

# The Analytics Revolution In Higher Education

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## The Analytics Revolution in Higher Education

Co-published with and In this era of “Big Data,” institutions of higher education are challenged to make the most of the information they have to improve student learning outcomes, close equity gaps, keep costs down, and address the economic needs of the communities they serve at the local, regional, and national levels. This book helps readers understand and respond to this “analytics revolution,” examining the evolving dynamics of the institutional research (IR) function, and the many audiences that institutional researchers need to serve. Internally, there is a growing need among senior leaders, administrators, faculty, advisors, and staff for decision analytics that help craft better resource strategies and bring greater efficiencies and return-on-investment for students and families. Externally, state legislators, the federal government, and philanthropies demand more forecasting and more evidence than ever before. These demands require new and creative responses, as they are added to previous demands, rather than replacing them, nor do they come with additional resources to produce the analysis to make data into actionable improvements. Thus the IR function must become that of teacher, ensuring that data and analyses are accurate, timely, accessible, and compelling, whether produced by an IR office or some other source. Despite formidable challenges, IR functions have begun to leverage big data and unlock the power of predictive tools and techniques, contributing to improved student outcomes.

## How Colleges Use Data

What does a culture of evidence really look like in higher education? The use of big data and the rapid acceleration of storage and analytics tools have led to a revolution of data use in higher education. Institutions have moved from relying largely on historical trends and descriptive data to the more widespread adoption of predictive and prescriptive analytics. Despite this rapid evolution of data technology and analytics tools, universities and colleges still face a number of obstacles in their data use. In How Colleges Use Data, Jonathan S. Gagliardi presents college and university leaders with an important resource to help cultivate, implement, and sustain a culture of evidence through the ethical and responsible use and adoption of data and analytics. Gagliardi provides a broad context for data use

among colleges, including key concepts and use cases related to data and analytics. He also addresses the different dimensions of data use and highlights the promise and perils of the widespread adoption of data and analytics, in addition to important elements of implementing and scaling a culture of evidence. Demystifying data and analytics, the book helps faculty and administrators understand important topics, including: • How to define institutional aspirations using data • Equity and student success • Strategic finance and resource optimization • Academic quality and integrity • Data governance and utility • Implicit and explicit bias in data • Implementation and planning • How data will be used in the future

How Colleges Use Data helps college and university leaders understand what a culture of evidence in higher education truly looks like.

### Big Data on Campus

How data-informed decision making can make colleges and universities more effective institutions. The continuing importance of data analytics is not lost on higher education leaders, who face a multitude of challenges, including increasing operating costs, dwindling state support, limits to tuition increases, and increased competition from the for-profit sector. To navigate these challenges, savvy leaders must leverage data to make sound decisions. In *Big Data on Campus*, leading data analytics experts and higher ed leaders show the role that analytics can play in the better administration of colleges and universities. Aimed at senior administrative leaders, practitioners of institutional research, technology professionals, and graduate students in higher education, the book opens with a conceptual discussion of the roles that data analytics can play in higher education administration. Subsequent chapters address recent developments in technology, the rapid accumulation of data assets, organizational maturity in building analytical capabilities, and methodological advancements in developing predictive and prescriptive analytics. Each chapter includes a literature review of the research and application of analytics developments in their respective functional areas, a discussion of industry trends, examples of the application of data analytics in their decision process, and other related issues that readers may wish to consider in their own organizational environment to find opportunities for building robust data analytics capabilities. Using a series of focused discussions and case studies, *Big Data on Campus* helps readers understand how analytics can support major organizational functions in higher education, including admission decisions, retention and enrollment management, student life and engagement, academic and career advising, student learning and assessment, and academic program planning. The final section of the book addresses major issues and human factors involved in using analytics to support decision making; the ethical, cultural, and managerial implications of its use; the role of university leaders in promoting analytics in decision making; and the need for a strong campus community to embrace the analytics revolution. Contributors: Rana Glasgal, J. Michael Gower, Tom Gutman, Brian P. Hinote, Braden J. Hosch, Aditya Johri, Christine M. Keller, Carrie Klein, Jaime Lester, Carrie Hancock Marcinkevage, Gail B. Marsh, Susan M. Menditto, Jillian N. Morn, Valentina Nestor, Cathy O'Bryan, Huzefa Rangwala, Timothy Renick, Charles Tegen, Rachit Thariani, Chris Tompkins, Lindsay K. Wayt, Karen L. Webber, Henry Y. Zheng, Ying Zhou

