. Many were engaged in reviewing data, completing the data worksheets provided, and taking notes. Questioning was active throughout the workshop, with a lengthy discussion about where to obtain the data showing access to majors and debate about whether the data were already available disaggregated by racial and ethnic groups. As our field notes show, some participants reacted skeptically to the purpose of the workshop: “What’s the bottom line?” one asked, “just tell me what I need to do.” Another chair rejected the equity framing altogether, stating that the problem was entirely at the high school level. “It’s all about the high schools these students come from, all the URM [underrepresented minority] students come from inner-city high schools and aren’t prepared, so why are we looking at these data?” Rather than engage this point-of-view within the limited time of the workshop—one that was likely held by other participants as well—Alejandra Castillo had a side conversation with the dissenting chair.

Difficulties implementing a learning design. The workshop was an active attempt to acculturate chairs to inquiry and equity as accepted standards of practice. The team members adopted and adapted the Equity Scorecard materials as cultural artifacts appropriate to their own setting. In many ways, the workshop design represented an extension of the evidence team’s inquiry process; in others, it differed. As is noticeable from the remarks of the dissenting participants, the rules and division of labor experienced by evidence team members of collaborating to question and produce knowledge about the institutional role in producing inequities was not a defining feature of workshop interactions. Team members used terms such as “equity gap,” which are cognitive tools for discussing equity. However, the short time-frame and full workshop agenda did not leave much time for the kind of dialogue about the meaning of equity that evidence team members had engaged in during Equity Scorecard meetings. The artifacts, norms, and motive of the evidence team setting and the normative academic department meeting were different, constituting them as activity systems with different cultural practices.

The discussion of each concept, data table, and inquiry tool was highly compressed. The selection of Equity Scorecard protocols that had been included in the packets had been introduced for use to team members over a period of months, not in a few hours as they were presented hurriedly to chairs. Also, there was no evidence team structure or immediate plans for additional interactive discussions about the data. Whereas the evidence team members were drawn to participation by their existing relationships and collegial networks with others on the team, the invitation issued to the department chairs, through the deans, was hierarchical rather than collegial. The lack of a networked or interactional design was also evident in that department chairs received their own departmental data and were not organized into team or work groups for future data discussions or action planning around policy changes.

Finally, the department chairs received a small stipend and in return were asked to sign a contract. The contract stated that the chairs were expected to use data to identify equity gaps in access and retention in their majors, write a report describing an inquiry plan to understand the institutional cause of those gaps, and generate at least one recommended action step based on what

they learned. These were all familiar strategies of the inquiry design, but for the chairs, the accountability provisions of the contract may have recast the inquiry process as a contractual obligation, rather than as an opportunity for professional development and learning. These differences in the design of the inquiry process of the evidence team and the workshop design reflect the challenges of incorporating the lessons of long-term (mesogenetic) change projects carried out in multiple institutional settings in a particular, local setting of practice (microgenetic).

Despite the difficulties of spreading the knowledge, practices, and goals they had acquired through inquiry, by the time of our member check interviews held sixteen months after the workshop for department chairs, many department chairs had responded positively to the change effort. One-quarter (Theresa Sample's estimate) to one-third (Owen Walker's estimate) of the departments that had had restrictive admissions to the major had changed their policies or had begun the process of doing so by submitting changes to the curriculum governance committee for approval.

These results demonstrated the important yet partial success of the evidence team's efforts. Our member check interview with Owen Walker shed light on why these changes would take so long and why a sustained change effort would be required to advance the team's equity goals. Dr. Walker's departmental faculty colleagues had met and then worked to revise their curriculum to create prerequisites that would allow any new student to enter their major. These changes were still working their way through academic governance, having been sent for review and approval by the university curriculum committee. Dr. Walker's department also had to address a number of administrative and faculty division of labor issues. For example, they had to determine the number of course sections to offer once the major began enrolling larger numbers of students and how to distribute the teaching load.

Efforts to sustain organizational change over time. Three years after attention to the problem of racial disparities in access to major fields of study first crystalized, the curriculum changes that were underway represented partial progress. Relative to Liz Michaels' goal of making changes in at least 10 departments, the organizational change efforts of the evidence team had produced "something big." However, a majority of departments with restrictive admissions had not yet taken steps to change their policies. During our member check interview with Theresa Sample, she feared that many department chairs had only given "lip service" to their interest in equity. To sustain their change effort, prior to and after the workshop, team members made changes in other routine work interactions and artifacts at multiple levels of university functioning. They used a variety of approaches to do so. Some of these approaches were based in principles of inquiry. Other approaches were regulatory, creating required forms and reports; and still others were market-based, creating incentives that might act to overcome indifference, inertia, or disagreement with the goal of institutionalizing equitable practices.

