Stuck in Learning Analytics?

Higher Education Stakeholders' Perspectives of Barriers to Data-Driven Teaching and Learning

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Purpose: The purpose of this document is to compose shared solutions for addressing challenges that were identified in our qualitative study looking at the barriers to the use of learning analytics data from three key stakeholder groups in higher education: Faculty, Instructional Designers, and Academic Coaches.

On the following pages you will find key themes that were identified in our research, along with ideas generated from audience members who attended our presentation at the 2021 Educause Learning Initiative Conference.

Key Theme: Availability of Useful Data

95.5% of Reponses

Codebook Definition	Participant didn't feel that they have access to necessary data or that the data currently available to them is useful for some reason
Example Responses	"I can think of a couple there. One is, and I've touched on some of these earlier... I think one barrier is **the availability of real-time or near time sort of data.**" - FA "And so generally, just maybe **not having the data we need when we need it**.I think that some faculty don't know how to get the data they need. So it may be there, but they or **I don't know how to access it.**" - ID "I have access to, like I said, just more general data, but when we're designing for a specific course I would say **that there's a lot of gaps that could be filled** that would make that process better for us and then for the students too." -ID

Potential Strategies

- Make sure data governance processes are present and supported across institution
- Campus leadership should sponsor this and invest accordingly
- IT / data integration is a big piece of the solution and must be involved with an eye towards holistic solutions
- Decide on "buy" vs "build" or a hybrid for final solution
- Start with specific questions and back into specific data requirements
- Think big and start small
- Campus needs a long term data management and analytics strategy
- Make collated student course eval data generally available for related courses (+1)
- Clearly articulate the question(s) needing answering, then identify the data needed to answer the question(s).
- Building a data repository that extracts loads and refines the data to prepare it for use and analysis. Leverage existing data definitions from institutional research and combine with the learning data for consistent use of data and data definitions.
- Leader
- Clearly identify the problem you are trying to solve and what data is required to understand the problem/impact of solutions
- Ask what will the data allow you to do when selecting data points
- Look for "small wins" -- e.g. at the course/department/program level -- where you can generate useful data to answer real, specific questions (success breeds success)

- Leadership needs to recognize people and roles will change and to NOT change or reset data processes every time there is a change. You end up resetting a process over and over every few years
- Prioritize the problem/use cases you are trying to solve/address and questions that you are using data to answer; otherwise folks start with the data available and get frustrated with how that doesn't fit their needs (+1)

Key Theme: Data Literacy

50% of Responses

Codebook Definition	Understanding of what learning data means and how it might be utilized
Example Responses	"And the use of it, **the interpretation and the use of it.** It's easy to get really, you look at something simple like Joe didn't logon last week. **Okay, so what does that really mean?** Was he sick? What happened? So there's more to just looking at the data. You've got to delve deeper into it than some of the data reveals. So that's a possible problem **where you've got data and you misinterpret it because you don't have the full picture**, all of the other factors that could be relating to that." -FA "I guess knowing what it means, I mean, yes, we can collect demographic data and then we can collect any various types of interactions within Canvas. But I mean, **I guess knowing what that means.**" – ID "Personally it's just my own **confidence in being able to utilize mine and utilize the data.** Analyze it and use it. " -CA

Potential Strategies

- Create data dictionary +1
- Data literacy effort to support users in how they could / should use data available to them
- This is a cultural issue: are we doing enough to move the culture towards data informed decisions +1
- Data stewardship council can help with data definition with data that spans across the institution
- Provide examples of how others have used the data, what questions they've addressed or actions they've taken informed by various data. +1
- Hold workshops for faculty about how to read and use data +1 +1
- Have consultants available (e.g., from the instructor resource center of members of a data committee) to help faculty interpret data specific to their teaching or their discipline +1
- Work toward improving institutional outcomes, publicizing progress as it occurs. In that context, it makes sense for faculty and staff to develop data literacy. (See comment on sources of philosophical resistance).
- Share success stories of other faculty using the data to impact learning outcomes +1
- Create dashboards with prescriptive prompts based on common use cases ("if your data shows this, other faculty recommend doing this") +2 (here is an example dashboard used by U of WI System https://www.wisconsin.edu/accountability/)