### Learning Analytics in Higher Education

Learning analytics (or educational big data) tools are increasingly being deployed on campuses to improve student performance, retention and completion, especially when those metrics are tied to funding. Providing personalized, real-time, actionable feedback through mining and analysis of large data sets, learning analytics can illuminate trends and predict future outcomes. While promising, there is limited and mixed empirical evidence related to its efficacy to improve student retention and completion. Further, learning analytics tools are used by a variety of people on campus, and as such, its use in practice may not align with institutional intent. This monograph delves into the research, literature, and issues associated with learning analytics implementation, adoption, and use by individuals within higher education institutions. With it, readers will gain a greater understanding of the potential and challenges related to implementing, adopting, and integrating these systems on their campuses and within their classrooms and advising sessions. This is the fifth issue of the 43rd volume of the Jossey-Bass series *ASHE Higher Education Report*. Each monograph is the definitive analysis of a tough higher education issue, based on thorough research of pertinent literature and institutional experiences. Topics are identified by a national survey. Noted practitioners and scholars are then commissioned to write the reports, with experts providing critical reviews of each manuscript before publication.

### Building a Smarter University

Demonstrates how universities can use Big Data to enhance operations and management, improve the education pipeline, and educate the next generation of data scientists. The Big Data movement and the renewed focus on data analytics are transforming everything from healthcare delivery systems to the way cities deliver services to residents. Now is the time to examine how this Big Data could help build smarter universities. While much of the cutting-edge research that is being done with Big Data is happening at colleges and universities, higher education has yet to turn the digital mirror on itself to advance the academic enterprise. Institutions can use the huge amounts of data being generated to improve the student learning experience, enhance research initiatives, support effective community outreach, and develop campus infrastructure. This volume focuses on three primary themes related to creating a smarter university: refining the operations and management of higher education institutions, cultivating the education pipeline, and educating the next generation of data scientists. Through an analysis of these issues, the contributors address how universities can foster innovation and ingenuity in the academy. They also provide scholarly and practical insights in order to frame these topics for an international discussion. Jason E. Lane is Vice Provost for Academic Affairs and Senior Associate Vice Chancellor at the State University of New York, Deputy Director of the Rockefeller Institute of Government, and Associate Professor of Educational Policy at the University at Albany, State University of New York.

### Learning Analytics in Higher Education

Gain an overview of learning analytics technologies in higher education, including broad considerations and the barriers to introducing them. This volume features the work of practitioners who led some of the most notable implementations, like: the Open Learning Initiative now at Stanford University, faculty-led projects at the University of Michigan, including ECoach and SLAM, the University of Maryland, Baltimore Countys Check My Activity and Indiana Universitys FLAGS early warning system and e-course advising initiatives. Readers will glean from these experiences, as well as from a national project in Australia on innovative approaches for enhancing student experience, an informed description of the role of feedback within these technologies, and a thorough discussion of ethical and social justice issues related to the use of learning analytics, and why higher education institutions should approach such initiatives cautiously, intentionally, and collaboratively. This is the 179th volume of the Jossey-Bass quarterly report series New Directions for Higher Education. Addressed to presidents, vice presidents, deans, and other higher education decision makers on all kinds of campuses, it provides timely information and authoritative advice about major issues and administrative problems confronting every institution.

### Learning Analytics in Higher Education

Learning Analytics in Higher Education provides a foundational understanding of how learning analytics is defined, what barriers and opportunities exist, and how it can be used to improve practice, including strategic planning, course development, teaching pedagogy, and student assessment. Well-known contributors provide empirical, theoretical, and practical perspectives on the current use and future potential of learning analytics for student learning and data-driven decision-making, ways to effectively evaluate and research learning analytics, integration of learning analytics into practice, organizational barriers and opportunities for harnessing Big Data to create and support use of these tools, and ethical considerations related to privacy and consent. Designed to give readers a practical and theoretical foundation in learning analytics and how data can support student success in higher education, this book is a valuable resource for scholars and administrators.

### Big Data and Learning Analytics in Higher Education

This book focuses on the uses of big data in the context of higher education. The book describes a wide range of administrative and operational data gathering processes aimed at assessing institutional performance and progress in order to predict future performance, and identifies potential issues related to academic programming, research, teaching and learning . Big data refers to data which is fundamentally too big and complex and moves too fast for the processing capacity of conventional database systems. The value of big data is the ability to identify useful data and turn it into useable information by identifying patterns and deviations from patterns .

### Learning Analytics in Open and Distributed Learning

This book explores and further expands on the rich history of theoretical and empirical research in open and distributed learning, and addresses the impact of the “data revolution” and the emergence of learning analytics on this increasingly diverse form of educational delivery. Following an introductory chapter that maps the book’s conceptual rationale, the book discusses the potential, challenges and practices of learning analytics in various open and distributed contexts. A concluding chapter briefly summarises the chapters before providing a tentative future research agenda for learning analytics in open and distributed environments.