To institutionalize attention to the role academic policies played in segregating students by major fields of study, Alejandra Castillo used her position on an academic policies committee to revise a curriculum form that departments were required to complete when they adopted or retained restrictive admissions practices. Dr. Castillo explained:

As people came [to the committee] to present changes to their programs, then we started asking, I started asking questions that say, "So where's your assessment for this, how is this going to impact pre-major [field of study] students, how is this going to impact [racial] minority students?" So, we started asking these questions that hadn't been asked before.

Dr. Castillo, having redesigned the form as a remediating artifact of practice, believed that it was becoming “part of the norm for us to ask [these] kind of questions.” In addition, the committee created a rubric to show chairs how their requests for special admission or graduation requirements would be evaluated by the committee. The aim was to disturb the assumption that the existing policies were legitimate.

Institutional assessment practices involving the use of disaggregated data also changed. Prior to the inquiry process, data on the persistence and graduation rates of students who started out as pre-majors were not systematically recorded or made available to pre-major advisors like Theresa Sample or to advisors in the departmental majors. Through the inquiry process, OMU’s institutional researcher programmed reports for the evidence team that subsequently became routinely available to Dr. Sample and to department chairs.

At the institutional level, Margaret Knight, Owen Walker (who over time moved from the position of department chair into a role in central administration), and Gary Young took additional actions. These leaders created a funding incentive for departments to carry out inquiry projects similar to the ones that had been carried out by the evidence team members. This incentive carried the requirement of an annual report, using disaggregated data, to monitor the effects of changes in departmental policies on student enrollment in majors. Dr. Knight also charged the deans with reaching out to department chairs to encourage them to examine their policies for admitting students to majors. Where SAT and high school GPAs were being used to create internal barriers to students’ enrollment in majors, the department was required by the academic affairs office to identify admissions criteria that would be accepted as alternatives to SAT and GPA scores.

The team’s recommendations were also embedded through purposeful steps by an evidence team member into the university’s strategic plan and accreditation self-study report. Resources were redirected to improve student advising for those who were in undeclared majors and the previously ambiguous structure of the liberal studies major. Liberal studies, which housed undeclared majors, became more like a departmental major in terms of its institutional structure and identity, thus creating a workaround to the power of the chairs to restrict resources from students they would not admit. A position was created and a faculty member appointed to act as the head of liberal studies. This person was then charged to bolster the academic experience of students in that major.

These results demonstrate how the OMU evidence team engaged in a deliberate process of learning on behalf of their university. During an initial cycle of inquiry, team members learned when, how, and why institutional policies were disadvantaging African American and Latinx students. During the second cycle of inquiry, they strategically used and adapted designed artifacts of practice from the Equity Scorecard and from their everyday work (e.g. governance forms) to create opportunities for their colleagues to engage, as they had, in “knotworking” around racial equity issues (Engeström, 2011, p. 147; Roth & Lee, 2007, p. 212). Knotworking involves collaborative, coordinated, and long-term efforts to learn about and resolve critical disturbances of practice.

As illustrated in these results, it is first necessary to understand the nature of the problem to be untied, a task which itself requires new forms of collaboration among professionals with different types of expertise whose work is primarily located in distinct systems. The inquiry method produced positive results relative to the team’s equity goals, but it was not equally effective to motivate participation by all of those who would be needed to fully institutionalize the change process. Therefore, team members complemented their use of inquiry methods and data tools with regulatory and political strategies. This left open the opportunity for sustained, institution-wide learning and change to occur, because faculty and administrative leaders were coordinating and learning from their change efforts over time.

Discussion

Our findings contribute to the literature on organizational learning by showing how individuals learn on behalf of their institutions to spread and sustain a change process throughout multiple activity systems over time. CHAT addresses issues of temporality in organizational development by emphasizing that change occurs in four dimensions: “the evolutionary (long-term societal or species change), mesogenetic (long activities or projects), ontogenetic (development over a person’s lifetime), and microgenetic (everyday interactions)” (Lee, 2011, p. 413; see also Parsons & Bayne, 2013, p. 155). Prior studies show that many practitioners who engage in inquiry using the Equity Scorecard experience ontogenetic changes, coming to see themselves as institutional change agents and acquiring a critical consciousness around equity issues (Bishop, 2014; Dowd & Bensimon, 2015; Dowd et al., 2015; Felix et al., 2015). These studies show that individual change agents find it challenging to institute microgenetic changes in the multiple activity systems of an institution that must be changed in order to have an institution-wide impact. In this study, we illustrated how planned microgenetic change can be strategically facilitated by mesogenetic (long-term) change projects.

Microgenetic change. Recent studies on sustained change carried out in communities of practice (Felix et al., 2015; Gehrke & Kezar, 2017; Lester & Kezar, 2017; Robinson-Armstrong et al., 2012) emphasize that local reforms have the greatest staying power when they involve multiple change agents in a variety of leadership roles over time. They are most impactful when leaders have the ability to combine technical knowledge of reform goals and methods with communication competencies that are essential to motivate attention among those outside the core group of change agents. Our study adds to these findings by showing that those communication competencies are significantly aided by the capacity to design artifacts of practice and learning structures to involve new entrants in the change process.

