Learning Analytics in Higher Education: Stakeholder Voices

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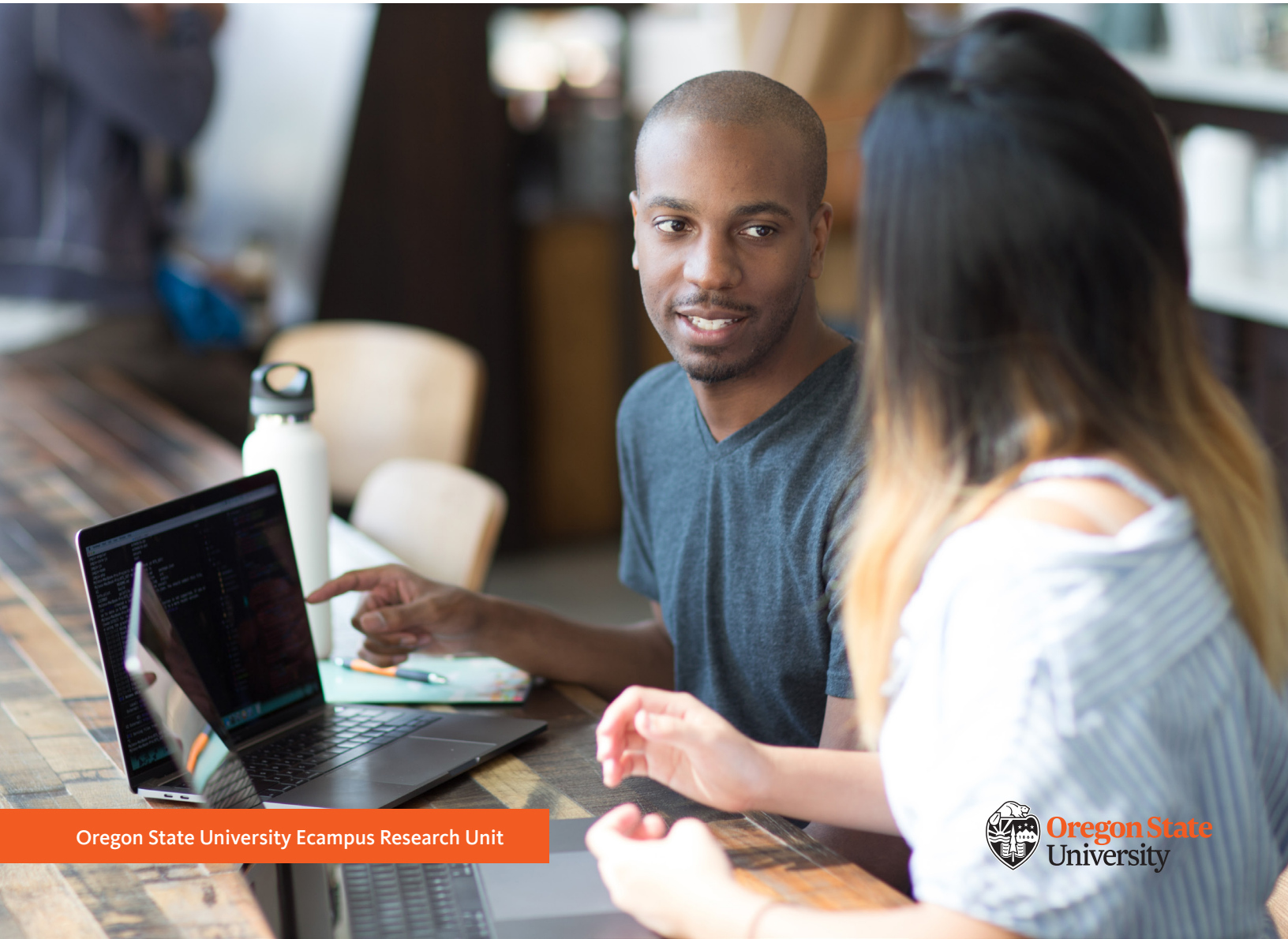

