**Data-Informed Course Design and the DEI Imperative - AMCOA 2022**
**Maura Devlin**
**Bay Path University**


SLIDE 1

Bob reached out to me based on a December 2021 *Change Magazine* article that I wrote along with two colleagues, Jess Egan, now the Director of Instructional Design and Faculty Development at Holyoke Community College and Emily Thompson, the Program Director of Liberal Studies and Communications for The American Women's College division at Bay Path University.  Much of the work that I'll describe in this presentation originated within TAWC and is now gaining momentum in other divisions at BPU.

In a very meta, self-reinforcing fashion, the *Change Magazine* article itself was the result of a presentation at the EDUCAUSE annual conference in October 2020, one that I participated in with colleagues, Jess Egan, and Chris Gaudreau, an instructional designer at Bay Path University.

Now, a lot was going on in the world and in higher education between the EDUCAUSE presentation and the publication of the *Change Magazine* article, and especially so, if you think about the timeline of the submission of the proposal for EDUCAUSE, which probably was in the spring of 2020. By the time we were writing the *Change Magazine* article in 2021, it dawned on my colleagues and me that the same skills and holistic approach to data that we had been arguing could positively impact student learning was being done on campuses everywhere - to facilitate contact tracing and monitor vaccination statuses to keep campuses safe during the pandemic.  We realized that campuses could and should harness this collaboration, this recognition of various expertises, this macro-level understanding of data, this agreement on what mattered in keeping campuses safe, this political will - and more - and apply it to student learning.

During the pandemic, there was also increased visibility and awareness of disparate impacts on certain segments of US society - in many, many, many aspects of life, including the ability to afford, enroll, attend, persist, and learn in our HE institutions.  The approach to data informed course designs that my colleagues and I engage in could be and should be

analyzed by student subgroups to ensure that *all* students are learning and achieving equitably.  It would be a travesty in 2022 for our institutions not to harness technology and data in these ways.

SLIDE 2

Hope to take about 45 minutes to present and leave 15 minutes for Q&A

Because I'm an assessment person, I want to share the learning outcomes - the goals of today's presentation:

LO1 - Via LO1, I hope to arm you with some reasons, a sense of urgency, & importance for making the case on your campuses
LO2 - Identifying stakeholders for data-informed course design in your organization is a key outcome
LO3 - I hope to help you think about technology and systems, and data that you have and data that you need and how to get them
LO4 - Last, with the data you have and will increasingly obtain, what will you do with them?  How will you share them?  What will the expectations be for using them?

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On this screen, you can see quotes about data, about why data are important to student success.

The first quote is from the US DOE's Office of Ed Tech annual publication in which BPU was featured.  We all know that HE was not designed for all the students it supports today.  We need to rethink how we work, and of course, that means measuring what matters.

And if supporting today's students isn't compelling enough, note President Royal of HCC's quote about HE institutions that will survive and flourish, those utilizing data-informed practices.  We all know there is an imperative on many of our campuses about survivability related to students' perceptions of the value of our degrees.

SLIDE 4

I mentioned that much of the work that informed the article and EDUCAUSE presentation had its genesis in TAWC and that this work is gaining traction in other areas of the University.  I'll describe this traction and future initiatives later in this presentation, but first I want to provide context about the TAWC division, a division that was obsessed with data from its inception in 2013.  This division was re-launched, if you will, from an accelerated weekend continuing education model for adult women, via a federal FIPSE grant.  We were required to run a RCT experiment to test adaptive learning, adaptive learning content and modules which we embedded in about 25% of our courses over several years time, to provide just-in-time remediation as needed.  But all aspects of the TAWC model - called Social Online Universal Learning - were equally important to student success - wraparound supports, support and professional development for faculty, accelerated 6 week courses, intentional onboarding of students, and student communities - in addition to adaptive learning, called Knowledge Path or KP.

The American Women's College (TAWC) at Bay Path University offers online asynchronous courses to adult women learners in six 6-wk sessions a year.  It leverages a centralized course management model, in which there is a master course in the Canvas LMS for every section, ensuring that each section of a course achieves the same course learning outcomes in the same way.  TAWC follows a standard course redesign cadence through which we revamp over 90 courses a year. To do this effectively, with lean instructional design and subject matter expert teams, has required new modes of operating.  By bringing together faculty, advising, IT, and analytics professionals, TAWC has identified common as well as less commonly sought data points to drive redesigns for high-impact learning experiences.

Streams of data that are typically siloed in higher education are also brought together.  We developed an internally built data warehouse (a SQL server) in which all various, disparate streams of data come together, data from our SIS Jenzabar, our advising notes in Salesforce, data and student artifacts in our LMS, data from the adaptive learning platform, even data

from educational tech vendors that program directors embed within their courses. Program directors and educational technologists work together to ensure that data can come back into our warehouse and not be housed on a vendor's server.