### Role of ICT in Higher Education

This new volume provides an informative collection of chapters on ICT and data analytics in education, helping to lead the digital revolution in higher education. The chapters emphasize skill development through ICT, artificial intelligence in education, policies for integrating ICT in higher education, and more. The book focuses mainly on technological advancements in ICT in education, the perceived role of ICT in the teaching-learning transaction, pedagogy for teaching-learning in the 21st century, student-centered learning based on ICT, learning analytics, online technologies learning, tools for technology enhanced learning, distance education and learning, the effective use of ICT in management education, experiences in ICT for technology-enhanced learning, influence of ICT in research development in higher education, role of teachers in direct classroom teaching in web-based education system, and role of ICT in innovation capacity building. The case studies help to illustrate the ideas and concepts discussed in the chapters.

### Adoption of Data Analytics in Higher Education Learning and Teaching

The book aims to advance global knowledge and practice in applying data science to transform higher education learning and teaching to improve personalization, access and effectiveness of education for all. Currently, higher education institutions and involved stakeholders can derive multiple benefits from educational data mining and learning analytics by using different data analytics strategies to produce summative, real-time, and predictive or prescriptive insights and recommendations. Educational data mining refers to the process of extracting useful information out of a large collection of complex educational datasets while learning analytics emphasizes insights and responses to real-time learning processes based on educational information from digital learning environments, administrative systems, and social platforms. This volume provides insight into the emerging paradigms, frameworks, methods and processes of managing change to better facilitate organizational transformation toward implementation of educational data mining and learning analytics. It features current research exploring the (a) theoretical foundation and empirical evidence of the adoption of learning analytics, (b) technological infrastructure and staff capabilities required, as well as (c) case studies that describe current practices and experiences in the use of data analytics in higher education.

### The Analytics Revolution

Lead your organization into the industrial revolution of analytics with The Analytics Revolution The topics of big data and analytics continue to be among the most discussed and pursued in the business world today. While a decade ago many people still questioned whether or not data and analytics would help improve their businesses, today virtually no one questions the value that analytics brings to the table. The Analytics Revolution focuses on how this evolution has come to pass and explores the next wave of evolution that is underway. Making analytics operational involves automating and embedding analytics directly into business processes and allowing the analytics to prescribe and make decisions. It is already occurring all around us whether we know it or not. The Analytics Revolution delves into the requirements for laying a solid technical and organizational foundation that is capable of supporting operational analytics at scale, and covers factors to consider if an organization is to succeed in making analytics operational. Along the way, you'll learn how changes in technology and the business environment have led to the necessity of both incorporating big data into analytic processes and making them operational. The book cuts straight through the considerable marketplace hype and focuses on what is really important. The book includes: An overview of what operational analytics are and what trends lead us to them Tips on structuring technology infrastructure and analytics organizations to succeed A discussion of how to change corporate culture to enable both faster discovery of important new analytics and quicker implementation cycles of what is discovered Guidance on how to justify, implement, and govern operational analytics The Analytics Revolution gives you everything you need to implement operational analytic processes with big data.

### Developing Effective Educational Experiences through Learning Analytics

The quality of students' learning experiences is a critical concern for all higher education institutions. With the assistance of modern technological advances, educational establishments have the capability to better understand the strengths and weaknesses of their learning programs. *Developing Effective Educational Experiences through Learning Analytics* is a pivotal reference source that focuses on the adoption of data mining and analysis techniques in academic institutions, examining how this collected information is utilized to improve the outcome of student learning. Highlighting the relevance of data analytics to current educational practices, this book is ideally designed for researchers, practitioners, and professionals actively involved in higher education settings.

### Radical Reimagining for Student Success in Higher Education

Co-published with the Association for State Colleges and Universities (AASCU), which sponsored the project from which the book emerged. This book answers the question "What would your institution look like if students really mattered?" The authors argue that really putting student success at the center of attention will require a radical reimagining of higher education. Much of what is presented here is grounded in the findings of the American Association of State Colleges and Universities' (AASCU's) *Re-Imagining the First Year (RFY)* initiative, which brought together 44 member institutions over a three-year period to identify and test programs, strategies, and tools aimed at improving retention rates for first-year students. The book makes a provocative set of arguments about what is possible if campuses radically reimagine their culture, practices, structures, and rules with the primary purpose of helping students succeed in college and beyond.

### Higher Education in the Era of the Fourth Industrial Revolution

This open access collection examines how higher education responds to the demands of the automation economy and the fourth industrial revolution. Considering significant trends in how people are learning, coupled with the ways in which different higher education institutions and education stakeholders are implementing adaptations, it looks at new programs and technological advances that are changing how and why we teach and learn. The book addresses trends in liberal arts integration of STEM innovations, the changing role of libraries in the digital age, global trends in youth mobility, and the development of lifelong learning programs. This is coupled with case study assessments of the various ways China, Singapore, South Africa and Costa Rica are preparing their populations for significant shifts in labour market demands – shifts that are already underway. Offering examples of new frameworks in which collaboration between government, industry, and higher education institutions can prevent lagging behind in this fast changing environment, this book is a key read for anyone wanting to understand how the world should respond to the radical technological shifts underway on the frontline of higher education.

