Texas Association for Institutional Research

2022 Conference
"Big Data in Lil d"
Denton, TX / Virtual
February 28, 2022 - March 2, 2022

Session/Workshop Descriptions

W1 Newcomers to Institutional Research

The TAIR Newcomer's Workshop is a half-day session focusing on resources that are available to institutional researchers and more specifically members of TAIR. The workshop will explore how IR offices and the roles within them are both similar and different across various types of institutions. This presentation will cover the benefits of TAIR membership including the Listserv, Summer Workshops, TAIR conference, and Certificate Program. Let this be the beginning of your networking experience with other IR professionals.

W2 Metrics that Matter: Advancing Equity with the PDP

The Postsecondary Data Partnership (PDP) is a nationwide effort to help colleges and universities gain a fuller picture of their status related to equity and student success. With the PDP Tableau dashboards, you can access data on all new students, use an intersectional approach to explore equity gaps, save time and resources on reporting requirements, identify where to focus your resources, and assess the effectiveness of your reforms in closing equity gaps. This session will begin with an overview for participants unfamiliar with the project. Participants will explore the utility of the PDP by viewing case studies within the dashboards that explore insights for needed reform and/or the impact of reform to close equity gaps. Participants will be invited to contribute to the conversation, followed by Q & A.

A1 A role of neural network in Student Success survey analysis

What is the relationship between stress and student performance? According to The Yerkes-Dodson law, you reach your peak level of performance with an intermediate level of stress. The objective of this research is to acquire pilot data about the amount of grit, perceived stress, and cope in a group of Liberal Arts college students using established psychological survey data, and to examine their associations of each of these traits with the student success. In addition, a researcher also applies a neural network analysis to utilize the survey data into a predictive model to predict the student success outcome.

A2 Funding and Building Developmental Math and Academic Support Services: Identifying Successes and Challenges for Hispanic and Low-income Students

The ModMath study is a part of the Alvin Community College's comprehensive approach to improving student achievement and persistence, particularly among Hispanic and low-income students, ultimately enhancing their ability to complete a STEM degree and transfer to a 4-year institution. A quasi-experimental, multiple-cohort design is implemented over a three-year period to track two groups of students – "intervention group," students who are enrolled in the developmental courses that use an embedded tutor; and "control group," students who are enrolled in the traditional version of the courses. Institutional and performance data is used to identify challenges and improve program components in curriculum and academic support services, and to inform data-driven decisions for program improvement in developmental mathematics and academic support services.

A3 The Effect of Housing Locations on Retention and Progression: An Unexpected Story of a Regional Public Institution

Research has indicated that students who are living on-campus have better academic outcomes compared to students who are living off-campus (Schudde, 2011). The closer students live to campus, the more engaged they are academically and socially with the institution. Therefore, they are more likely to persist and finally graduate from their programs. However, this finding does not apply to Texas A&M University -Corpus Christi (TAMU-CC), as students who are living off-campus have better academic outcomes than those living in institution owned apartments and residence halls. Using data from the CBM001 and Banner SIS, this study aims to compare the retention rate for students who are living off-campus, those live in TAMU-CC owned properties, and students living in residence halls with TAMU-CC owned apartments. In addition, applying logistic regression, it also seeks to test the correlation between housing locations and first-year retention while controlling for student's background characteristics.

A4 Data Warehousing & Analytics for Peer Benchmarking Data

External data is tremendously valuable to higher education institutions as we seek to measure ourselves with our peers, better understand how we rank in various high-level comparison metrics, and seek information for strategic institutional decision-making. Various sources of external data are available, but a common theme is that the user interfaces and presentation methods housed within those sources may leave a bit to be desired and aren't tailored to one institutions needs. Join UNT in a discussion about types of external data we've converted into internal dashboards, data management and modeling methods we used to automate data preparation of external datasets, efforts to document business terms used in peer comparison dashboards, and dissemination and training efforts to increase adoption of the new tools.

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B1 A Storm is Brewing: Why Analytics is more important than ever.