- Provide examples of use cases and tell stories - both positive and negative (here's what this can do, but also here's what it can't - learn from Dartmouth and others about the use of data to negative ends where it's not appropriate to do so)
- It is important to understand that operational data needs to be managed and governed
- Q&As (+1, at times that are convenient for adjuncts too!)
- Work with faculty in different departments who are already excited about using data; they can be ambassadors and get their colleagues on board

Key Theme: No Process or Strategy

50% of Responses

Codebook Definition	The person may have access to data, but there is currently no strategy or process in place for utilizing it in a meaningful way
Example Responses	"I would say is that we don't use the data that we have correctly, and **we don't use all the data that we have access to** that we should be using to help us guide us."-FA "We're not moving forward in deciding to not necessarily into the corporate creating models. We're not being sort of at the level that I'm at being able to have access to that data to start having conversations. **We don't have a data analysis policy or strategy at this point.**" –ID "We have a hard time reaching the students that really need to have that data or a discussion of that data. **We haven't figured that out.**" -CA

Potential Strategies

- Need to find an institutional champion who will engage with stakeholders to develop a strategy that aligns with overarching mission/vision.
- Align data (collection/analysis) with strategic initiatives
- Answer: " what are our goals and how can they be supported by data"?
- Think of analytics as useful in a larger context: an institution where an increasing number of faculty and staff see that it's possible and urgent to improve institutional outcomes. Success with analytics both benefits from and feeds to that kind of larger improvement process.
- Develop specific metrics that are tied to prescripted actions - even before developing any analytics
- Still, keep exploratory analytics available as often you find great insights that can be actionable through exploration
- Create departmental assessment plans and a cadence for reviewing progress on those plans - once a semester, for example. Build this into the academic calendar and the course revision process.
- Align data understanding, professional learning and accountability as part of evaluation (the need for KSAs)
- Stakeholders who are data champions tend to be data-oriented to a great degree. One must remember to consider "What you measure becomes a target" with great solemnity.

- Governance is important here, too. How are these efforts aligned with the goals of stakeholders and with institutional strategy? If it is truly strategic and contributing to overall institutional or unit goals, how is the effort resourced? Defining process and strategy should be an early step in this work.

Key Theme: It Takes Time and Effort

31.8% of Responses

Codebook Definition	Idea that working with data is a difficult process that requires time and effort. Both preparatory work as well as time to make a change based on the data.
Example Responses	"**Time, time is always an issue.** Time is always against us. Again, because of the abundance of the data, the interpretation of the data." - FA "**The amount of time, balancing other projects.** I think we go back to again, doing more with less. I know at some points, my supervisor is like, 'You could spend more time on that', or 'Hey, no, you have these other projects.'" – ID "A barrier would be, okay, we have enough people that have the skills to analyze this data in a meaningful way. So, **having the staff to do that** I can imagine it'd be a barrier." -CA

Potential Strategies

- Course release or per hour payment for working on this kind of project
- It's always true that, in the short term, we don't have the time and we don't have the money (for anything new). To get the time and money requires taking a longer view and pushing persistently to gradually reallocate both. And for that to happen, enough people need unmistakable evidence that this process can be rewarding. SE
- Institutional willingness to invest in a data strategy and execution is needed.
- Getting the right people into the right roles to support this work. Getting those positions appropriately resourced to be able to recruit and retain.