### You Are a Data Person

Internal and external pressure continues to mount for college professionals to provide evidence of successful activities, programs, and services, which means that, going forward, nearly every campus professional will need to approach their work with a data-informed perspective. But you find yourself thinking "I am not a data person". Yes, you are. Or can be with the help of Amelia Parnell. *You Are a Data Person* provides context for the levels at which you are currently comfortable using data, helps you identify both the areas where you should strengthen your knowledge and where you can use this knowledge in your particular university role. For example, the rising cost to deliver high-quality programs and services to students has pushed many institutions to reallocate resources to find efficiencies. Also, more institutions are intentionally connecting classroom and cocurricular learning experiences which, in some instances, requires an increased gathering of evidence that students have acquired certain skills and competencies. In addition to programs, services, and pedagogy, professionals are constantly monitoring the rates at which students are entering, remaining enrolled in, and leaving the institution, as those movements impact the institution's financial position. From teaching professors to student affairs personnel and beyond, Parnell offers tangible examples of how professionals can make data contributions at their current and future knowledge level, and will even inspire readers to take the initiative to engage in data projects. The book includes a set of self-assessment questions and a companion set of action steps and available resources to help readers accept their identity as a data person. It also includes an annotated list of at least 20 indicators that any higher education professional can examine without sophisticated data analyses.

## Big Data on Campus

Webber, Henry Y. Zheng, Ying Zhou

### Cultivating a Data Culture in Higher Education

Higher education institutions have experienced a sharp increase in demand for accountability. To meet the growing demand by legislators, accreditors, consumers, taxpayers, and parents for evidence of successful outcomes, this important book provides higher education leaders and practitioners with actionable strategies for developing a comprehensive data culture throughout the entire institution. Exploring key considerations necessary for the development of an effective data culture in colleges and universities, this volume brings together diverse voices and perspectives, including institutional researchers, senior academic leaders, and faculty. Each chapter focuses on a critical element of managing or influencing a data culture, approaches for breaking through common challenges, and concludes with practical, research-based implementation strategies. Collectively, these strategies form a comprehensive list of recommendations for developing a data culture and becoming a change agent within your higher education institution.

### Conducting an Institutional Diversity Audit in Higher Education

Implementing systematic diversity transformation requires embracing all aspects of diversity—gender, sexual orientation, disability, gender identification, and other salient characteristics of difference—as well as race and ethnicity. This book lays out a framework for a systematic and sustained diversity process that first recognizes that too many diversity initiatives have generated more statements of intent than actual change, and that audits conducted by outside bodies frequently fail to achieve buy-in or long-term impact, and are costly endeavors. The authors' framework identifies nine dimensions that need to be addressed to achieve a comprehensive audit that leads to action, describes the underlying research-based practices, and offers guidance on ensuring that all relevant voices are heard. The process is designed to be implemented by and within the institution, saving the considerable expense of outside consulting and design. In addition, it offers flexibility in the timing and sequence of implementation, and provides the means for each institution to interrogate its unique circumstances, context, and practices. This book provides a concrete process for data gathering, analysis, and evaluation of institution-wide diversity efforts through a progressive, modular approach to diversity transformation. It gives campuses the ability to audit, evaluate, and analyze diversity progress on the nine dimensions and prioritize areas of focus. Its systematic, research-based approach supports continuous improvement and proactively addresses accreditation criteria. The book is designed as a collaborative tool that will enable every constituency on campus—from boards of trustees, presidents, provosts, executive officers, diversity officers, deans, department heads and chairs, administrators, HR officers, faculty senates and staff councils, diversity taskforces, multicultural centers, faculty, and researchers—to identify processes and relationships that need to change and implement practices that value and support the diversity on their campuses, and undertake the transformation necessary for institutional success in a changing world. The questions and guidelines set out in this book will enable all stakeholders to:

- Audit the progress on each diversity dimension
- Identify gaps between research-based practices and current approaches
- Tie diversity benchmarks to accreditation frameworks and strategic plans
- Chart the organization's overall progress in the development of comprehensive diversity initiatives leading toward Inclusive Excellence
- Prioritize institutional diversity initiatives based upon a comparison of the current state and the desired state, availability of resources, and the importance of each dimension in relation to institutional diversity goals
- Create a long-term strategy for diversity transformation that provides a concrete, research-based method for auditing progress and future planning

### Utilisation of South African Research on Higher Education

The relationship between research, on the one hand, and policy/practice on the other hand, is complicated and collaboration between scholars in research on higher education (RHE) and institutional research (IR) practitioners is often lacking. This book marks a collaborative effort of a diverse range of South African RHE and IR scholars and asks the overarching questions: What do we know about the utilisation of South African research on higher education (SARHE) and its subset of research known as Institutional Research? How and by whom is this research used? The book begins by looking at the historical underpinnings of SARHE and delineating the shape and size of this body of research. This is followed by a series of case studies on South African Higher Education institutions and governmental bodies, investigating how, when and by whom are research on higher education and institutional

research used in the decision-making of these organisations. This book is the first of its kind in South Africa and sets out to lay the groundwork for further research into the use, uptake and utilisation of RHE and IR in this country.