Oregon State University Ecampus Research Unit

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Background

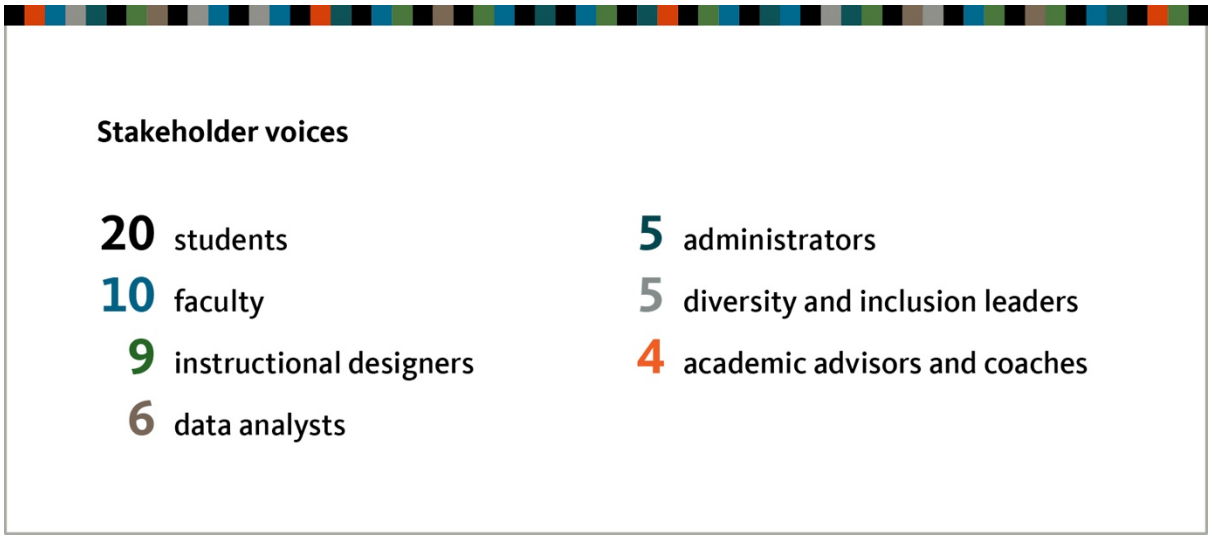
This report summarizes the initial findings of a cross-institutional study that explored *learning analytics from a systems perspective* and was conducted by the first cohort of the Online Teaching and Learning Research Seminars program, hosted by Oregon State University Ecampus. This project was conceptualized from a systems perspective which focuses on higher education as a system that involves different connected interrelated stakeholder groups who may have different perspectives and experiences.

A multidisciplinary research team of ten researchers with expertise in online education was selected and assembled based on their background and philosophies regarding learning analytics in higher education. These researchers each had multiple years of experience in online higher education and thus were positioned to consider the implications of learning analytics in online education. Learning analytics is the measurement, collection, analysis and actionable reporting of data about, and with, learners and their environments for purposes of understanding and optimizing learning and the contexts in which learning occurs (adapted from the Society for Learning Analytics Research, 2011). With the increasing use of learning management systems, it is important to note that the collection and use of learner data is increasingly relevant in all higher education modalities including online, blended/hybrid, and traditional face-to-face courses.

In a collaborative setting, the research team examined existing literature and found it lacking the critical voices of stakeholders that generate, collect, and utilize learning analytics across higher education institutions. Therefore, a multi-site interview study was designed to address the gap and investigate stakeholders' perspectives regarding learning analytics in higher education from a systems perspective. The team recognized that individuals may not have the same understanding of the term "learning analytics," thus interview questions used the terms learning data and learner data.

In 2020, the researchers identified seven stakeholder groups from eight higher education institutions across the United States to conduct structured and semi-structured interviews. The stakeholder groups were chosen because they are directly impacted or involved in collecting and using learner data. Fifty-nine total participants were interviewed for this study, including 20 students, ten faculty, nine instructional designers, six data analysts, five administrators, four academic advisors and coaches, and five diversity and inclusion leaders. See Appendix A for a list the participant numbers from each university. Participants completed 60-minute interviews via Zoom and addressed questions in the following areas: 1) definitions and general uses of data in higher education, 2) perceived benefits, helpfulness, and utility of learning and learner data, 3) perceived barriers, challenges, or concerns about learning and learner data, 4) perceptions of privacy, transparency, consent, and autonomy related to data in

higher education, and 5) data uses and limitations. Interviews were recorded and transcribed for data analysis.



After the interview phase concluded, researchers formed analysis teams to explore the following four topics: 1) perspectives on data collection, 2) concerns with bias and equity, 3) access and useability of data, and 4) data literacy. All analysis teams used Saldaña (2016) to frame their coding strategies and collaborated across teams to share findings and feedback. In the following sections, we will summarize initial findings from the four analysis areas and provide implications for practice.

What Data Should We Be Collecting About Students and Instructors? Perspectives from Students and Faculty

When institutions have the potential to collect large amounts of data in so many different ways, what data *should* be collected? What data *should not* be collected? Students and faculty were asked these open-ended questions to gauge what data they think *should* and *should not* be collected about them (students and faculty). This section will summarize possible reasons why data should and should not be collected, as well as the results of our analyses.

There are several reasons why institutions *should* be collecting data about students and faculty. Learning analytics aspires to use data to better understand the learning process and use that information to develop actionable solutions (Dawson, Joksimovic, Poquet, & Siemens, 2019; Siemens, 2013). Data collected about students and faculty have the potential to lead to better methods for serving stakeholders, and ultimately, better teaching and learning processes. In addition to studying teaching and learning processes, data can also contribute to understanding the educational experience. For example, data collected about student groups, such as students who are parents, can lead to a better understanding of the barriers that

certain student groups may face when pursuing their education. Ultimately, data collected about students and faculty have the potential to enhance learning, teaching, and the higher education experience.