Nathan Grawe, WICHE, and the National Student Clearinghouse all point to challenging times ahead for enrollments. Additionally, the joint statement by AIR, Educause, & NACUBO on Changing with Analytics lays forth a clear challenge to act now. One major challenge in maturing analytic landscapes is the gap between IR methods and tools and the knowledge and data literacy of decision makers to harness and trust these approaches. This gap can lead to lost opportunities, distrust of analytic/data approaches. Using a theoretical framework of executive data literacy, this workshop provides attendees with an understanding of the core concepts of data literacy, analytic maturity, and analytic culture. We will then share how this knowledge can be applied to address the impending enrollment challenges ahead and how IR can help support institutional efforts to weather the storm.

B2 A look at how one university fine-tuned their administrative effectiveness

Typically, institutional effectiveness is a leading standard for non-compliance. Many sessions focus on institutional effectiveness as it relates to student learning but very few sessions focus on the administrative functions that are just as critical to the mission of the university.

B3 Embedding Student Analytic Findings into Operational Tools: Implementation Process and Visualization

Predictive analytic models are becoming more and more common as a tool to understand persistence behaviors in higher education. The movement from student-level estimation results to actual operational use, however, can be difficult due to the complexity of model findings and the suggestion of a mathematical process 'predicting' student outcomes. This presentation will discuss a range of strategies/methods to implement analytical model findings into advising decision-making. Proper decision framing, operational use trade-offs, user engagement, and visualization techniques will be discussed as methods to implement analytical findings into persistence activities. Alamo Colleges' persistence dashboard tool will be shown as an example of how these discussions led to an operational tool for advising professionals across the district.

B4 Predicting College Student Purge Using A Classification Tree Model

This research project demonstrates how to build a predictive model to identify college student purge using educational data mining. This research specifically aims to address the application of a classification tree technique on Lone Star College's institutional research database to understand non-payment drop data and gain insights into the critical factors that influence the purge for non-payment. As predictors of the purge rate, we consider a low-Income status application, financial aid, previous term GPA, registration date prior to the semester start, previous academic standing (e.g., probation, suspension, and warning), race and ethnicity, age, full time vs. part-time, associate vs. certificate, and attendance of new student orientation.

C1 We have a Notion about IR processes!

Institutional Researcher groups are always looking for new and cost effective solutions that enable the streamlining of processes including productivity tracking, deadline tracking, workload timelines, historical request archiving, and data dictionary collaboration. Notion by Notion Labs Inc is a relatively new hosted productivity software that may be of interest to IR teams searching for a way to manage the many aspects of IR work. Texas A&M International University began using Notion in early 2021 and will present the implementation of Notion within an IR context.

C2 Beyond Headcount by Counties Tables-Using Tableau to Visualize Enrollment in Texas

Texas A&M University-Corpus Christi has evolved their Data Center from Excel Pivot Tables to Tableau Dashboards. Administration has not only wanted to see where students are coming from both within and outside Texas; however, how far is their residence from campus. This session details how we addressed administration's question by using Pycharm and developing a Tableau dashboard. The dashboard calculates, in miles, the distance from TAMU-CC to different counties within Texas. We will highlight the use of SQL Server Management Studio & Pycharm in our Tableau Dashboard development.

C3 Power BI Row Level Security for University Data

Security needs do not always neatly follow the University organizational chart. This presentation will cover the basic method for providing row level security in a Power BI dashboard. It will also go beyond the basics to cover additional techniques that can be used to tailor the security needs of the dashboard to almost any scenario.

C4 Using Data to Improve Student Success

Alvin Community College (ACC) will discuss how an IR office can help users around the institution to make informed decisions about enrollment, student pathways, cohort tracking, and time series analysis using Zogotech and Tableau dashboards.

C5 LMI is it TMI - starting at the ground floor and more

The session is the second in a series of LMI presentations, the first being the "Y" of LMI at the 2019 TAIR conference. That session grounded folks in why we use LMI and what it means to student success. This session will present the basics and foundation of Labor Market Information (LMI). There will also be numerous examples of where, when, and how the LMI data can "catch you" and might cause issues.