### Academic Leadership and Governance of Higher Education

Winner of the 2012 ASHE/CAHEP Barbara Townsend Lecture Award To prosper and thrive in an increasingly unpredictable national and global environment, U.S. higher education will need to adapt, innovate, and evolve once again, as it has during every major societal change over the past four centuries. The purpose of this new edition, published a turbulent decade after the first, is to provide institutional leaders -- from department chairs to trustees -- with a broad understanding of the academic enterprise, strategic guidance, and key principles, to assist them in navigating the future and drive the success of their institutions as they confront the unimagined. Recognizing that the hallmark of higher education in the U.S. is the diversity of institution types, each of which is affected differently by external and internal influences, the authors provide examples and ideas drawn from the spectrum of colleges and universities in the not-for-profit sector. This book covers the major functions and constituent departments and units within institutions; the stakeholders from students and faculty through the echelons of administration; the external environment of elected officials, foundations, philanthropists, and the new changing media; and innovations in teaching, technology, data analytics, legal frameworks, as well as economic, demographic, and political pressures. The book is informed by the proposition that adhering to four principles--which the authors identify as having enabled institutions of higher education to successfully navigate ever-changing and volatile pasts--will enable them to flourish in the coming decades: The four principles are: 1. Be mission centric by making all key decisions based on a core mission and set of values. 2. Be able to adapt to environmental change in alignment with the mission and core values. 3. Be committed to democratic ideals by seeking to promote them and modeling democratic practices on and off campus. 4. Be models for inclusion, equity, and positive social change.

### You are a Data Person

The common phrase, "I am not a data person," suggests that only professionals who have titles and roles in areas such as data analysis, assessment, and data science are best prepared to leverage data to make decision. Parnell challenges that notion by introducing the data identity framework, a six-component method that shows that every professional, regardless of their position, has some ability to support and/or make data-informed decisions. This book includes reflections from 40 higher educational professionals, a set of self-assessment questions, practical action steps, and several resource suggestions to help the reader accept and embrace their identity as a data person. Book jacket.

### Technology Leadership for Innovation in Higher Education

Higher education today faces several challenges including soaring cost, rising student debt, declining state support, and a staggering dropout rate. Digital technology enables numerous paths to innovation and promising solutions to these crises in higher education. However, few efforts have been made to look into the dynamic relationship between technology, innovation, and leadership and how they work together to transform teaching and learning, campus life, student service and support, administration, and university advancement. Technology Leadership for Innovation in Higher Education is a pivotal reference source that provides vital research on the intersection of technology, innovation, and leadership in higher education by examining the role of technology in activating, promoting, and accelerating innovation and by identifying challenges regarding technology leadership. While highlighting topics such as blended teaching, faculty development, and university advancement, this publication is ideally designed for teachers, principals, educational and IT management and staff, researchers, students, and stakeholders in higher education seeking current research on critical leadership dimensions required for effective education leaders.

### Data Analytics and Adaptive Learning

Data Analytics and Adaptive Learning offers new insights into the use of emerging data analysis and adaptive techniques in multiple learning settings. In recent years, both analytics and adaptive learning have helped educators become more responsive to learners in virtual, blended, and personalized environments. This set of rich, illuminating, international studies spans quantitative, qualitative, and mixed-methods research in higher education, K-12, and adult/continuing education contexts. By

exploring the issues of definition and pedagogical practice that permeate teaching and learning and concluding with recommendations for the future research and practice necessary to support educators at all levels, this book will prepare researchers, developers, and graduate students of instructional technology to produce evidence for the benefits and challenges of data-driven learning.

### The Value of Big Data Analytics in Higher Education and Beyond

The benefits of big data analytics are endless. With big data visualization permeating every market, decision-making can now be reinforced with easy to understand trends, correlations, and graphs, thereby providing actionable insights. Visualizations like easy to understand graphs, tables, and charts highlight trends, expose problems, and offer valuable insight. They offer the capability to change views, change parameters, and drill down to a detailed report. The result is huge: smarter decisions, increased efficiency, lower costs, and an improved ability to achieve strategic goals. Recent developments in database technologies made it possible to collect and maintain large and complex amounts of data in many forms and from multiple sources. In addition, there are analytical tools available that can turn this complex data into meaningful patterns and value, a phenomenon referred to as Big Data. Capturing, storing, distributing, managing, and applying data analytic to larger sized data sets are the foundations for the future activities involved with Higher Education and other Organizations. This book provides an insight to adapt and develop the culture of big data analytics in Higher Education and beyond by pointing out the unparalleled benefits it will bring to revolutionize the system. It begins by assessing the importance of big data analytics focusing on Higher Education by outlining existing challenges. It then explains the current and future data sources followed by questions that could be addressed. It discusses the importance of Expertise and Data Science Team needs, Vendor Possibilities with illustrations, and Computer Architecture needs with important Strategic Recommendations. Beyond Higher Education and other Training Institutions, the application and benefits of Big Data Analytics in other Top Sectors are also discussed. Finally, Data Visualization with Tableau is presented as an example before the book ends with important conclusion.