Key Theme: Philosophical Resistance

31.8% of Responses

Codebook Definition	Personal understanding or philosophical concerns limit the use of learning data. This may be due to skepticism of benefits of validity of the data.
Example Responses	"But I think the **biggest challenge overall is just resistance. The feeling that academia is being treated like yet another business process.** So I think there's often a lot of resistance, especially among faculty to do that, because to use data to contribute to data collection, to be subjected to data collection to be told, "Oh, you should be doing things differently, because the data tells us such and such." – FA "However, when someone who may be from the humanities course, who hasn't really had a lot of experience with data-driven decision making **will potentially be more skeptical about that since they're not as familiar with that process.** So I can see that it's sort of an amount of and really a cultural shift around like sophistication with data or really comfort with it." –ID "And it was just like **'Let's just trust the AI[?]'** Because I haven't been convinced that even that it's the most efficient way to support student success, to be honest." - CA

Comments on philosophical resistance

- In addition to the issues mentioned above, there is also a collision with the Instruction Paradigm (Barr and Tagg, 1996) which includes assumptions that learning outcomes are solely the student's responsibility (faculty can deliver content but can't influence the student's aptitudes for appreciating and mastering it). In this paradigm, the idea of improving institutional learning outcomes is nonsensical, since those outcomes are not the institution's responsibility. (This pov is probably most common with STEM faculty.) THe paradigm doesn't provide a rationale for faculty and staff to work together to collect, manage, and use this evidence. Most importantly, this paradigm suggests that any effort by faculty and/or staff on this problem is a threat to academic freedom and/or administrivia. For more on this, see recent book, *Pursuing Quality, Access, and Affordability: A Field Guide to Improving Higher Education (2021).* ELI session on how this can be done is available on-demand to conference participants. SE

Potential Strategies

- Incentivize faculty through tenure recognition of work in analytics to improve teaching and learning
- For institutions that do not struggle with retention or student success, how do we make the case for looking at this data? As the recruitment process opens up, more 1st gen students are accepted, and this becomes an important tool for supporting those students - helping them be successful.
- Data governance structure should help here to cut through some of the indecision and arguments: solve this organizationally by listening to the concerns, take them into account, and have a single deciding body addressing them within a time box
- Celebrate successes
- Survey faculty to see what they think using analytics will lead to and address some of the myths
- Cultural change / training involved in getting functional units (who best understand their data) to take ownership & responsibility for data currency, hygiene, consistency, etc, rather than relying on limited IT resources to do it - there is *so much* data that a distributed model is the only way to accomplish the task.
- Be more critical and open about limits of data and learning analytics (+1)
- faculty ambassadors are also important here; important to have faculty lead talks or Q&As because many will be more skeptical if it comes from admins or staff (+1)
- Generate interest in analytics by engaging with students to drive student demand for nudges/feedback, etc. (ground up approach)

Key Theme: Privacy, Security, or Misuse

31.8% of Responses

Codebook Definition	Privacy concerns speak to the concerns of how data may be misused. There are also internal concerns with sharing any personal instructional data.
Example Responses	"But I would say there **probably are privacy concerns and concerns about people being willing to just share information about their courses.** Faculty tend to be pretty protective of their information and their syllabi and what they're doing. And so I think some of it is going to be that. Also, on the student side, students don't necessarily think about it, their information being used."-FA "So one barrier for example, is privacy which I think is a good barrier. **I think we shouldn't necessarily collect everything from every single student and then share it with everyone.** Think we should use it purposefully. Some data that we do collect, I don't think we use well." -ID "I mean, with how many letters I've gotten, in the past couple months, about how many times my data has been breached from institutions of higher learning. I have **very little faith in the security** of any of that." -CA

Potential Strategies

- Students are becoming more aware of how their data might be used and will start questioning about how the data is going to be used. Especially as you begin to surface data to students. The use of location based data seems to be an area of opposition.
- Not a strategy, but I think the level of student tracking implied by the keynote speech is somewhere pretty far down the slippery slope into intrusion/4th amendment violation spectrum of administration-by-data.
- Tutors and academic coaches are asked to do a lot of the work closing the achievement gap but they are often not given access to information on students' grades or disability needs that would really help (they don't need to know the disability, just the accommodations). I highly advocate including them in learning management/early alert etc. just as an observer is fine, but the information helps them help the student and they should be considered part of the educational team
- Create tools to allow students to benefit from their own data