D1 Impact of the COVID-19 pandemic on the performance and feature importance of retention prediction model

First year student retention rate is one the most important performance measures for the higher education institutes. It has also been of the most common targets of predictive analytics in institutional research field. A noticeable amount of research work can be found in the academic literature on the application and comparison of different predictive methods such as logistic regression, random forest, and neural networks. However, significantly less work has been done on interpreting the predictive models through quantifying and understanding feature importance. Correct interpretation of the predictive model is very crucial because it creates insights into the important factors that determine retention students that can be used for planning and performing effective intervention or other decisions. In this research we used the Shapley value method to quantify feature importance of our predictive model.

D2 Investigate Course Level Enrollment Patterns with Tableau and Power BI

Course level enrollment patterns are identified and analyzed to provide answers to key course enrollment questions before the semester. This session will be show you how to create a simple dashboard using Tableau or Power BI with a data warehouse like Zogotech or just a simple excel file. Dashboards can be created for each semester that will drill down to course level daily enrollment to assist your administration and faculty in their course decisions.

D3 15 to Finish: How Does Taking 15 or more credits Impact First-time Undergraduate Students?

Many higher education institutions encourage students to take 15 credit hours or more per semester as timely degree attainment will save time, help the students pay less tuition and fees, and accrue less debt through college. However, there is a lack of understanding on the profile of students taking 15 or more credit hours and the impact taking 15 or more credit hours has on academic outcomes. Using institutional data at a Texas public four-year institution, this study aims to uncover the correlations between pre-college enrollment characteristics and taking 15 or more credit hours in the first semester. This study also tests the effect of taking 15 or more credit hours on student's first-year retention and four-year graduation rates controlling for background characteristics. Moreover, it seeks to understand the moderation effects of student's admission, financial, race/ethnic characteristics on this relationship.

D4 Tableau Rodeo: Monitoring and Analyzing Enrollment with a Registration Dashboard

Collin College's annual unduplicated enrollment exceeded 56,000 students at its seven physical campuses, four centers, a virtual campus, and numerous other instructional sites in high schools, business establishments, and public agencies throughout its service area. The College's registration cycles are long and dynamic. The Institutional Research Office developed a new "Tableau Registration Statistics Dashboard" that provides decision makers the means to monitor and analyze daily enrollment throughout a registration cycle. This session will demonstrate the new dashboard and will describe both the conceptualization underlying its initial and ongoing development and how it informs more efficient and effective decisions about current and future enrollments and courses.

D5 Improving Student Pathways to Completion

Improving student completion is extremely important for Brazosport College (BC). Students were taking more than 85 credits to complete a 60-credit degree. Because of this urgency, BC awards have increased 38% and three-year graduation rates have increased 11.7%. BC focused on helping students navigate their chosen path and identified which students are off their path. We'll discuss the factors that affect student pathway progression, determine who the key stakeholders are in the process, and the interventions to increase completion. This session is designed to get the audience to think innovatively when searching for alternative methods to help solve an age-old problem of completion

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E1 Data Are Not Neutral! Centering Equity in Our Work

This session will examine why equitable data practice should be the norm and highlight ways in which data professionals can center the concept of equity in their work. The theoretical foundation of the pursuit of equity in data will be discussed, and best practices for centering equity in data work will be explored. Finally, examples of data norms will be contrasted with examples of equitable data practices. Attendees will leave this session with clear ideas of how they can apply equity principles in their own work.

E2 Google Data Studio as an Alternative Institutional Research and Reporting Tool

In today's digital world, institutional researchers have many powerful tools to communicate, analyze, and visualize the institutional research (IR) datasets. Such tools are highly desirable in all types of IR research activities in higher education. These days data visualization has significant importance in higher education research works and reporting. The most commonly used tools in higher education IR for data visualization, analytics, dashboards, and reporting currently are Tableau and Power BI. This study will introduce "Google Data Studio" as an alternative visualization & reporting tool in IR research. Google Data Studio is a free web-based platform that can be used by institutional research personnel in their reporting and data visualization activities. Google Data Studio can assist institutional researchers with daily activities such as data analytics, visualization, and communication as well as presentations in day-to-day job and research projects.