### Higher Education Systems Redesigned

Long an afterthought of the American higher education ecosystem, multi-campus systems have become more important than ever. In recent years, leading higher education systems have engaged in transforming the way they work, scaling best practices, leveraging data and analytics, and creating platforms to optimize and personalize these systems for increasingly diverse students. In Higher Education Systems Redesigned, leaders of these efforts share their insights into "systemness" and how to facilitate sustainable change in a system setting while navigating and leveraging tensions between campus and system priorities. Highlighting examples of successful realignment of these priorities with a focus on contextualized design and implementation, the book charts a shift in the aim of systems. Rather than perpetuating existing norms as they have traditionally done, systems are taking measures to spark innovation across campuses and use evidence-based practices to foster student access and completion rates, better serve communities, and drive social mobility and economic growth. Each chapter concludes with a list of takeaways to guide other system leaders and administrators. One of the few recent examinations of higher education systems, Higher Education Systems Redesigned offers a theoretical and practical framework for how systems can continually evolve.

### What's Public about Public Higher Ed?

"This book uses survey data to examine public sentiment regarding higher education, focusing on such critical issues as how universities spend taxpayer money, the pursuit of national rankings, student financial aid, and the interplay of international activities versus efforts to create "closer to home" impact. Building on their previous book Land-Grant Universities for the Future, the coauthors unflinchingly present a no-holds-barred exploration of what citizens really think about their public universities"--

### Using Data to Improve Higher Education

In recent decades, higher education systems and institutions have been called to respond to an unprecedented number of challenges. Major challenges

### Utilizing Learning Analytics to Support Study Success



Students often enter higher education academically unprepared and with unrealistic perceptions and expectations of university life, which are critical factors that influence students' decisions to leave their institutions prior to degree completion. Advances in educational technology and the current availability of vast amounts of educational data make it possible to represent how students interact with higher education resources, as well as provide insights into students' learning behavior and processes. This volume offers new research in such learning analytics and demonstrates how they support students at institutions of higher education by offering personalized and adaptive support of their learning journey. It focuses on four major areas of discussion: · Theoretical perspectives linking learning analytics and study success. · Technological innovations for supporting student learning. · Issues and challenges for implementing learning analytics at higher education institutions. · Case studies showcasing successfully implemented learning analytics strategies at higher education institutions. Utilizing Learning Analytics to Support Study Success ably exemplifies how educational data and innovative digital technologies contribute to successful learning and teaching scenarios and provides critical insight to researchers, graduate students, teachers, and administrators in the general areas of education, educational psychology, academic and organizational development, and instructional technology.

### Data Science in Higher Education

Be the Change your Institution Needs What are leaders in research saying about Data Science in Higher Education? "Where has this book been all these years? This is THE starting point for researchers looking for a leg up in today's college environment. Two parts discussion, one part methodology, and one part witty humor. I love it!" "Buy this book for your analysts. They and your college will thank you." "This is the only book on data science specific for higher education research that covers both theory and practice. I'm not a programmer at all, and I found this book very enjoyable. You won't regret it -- I know I don't!" "When our department was tasked with coming up with a predictive 'machine-learning' model, we hired Jesse to help us. His charisma and knowledge are unmatched, and this book only helps to breathe fresh life into issues in research today that are all too often swept under the rug." Discover the tools to take your institution to the next level! Data Science in higher education is the process of turning raw institutional data into actionable intelligence. With this introduction to foundational topics in machine learning and predictive analytics, ambitious leaders in research can develop and employ sophisticated predictive models to better inform their institution's decision-making process. You don't need an advanced degree in math or statistics to do data science. With the open-source statistical programming language R, you'll learn how to tackle real-life institutional data challenges (with actual institutional data!) by going step-by-step through different case studies. Topics include: Simple, Multiple, & Logistic Regression Techniques, and Naive Bayes Classifiers Best Practices for Data Scientists in Higher Education Narrative-style stories, gotchas, and insights from actual data science jobs at colleges and universities "Forget the textbooks. This is a book on data science written for institutional researchers \*by\* an institutional researcher. You need this book."----- Data Science is the art of carefully picking through that pile of book pages and putting together a complete book. It's the art of developing a narrative for your data, so that all the raw information that your institution warehouses and reports in bar charts and histograms is replaced with actionable intelligence. Here's what we know: Data science can and should be an integral part of college and university operations. Institutional effectiveness should be working side-by-side with faculty and educators to collect, clean, and mine through data of current and past students' behaviors in order to better empower counseling and advisement services (whether virtual or otherwise). Data itself should be considered an asset to an institution, and the data mining process a necessary function of institutional operations. So how do we do it? It starts with a solid perspective and great research tools. With Data Science in Higher Education you'll learn about and solve real-world institutional problems with open-source tools and machine learning research techniques. Using R, you'll tackle case studies from real colleges and develop predictive analytical solutions to problems that colleges and universities face to this day.