Then a reporting tool was layered on top of the data warehouse, to allow the development of reports that could pull the data out in ways that facilitate meaning making. The first reporting tool we used was Logi but now these reports have been built out in PowerBI dashboards.

This is the ecosystem - backed by data - that we believe best supports students to degree completion.

The increasing availability of data for assessing performance of content, assessments, modules, and the student experience has been a driving force in our course redesign process.

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Academics and instructional designers working together is a key cornerstone of using data to inform course designs and redesigns. Prior to and during the development of the data model that I'm describing today, we encouraged our academic and ID collaborators to approach their course design project as a research project first. What do you want to know about how a course is performing? This is a mindset switch from assessing how students are performing in your courses. Exploring content, assignments, high quality instructional practices, and student success on assignments are all important considerations.

Even if you don't work in a centralized course management model where all instances of a certain course have the same content and same assignments, can you aggregate sections taught by the same instructor and with the same assignments so that you can see patterns?

I want to share an Inside Higher Ed article author's perspective. This is

from Joshua Kim:

"Every campus ID team should have access to real-time dashboards showing the following data points:
- Courses by enrollment size
- List of large courses taught by adjunct or junior faculty
- Aggregated student performance in foundational / required courses
- Persistence and attrition at the course level
- Student performance outcomes disaggregated by demographic variables (including first-generation and Pell eligible learners) by course

The reason…instructional design teams need real-time access to fresh course level data is that these ID teams need to prioritize which faculty with which to partner. Too often, instructional designers will end up collaborating on course redesigns based on faculty interest, rather than student need."

So, as a start - what are the courses on your campus that would be most impactful to redesign from a student success perspective?  What courses enroll the most students?  Are they succeeding or are certain courses imposing barriers?

SLIDE 6

Other data sources capture information about student populations.

HE institutions capture enrollment data by subgroups for IPEDS reporting reasons.  These fields can be combined with other data sources to identify how underrepresented students are faring in courses.

The image here is one that is likely familiar to you.  It's a screenshot from our Factbook, which used to be a static document (and is now developed in a real-time PowerBI dashboard), for which our institutional researcher mines data annually and reports on enrollment by race, first generation status and full-time, part-time status.

If you have these data on your campuses, you can combine them with performance data such as with course grades, DFW rates, retention rates, as a start.  A data model for course improvement has the ability to improve equity by ensuring that all learners are successful in a course. In many institutions, gathering and combining these various sources of course performance evidence may not mean additional expenditures, but rather can be found in institutional resources that already exist.

SLIDE 7

In terms of developing courses, faculty and instructional designers are key, of course.  But there are other offices and campus functions who also have expertise and understanding of student experiences in courses.  Other stakeholders whose data can be incorporated into course redesigns include IT, IR (as previously mentioned), Student Services/Advising, and the Registrar's Office.

This form of work may require a need to operate within a matrix organizational structure, not a hierarchical one, as it has in our case.  It has meant defining roles and expectations for collaboration and clarifying roles ongoingly.  And it involved change management tactics, such as leveraging cheerleaders and overcoming resistance.

Even if your organization is not going to adopt a matrix organizational structure, there are still ways to leverage collaborations.

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And it starts with recognizing the expertise in other areas, besides academics/faculty and instructional design.

The academic and ID partnership can result in identifying key data, identifying other stakeholders whose data can be pulled into consideration, developing key course performance indicators, and perhaps eventually developing a course performance data dashboard.

Information about the cadence of course offerings that the RO can share can facilitate planning for course redesigns.  Does the RO track redesigned

courses via course codes (such as a flip from a F2F course to an online modality)?

IT partners can develop the data model, maintain information repositories, such as the data warehouse I mentioned, and customize reports and dashboards so that academics and IDs can make meaning of course and student performance data.  IT may also have information about course experiences through help desk tickets.

Advising teams often have data on faculty early alerts that can be indicators of challenges that students face within courses.  They can also be rallied to provide proactive support and outreach at certain points in a course or a semester, especially if brought into collaboration with academics and IDs.

IR has high-level data on degree completion, retention, and enrollment that can be mined to prioritize course designs for student success.

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To ensure course redesigns were not conducted in institutional silos, TAWC IDs and academics partnered with the Registrar's Office.  What you see here is a backwards approach to planning courses, based on projected course needs from student degree audits, facilitated by our Jenzabar SIS and tracked using a simple google sheet.

Beyond that, we involved the RO on the Course Development Steering Committee to help schedule courses in Course Development Planner, another google sheet, using set development phases with set due dates - during these phases, faculty work in partnership with IDs, IDs know the workload that's coming their way to develop courses in the LMS and can allocate resources.