E3 A Hybrid Approach to Identifying National Peer Institutions

Identifying national peer institutions is common in higher education to set benchmarks, compare performance, and follow best practices. However, despite the popularity of the study, the process of identifying peer groups is still unstandardized due to the researchers' judgment and decisions. This session will guide you through a hybrid methodology on impartially identifying peer institutions and making comparisons.

E4 Handling Texas-sized Self-Selection Bias: Prediction-based Propensity Score Matching and Program Evaluation

Self-selection bias is an area of concern when evaluating student-focused programming, particularly where participation is voluntary and not part of course or degree requirements. We want to know how these programs impact students while minimizing the effect of self-selection bias. Prediction-based Propensity Score Matching (PPSM) allows us to explore how participation in programs like on-campus housing, Supplemental Instruction or tutoring affect student success while accounting for potential self-selection bias.

F1 Covid-19 Impact on Traditional Graduate Programs at a South Texas Hispanic Serving Institution (HSI)

Student success for 13 HSI traditional graduate programs were examined between pre-Covid (2015-2019) and Covid (2020-2021) eras. Predictor variables were geography, gender, race, age, GPA, SCH attempted, and duration in program. Demographic variables included Poverty level, Bachelor's degree or higher (percent of persons age 25+), and Language other than English spoken at home. Logistic regression was applied and found student GPA was the most important factor ($p < 0.001$) regardless of era. Geography, gender, age, and socioeconomic status were not significant ($p < 0.10$). Race was a determinate factor for student success during the pre-Covid era ($p = 0.017$) but not during the Covid era. SCH per term, drop rate, and length of time in program had a greater impact during the Covid era ($p < 0.01$). The total attempted SCH within a program during pre-Covid were significant ($p < 0.001$) but not during the Covid era.

F2 Leveraging Teams for Information Distribution

While COM had been using Microsoft Teams prior to the pandemic, our transition to working from home transformed it into an integral tool in how we work with each other and with others on campus. Join us to see how COM is using Teams to share data and reports with other departments. We encourage audience participation and discussion to share your own experiences as well.

F3 Incorporating a Headcount to Parity Figure alongside the Equity Index

Conducting disaggregated data inquiries can be helpful in establishing accountability for equity within higher education by alerting campuses to where the gaps exist, an understanding of the size of the gap, and by providing a baseline from which progress towards equity can be measured (Center for Urban Education, 2020). In this session, participants will examine the Equity Index (Bensimon, Hao, & Bustillos, 2003; Bensimon & Malcom-Piqueux, 2014), a data tool for measuring representational equity. While the Equity Index is a very flexible tool for data analytics, it provides little insight into the magnitude of equity gaps and offers little guidance for strategy and policy development in order to achieve representational equity. To overcome this limitation, the Alamo Colleges District IR Department has developed an innovative headcount to parity figure that will allow us to operationalize the size of equity gaps for practitioners.

F4 Sharing Classroom Student Success Data: Data Back to the Faculty

Institutional Research Offices collect and report the student success outcome data such as Productive Grade Rate and Course Completion Rate on a semester basis. But, the faculty receives very little feedback except for the End of Course surveys the students fill out on a volunteer basis. Sharing the student success data with the faculty can become an excellent asset to the faculty members. It would provide the faculty with how their students perform and compare how the students of the other classes are achieving their outcomes. Such data also allows identifying the equity gaps in student performance at the macro and micro levels. In this session, we share the experience of closing the loop in student performance by sharing back the student performance data with the faculty and the students.

F5 The Texas Higher Education Data Landscape is Shifting: What you need to know.