### Building Better Universities

Building Better Universities provides a wide-ranging summary and critical review of the increasing number of groundbreaking initiatives undertaken by universities and colleges around the world. It suggests that we have reached a key moment for the higher education sector in which the services, location, scale, ownership, and distinctiveness of education are being altered dramatically, whether universities and colleges want it or not. These shifts are affecting traditional assumptions about both the future 'shape' of higher education institutions, and the roles of—and relationships between—learners,

teachers, researchers, managers, businesses, communities and other stakeholders. Building Better Universities aims to bridge the gap between educational ideas about what the university is, or should be 'for', and its day-to-day practices and organisation. It roams across strategic, operational, and institutional issues; space planning and building design; and technological change, in order to bring together issues that are often dealt with separately. By analysing the many challenges faced by higher education in the contemporary period, and exploring the various ways universities and colleges are responding, this powerful book aims to support a 'step-change' in debates over the future of higher education, and to enable senior managers and faculty to develop more strategic and creative ways of enabling effective twenty-first-century learning in their own institutions.

#### Management Training Programs in Higher Education for the Fourth Industrial Revolution: Emerging Research and Opportunities

Under the Fourth Industrial Revolution, it is important that organizations recruit and retain managers with skills that allow them to focus on meeting strategic objectives. To achieve this, companies must focus on implementing strategic management that allows managers to manage and lead continuous change, creativity, innovation, learning, productivity, speed, and effectiveness of their activities that turn them into constant value generators. Managers must also possess personal competences such as initiative, resilience, assumption of risk, creativity, networking, empathy, negotiation, self-control, self-knowledge, and the ability to turn difficulties into opportunities. These capabilities are important in the context of the Fourth Industrial Revolution because they will allow organizations to cope with the highly changing environment that will enable them to consolidate their growth and profitability. Management Training Programs in Higher Education for the Fourth Industrial Revolution: Emerging Research and Opportunities delivers emerging research investigating empirical studies on the formation of management competences in higher education in the context of the Fourth Industrial Revolution in regards to its development and linkage with the business sector in order to offer educational strategies at the national and international level. Featuring coverage on a broad range of topics such as sustainable development, circular economics, and big data analysis, this book is ideally designed for academicians, educators, executives, managers, entrepreneurs, organizational development specialists, consultants, policymakers, researchers, administration professionals, and high-level students.

#### The Transfer Experience

Co-published with At last there is a handbook that everyone in higher education can use to help increase transfer student success. This comprehensive resource has been brought together to meet the need for a truly holistic approach to the transfer experience. The book brings together research, theory, practical applications, programmatic illustrations, case studies, encouragement, and inspiration, and is supplemented by an online compendium for continual updates of resources, case studies, and new developments in the world of transfer. Based on a totally different way of thinking about, understanding, and acting to increase transfer student success, The Transfer Experience goes far beyond the traditional, limited view of transfer as a technical process simply about articulating credits, a stage of student development, or a novel enrollment management strategy. Rather, the book introduces a stimulating array of new perspectives, resources, options, models, and recommendations for addressing the many needs of this huge cohort – making the academic, civic, and social justice cases for improving transfer at both transfer-sending and transfer-receiving institutions.

#### Learning Analytics Explained

Learning Analytics Explained draws extensively from case studies and interviews with experts in order to discuss emerging applications of the new field of learning analytics. Educational institutions increasingly collect data on students and their learning experiences, a practice that helps enhance courses, identify learners who require support, and provide a more personalized learning experience. There is, however, a corresponding need for guidance on how to carry out institutional projects, intervene effectively with students, and assess legal and ethical issues. This book provides that guidance while also covering the evolving technical architectures, standards, and products within the field.

#### Improving the Quality and Productivity of the Higher Education Sector

Transforming the Measurement of Learning and Teaching in Higher Education proposes a dynamic new model for educational measurement by reconceptualizing the field of learning analytics. Revolving

around the agency and daily work of those in the field, this book describes how colleges and universities can be better structured for quality learning, showcases new tools for gathering emergent feedback, and demonstrates how that feedback can be used effectively across higher education organizations. Leaders and practitioners at all levels are offered new approaches for organizational and technological design that ensure the type of data and the way it is gathered serve the ultimate goal of high quality learning and teaching.