Practitioner inquiry is an approach to planned change that supports individual and organizational learning, something the OMU team members experienced directly. As they set out to involve others in inquiry, they discovered that they needed to create learning structures and use political and regulatory strategies to entice the participation of their colleagues in opportunities to learn about equity. While we might like to think of planned change as a “vertical” process of development, as Engeström points out (2011, p. 153), much organizational learning proceeds in a “horizontal or sideways” manner. The sideways steps OMU leaders and evidence team members took to sustain change therefore involved creating what Witham (2014) calls “learning structures,” defined as “contexts of practice in which the object of shared activities is to ‘learn’ with respect to a particular goal” (p. 107). OMU evidence team members and leaders carried out a sustained effort to produce organizational learning and change towards racial equity by using artifacts of practice that they adopted and adapted from long-term projects outside their own practice setting.

Mesogenetic change. Through this case study, we gain a view of the value of the mesogenetic change projects of action research and accountability for racial equity. If change agents are not part of initiatives that actively link across time, settings, and people, they may struggle to see their own efforts as part of a meaningful change process. They may also feel—and often it is likely to be true—that the time horizon needed to create an equitable institution is longer than the time they will spend at the institution. Any change in a work routine or artifact can be countered by actors pursuing a different agenda. By utilizing accountability resources in and outside of the designed activity system, practitioners can move more adeptly to create remediated activity systems in their regular work practices.

The local reforms in the field setting of this study were supported by the sustained and iterative mesogenetic change efforts of the Equity Scorecard and of the state university system's accountability policy, which included equity performance metrics. The accountability policy provided time and tools for organizational learning to occur at the institutional level. For the OMU team members, using inquiry tools that had been field tested in other settings was like tapping into a storehouse of experiential knowledge about the conditions of data use that mitigate the risks of acting as an agent of change for racial equity. Like the Equity Scorecard designers, they too engaged iteratively in cycles of action and inquiry, redesigning the cultural remediation strategies they had experienced as they sought to involve others on their campus.

Conclusion

Keeping the diversity of activity systems in mind, it is not surprising that change agents in colleges and universities find it difficult to spread new practices broadly across their institutions. Conflicts ensue when change initiatives emerge in new activity systems. Kezar (2011, p. 238) argues that systems change in higher education occurs “from the bottom up, slowly, through the deep engagement of people over time.” And, it is this form of change that has been “embraced by higher education institutions over the years” (p. 239). This case study provides an example of a sustained, coordinated, productive, and consequential organizational change to improve racial equity. In a time and place where few such examples exist, this is a hopeful case.

The findings of this study demonstrate the importance of three main conditions of data use that should be cultivated if stakeholders wish to foster change towards racial equity. Towards that aim, data use is productive when (1) it is mediated by cultural tools designed to promote inquiry about equity as a standard of practice; (2) when data discussions take place in a time and space where practitioners can grapple with the institutional role in producing racial inequities; and (3) when change efforts are carried out in an iterative manner to enable discursive and data tools to be redesigned for use in new settings. These features of professional learning imply that the most productive accountability data will take many forms and that the highly aggregated, top-level metrics of interest to policy makers and the public (e.g. institutional graduation rates) are not useful for organizational learning.

Finally, although policy makers and institutional change agents may not want to contemplate the temporal aspects of change discussed in this article, they should. Their own progress towards the reforms they desire are likely to be partial and halting, or to come undone by the counter-actions of others. Planning for change with the expectation that leadership turnover, political shifts in resource and time use, and one's own departure might occur highlights the necessity of bringing new people into the change process in an ongoing manner. With this in mind, equity advocates on campus and in positions where accountability policy is instituted should design professional development opportunities for new participants to experience and learn from the use of data and performance indicators. To sustain a focus on equity, accountability initiatives should build in time and create structures for professional learning about racialized patterns of educational participation.

Acknowledgements

We would like to thank other members of our research group— Estela Mara Bensimon, Cheryl Dy Ching, Joanna Drivalas, Branden Elmore, Marlon Castro Fernandez, Debbie Hanson, and Keith Witham—for rich discussions and collaboration in data collection, analysis, and interpretation across the many strands of this study. In addition, we benefitted from discussion in the early phase of this

study with advisory group members Michael Bastedo, Stella Flores, David Longanecker, John Morgan, Anna Neumann, and Dominique (Domy) Raymond. Estela Bensimon, Cheryl Ching, Leslie Gonzales, Anna Neumann, Ali Watts, and anonymous reviewers provided valuable feedback on earlier drafts of this paper, for which we are grateful.

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education policy analysis archives

Volume 26 Number 65

May 21, 2018

ISSN 1068-2341



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