The THECB is in the midst of a major data landscape initiative. This work will create opportunities for all institutional researchers to engage and support. This conversational focused discussion will feature representatives from each of the major 4 year Systems of Higher Education in the State who will come together to share perspectives, opinions, and challenges of working in a rich and complex data ecosystem. IR perspectives on data, data quality, and data maturity will also surface and attendees will be able to hear a diverse array of approaches to meeting the needs of future Texas students

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G1 Student Enrollment by Location: Visualizing CBM Student and Class Report

Using CBM reports for student enrollment and class data as well as in-house extract tables, a dashboard was developed that provides student headcount by location where students have actual class enrollments. The data model also allowed us to understand and demonstrate trends in class enrollment for students at each location overtime by college and department.

G2 Using Predictive Modeling to Increase One-Year Retention through Early Identification

One-year retention is a critical benchmark for student success and an important metric for university administrators. Initiated by the Retention & Graduation Task Force at a large, public, 4-year university with a plateaued one-year retention rate, this study generated a predictive model that can be used to identify students at risk of not being retained. After exploring many models to identify the most significant predictors of retention at three different time-points during a student's first year, the researchers calculated predictive probabilities to assign students a risk level. The researchers shared this information in a way that could be actionable to advisors and others in the campus community. Evaluation is currently ongoing to determine if these initiatives for early intervention have a positive effect on retention.

G3 Clustering Models to Assist in Student Outreach

Learn several clustering algorithms and how Dallas College applied these tools for enrollment and re-enrollment campaign strategies. The result of one such campaign was the return of over 5,000 students in Fall 2021 who were not registered in the final weeks leading up to the semester. An introductory overview of common algorithms, paired with practical implications, will help attendees envision ways to get started with clustering at their own institutions. Additional details about how and why the College selected and evaluated specific algorithms, meanwhile, will provide a deeper dive for more advanced practitioners

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H1 The Last Lap - Empowering Stakeholders to Take Action on Data Findings

IE and IR Offices continue to evolve as critical components in institutional decision making. Their position and access to data inherently requires them to work across their institution or system.

In this capacity, the IE and IR Office is called to impact the culture and use of data analytics. However, roadblocks in process or culture can preclude the ability of IE/IR Offices to take action on the data. As agents of change, IE/IR professionals can leverage Kotter's eight step change model as a way to implement sustainable and strategic use of their institutional data.

Taking a closer look at how IE/IR professionals can remove barriers and accomplish short term wins, this session will discuss an example of how this has been done at Northern Michigan University. Participants will then identify barriers to be addressed, or short term wins for their IE/IR Office to consider in their strategies toward use of data. If you are interested in learning best practices for cultivating a culture of data-informed decision making at your institution, you won't want to miss this session.

H3 Post Completions Outcomes - TWC data showing ROI on education

Short term programs leading to high-demand, high-wage jobs have been a growing priority to help Texans affected by COVID-19 get back to work quickly. One way to assess the value of these programs is to track the employment and wages of program completers. Austin Community College developed interactive dashboards to support efforts to double enrollment in identified "Fast Track" programs and to assess the labor market outcomes of program completers. Participants will learn about foundational efforts to improve the data quality of continuing education programs and accessing Unemployment Insurance (UI) wage data. The session will also cover methodologies for tracking rates of employment, wage improvement before and after program completion, and median wages one year after program completion.

H4 Passing the 7's: SACSCOC accreditation process

Building strong, sustainable institutional processes for planning and evaluation IS THE CORE TO PASSING THE 7'S (Institutional Planning and Effectiveness Standards 7.1 & 7.3). We will share how Alvin Community College's strategic planning process is integrated throughout all divisions and departments. By demonstrating continuous improvement through consistent documentation of ongoing processes, the college was able to effectively show the continuous improvement process through the evaluation of administrative support services achievement with no recommendations from the On-site Committee Virtual visit. We will progress from the 1,000-foot view for Standard 7.1 to the ground view of Standard 7.3 and focus on our program review process as a specific example of supporting the integrated planning and evaluation processes by the end of the session.