### Transforming the Measurement of Learning and Teaching in Higher Education

Information Technology is the most significant development in the recent past, and different subfields and technologies have emerged in recent past such as Artificial Intelligence, Cloud Computing, Big data, Internet of Things, Business Analytics, Information Assurance, and Cyber Security, Robotics for sophisticated Business Informatics practice. Such effective Business Informatics is fruitful in sophisticated information and technological services to industries and organizations. Technology is required in various tangible and intangible product and service based organizations, businesses, and enterprises. In managing organizations role of information and content is just perfect not only for elasticity but also for the decision making including. Information Technology and its various subsystems are helpful in collection, selection, organization, processing, management, and dissemination of information and in organizational context role of Business Informatics is just booming. As it is an interdisciplinary and practice based subject impacting organizations of 21st century. This book is specially focused on Business Informatics with reference to the emergence of the latest technologies for promoting and advancing business and corporate sectors. It has discussed various emerging area specific organizational practices viz. Business, Healthcare Industries, Education sector, Aviation and Transportation. This edited volume is suitable for policy makers, decision makers, business and corporate houses as a trend and status report. Book is also going to be a perfect one for the academicians and researchers.

### Advances in Business Informatics empowered by AI & Intelligent Systems

"In our increasingly digitally enabled education world, analytics used ethically, strategically, and with care holds the potential to help more and more diverse students be more successful on higher education journeys than ever before. Jay Liebowitz and a cadre of the fields best 'good trouble' makers in this space help shine a light on the possibilities, potential challenges, and the power of learning together in this work." —Mark David Milliron, Ph.D., Senior Vice President and Executive Dean of the Teachers College, Western Governors University Due to the COVID-19 pandemic and its aftereffects, we have begun to enter the "new normal" of education. Instead of online learning being an "added feature" of K–12 schools and universities worldwide, it will be incorporated as an essential feature in education. There are many questions and concerns from parents, students, teachers, professors, administrators, staff, accrediting bodies, and others regarding the quality of virtual learning and its impact on student learning outcomes. Online Learning Analytics is conceived on trying to answer the questions of those who may be skeptical about online learning. Through better understanding and applying learning analytics, we can assess how successful learning and student/faculty engagement, as examples, can contribute towards producing the educational outcomes needed to advance student learning for future generations. Learning analytics has proven to be successful in many areas, such as the impact of using learning analytics in asynchronous online discussions in higher education. To prepare for a future where online learning plays a major role, this book examines: Data insights for improving curriculum design, teaching practice, and learning Scaling up learning analytics in an evidence-informed way The role of trust in online learning. Online learning faces very real philosophical and operational challenges. This book addresses areas of concern about the future of education and learning. It also energizes the field of learning analytics by presenting research on a range of topics that is broad and recognizes the humanness and depth of educating and learning.

### Online Learning Analytics

By providing practical advice on how to inform and lead a successful assessment program in student affairs, Coordinating Divisional and Departmental Student Affairs Assessment, 2nd Edition helps student affairs professionals understand the impact of their initiatives, identify areas for improvement, and make data-driven decisions to enhance student learning, development, and engagement. Student affairs assessment plays a significant role in shaping the overall college experience. As higher education transforms, there is an even greater demand for student affairs assessment that informs practice, illuminates equity gaps, and improves student learning. This second edition builds upon

the concepts of the first edition while adding essential topics that address the changing dynamics of leading assessment in a department or division in student affairs such as how to use and select assessment technology, meaningful ways to collaborate with institutional research, as well as creating equity-centered assessment practices. By utilizing the strategies in this book, student affairs divisions can create evidence-based practices that contribute to a more inclusive and supportive campus environment, foster student engagement, and ultimately enhance the educational journey for students. This updated and revised edition has been written with new and seasoned assessment practitioners in mind. It's an ideal resource for graduate students and other student affairs practitioners who seek to find practical information to guide their own assessment practice.

#### Coordinating Divisional and Departmental Student Affairs Assessment

The multiple crises of 2020–21 have presented both challenges and opportunities for change in four-year residential colleges and universities. Evidence indicates that the historic structure of administrative and student services is increasingly mismatched to the needs of a diverse and stressed student body born in a digital age. Inspired by his leadership in a university-wide initiative that focused on how students' interactions with both academic and professional staff affect their success and well-being, Scott A. Bass presents fresh insights on the inner workings of traditional nonprofit four-year degree residential institutions. The book describes the influences of history, tradition, and internal and external pressures on the American university, highlighting its evolution to its staid and fragmented structure; it distills voices of students, faculty, and staff; and it explores how successful organizations outside of higher education deliver services, with potential applicability for the academy's ability to meet students where they are.

#### Administratively Adrift