Having a Registrar's Office staff member as part of a steering committee for the course development process/cycle - facilitates consistent collection of data that may be used as variables in analysis of student learning - variables about course modality, third party tools (adaptive software, Pearson tools), and facilitates tracking of when a course was redesigned for pre- and post-redesign comparisons.

We have found that RO involvement facilitates our centralized course management model.

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Institutional research is another partner in course redesigns.

Having apples to apples comparisons via common assignments facilitates assessment of student learning and making meaning from data are easily facilitated.

Two examples here of this partnership:

- On the left, a visualization of course level assessment data, in which Logi reporting tool sitting atop of our data warehouse can pull student learning data from the outcomes feature in our Canvas LMS
- On the right, our IR team has been able to create DASHBOARDs by pulling data from the warehouse, marrying LMS, SIS data with Salesforce records, using POWER BI factbook

SLIDE 11

For example of the power of these partnerships, communicating with our advising teams has provided context on early alerts and possible interventions that can aid retention.

Here are some considerations for course design to optimize data from these partnerships and interventions:  Is there an early assignment/benchmark in the course?  How is outreach happening or how could it happen?  Are there attendance protocols in place?

And then if data from these interventions are captured in a CRM - we use Salesforce - we get more data about the student learning experience.

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We've learned that IT can provide invaluable information about things students seem to struggle with on a consistent basis through a deep dive into and prioritization of helpdesk tickets. An assessment of course content and LMS structure is also critical information; Quality Matters reviews and LMS outputs are excellent methods of narrowing the focus of redesign to capture high priority needs.

What you see here is the course development data dashboard, used by our ID and academic partnerships.  We extracted aggregated data on course enrollments across sections, number of instructors across those sections, course grades, DFW rates, participation in online discussion boards, LMS submission of assignments, and grades by assignments - all filterable by course.

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The upshot from these collaborations, with a consistent approach to data fields so that reports can be developed and can have actionable meaning, is that more tools can be built to understand how all students learn, by subgroup.

What you see here is a PowerBI report, Course Grade Analysis, filterable by person of color or not, Pell-grant eligible or not, and first generation status or not.

With such an easy-to-use report now available to all faculty, chairs, and program directors across the university, not just The American Women's College division, my IE Office and the VPAA have included question prompts related to equitable learning in the annual program reviews and assessment reports that our chairs and program directors develop and submit.

We are also able to shorten the cycle of our assessment and program reviews.  Prior to having such easy access to data, chairs and program directors were required to submit annual assessment of student learning reports but only conducted comprehensive reviews of their programs every five years, on a rotating basis.  We are now asking them to conduct these

reviews of enrollment trends, persistence and retention data, completion information, and equitable learning outcomes annually.

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When it's time to redesign a course, the potential number of data streams available to faculty and instructional designers - and how to capitalize on them - can be daunting.  Here is a way to prioritize and start with the most impactful and easiest to obtain data.

I've mentioned Canvas as our LMS, Salesforce CRM used by our advising teams, and our Jenzabar SIS.  Realizeit is the adaptive learning platform used at TAWC, and Freshservice is our help desk ticketing system.

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You can see here additional considerations related to where will your data live?  Who will own or manage it?  Who will be responsible for developing reports?  How will you share this information across your university?

SLIDE 16

Bay Path University's UG division - comprised of The American Women's College and the traditional residential F2F model - is working with two Dept of Ed grants, a TITLE III and a FIPSE grant. The Title III is an UG student success grant.  Its goals are to develop a guided pathways model, and as part of this work, the core curriculum in all UG degree programs was revised to align with the Mass Transfer General Education Foundational block.  Other aspects of the grant are to reframe student supports and - no surprise - to integrate technology and data across academics and student services.  There are 20 course redesigns required as part of the Title III grant, but we will accomplish 30 very soon.  The FIPSE grant was awarded during the pandemic, to allow us to design thoughtfully online and hybrid courses experiences in over 200 courses.

In terms of timing, the Title III redesigns came first, and we brought in an expert on transparency in learning and teaching from the AAC&U, Tia Brown McNair, for faculty professional development. Then we required certain elements in the course designs, with faculty working in partnership with IDs in set course development phases, in order for faculty and other SMEs to earn their stipend. These course elements include ways we can use data to understand the student learning experience - such as grading rubrics for each assignment and program- or course-level assessment rubrics.

Under the FIPSE grant, we are building on these same requirements, and layering in a review of courses using the Quality Matters rubric - a pre and post redesign analysis. We will also be developing a Faculty Fellows program, for faculty interested in redesigning a course. IDs and my office will be partnering with faculty to develop research questions, by prompting faculty to consider, "What do you want to know about our course? How will you measure the effect on student outcomes?"

More to come, as transparency in teaching and learning and data-informed course design are ongoing quality initiatives. But I'm grateful for the grant opportunities and for the innovative faculty, IDs and other stakeholders who have developed data-informed course design practices on behalf of our students!