Although data can be used to enhance student and faculty performance, stakeholders have cited concerns regarding ethics and privacy (e.g. Rubel & Jones, 2016; Slade & Prinsloo, 2013) when it comes to collecting, analyzing, and using student and faculty data. Many feel that stakeholders have the right to know what data is being collected about them, and how that data is being used. It is important to consider a) what data is being collected, b) who that data is about, and c) who has access to that data (e.g. Rubel & Jones, 2016).

For this study, we analyzed ten student and 20 faculty responses to these four questions:

1. Are there learning data that **should** be used to evaluate the student experience?
2. Are there learning data that **should not** be used to evaluate the student experience?
3. Are there instructor data that **should** be used to evaluate the student experience?
4. Are there instructor data that **should not** be used to evaluate the student experience?

The following summarizes the themes that emerged from the analyses.

Data that "Should" Be Collected

Student and instructor satisfaction

Our first theme describes information about course and campus experiences that are collected through evaluations or surveys. Both students (50%) and faculty (20%) agreed that their satisfaction data "*should be paid attention to*." One student suggested that perceptions of satisfaction "*can influence grades*," as well as other important outcomes.

Teaching performance

A second theme emerged about instructors' teaching behaviors collected in teaching evaluations or through instructor responsiveness indicators. Again, almost all of the faculty (90%) in the sample highlighted the importance of collecting teaching performance data. In addition, they suggested that data should be collected about pedagogy and teaching methods, including "*what works well and what doesn't*," and "*how the teacher is teaching*."

Student engagement

Our third theme is information regarding students' behaviors that indicate participation and effort levels, for example, timeliness or interaction data in a learning management system (LMS). Students (30%) and faculty (20%) agreed that student engagement data should be collected, including students' "*full participation in class*." Students suggested that this data can be measured "*by all kinds of different things*," and indicated that student engagement data includes, but is not limited to attendance, time spent completing a task, and interaction with course content.

How Should This Data Be Collected?

Student performance

A fourth theme was analyzed as information related to students' performance in their coursework, such as final grades or assignment feedback. Many students highlighted the importance of collecting student performance data (50%). However, some students expressed concern about student performance data (25%), suggesting that additional data is needed to understand the student experience. These students were concerned that institutions may focus too heavily on grades and outcomes when other variables and outputs may be equally important.

Student and instructor demographics

We categorized our fifth theme as relatively stable characteristics used to group individuals (e.g. gender, race/ethnicity). Overall, there were no types of data that participants agreed "should not" be collected. However, both students (30%) and faculty (20%) voiced concerns about using demographic data. For example, one student said, "*I have noticed that sometimes female professors are not treated as... not respected as much with the tone*," suggesting that they were worried that collecting demographic data could lead to biases. However, another student said, "*I think that student demographics, like how you identify, definitely is a part of your experience*," suggesting that they thought demographic data is useful when studying the educational experience.

Implications for Practice

The results of these analyses suggest that although students and faculty think a lot of data should be collected at higher education institutions, they are concerned about how certain types of data (i.e. demographic data and student performance data) could be misused. Future research should further consider what domains of data are appropriate for certain stakeholders to use in their professional roles, as these analyses focused on domains of data relevant to students and faculty. For example, future work could investigate perceptions of specific demographic variables (e.g. participant sexuality) and specific stakeholder groups (e.g. instructors). Future work can also look into ways of collecting data about student engagement and the benefits and challenges of different kinds of student engagement data. Additionally, since some participants expressed concern about data being used as a way to exacerbate biases, future work should continue to shed light on bias in the uses of student and instructor data, as one of our analysis teams explored through the student lens. Therefore, in our next section, we will address preliminary findings from the analysis team that studied student concerns with issues of bias and equity in learner data.

Concerns of Bias and Equity in the Uses of Learner Data: The Student Perspective

Across the system of stakeholders in higher education lies a spectrum of power in which students, namely those who produce the data, are left vulnerable and unaware of how their behaviors, characteristics, and outcomes are used for research and evaluation purposes. Along this spectrum is a gradual shift of access to data, to those who have the power to influence and act upon it. Therefore, we began our analysis with student responses because it was pertinent to center the student voice in our approach. To this end, our analysis team analyzed the following two questions:

1. To what degree are you concerned with issues of bias in the uses of learner data?
2. To what degree are you concerned with issues of equity in the uses of learner data?

The following provides a summary of the themes arising from the analysis of student responses in which 19 students responded to the bias question, and 20 students responded to the equity question.

Concerns of Bias and Equity

Degree of concern

A significant percentage of student participants (95%) expressed thoughts and feelings about their level or degree of concern with issues of bias in learner data. The degrees of concern regarding bias varied across participants from "*not much of a concern*" to "*very concerned*." A few said they did not know, were unsure, or that it depended on the context. Similarly, 84% of coded student responses were attributed to the degree of concern with issues of equity in learner data. Additionally, responses were organized into ordinal levels, from "*no concern*," to "*high concern*," and two students choose to either not answer the question or not address the question. Several participants acknowledged inexperience with specific ways in which learner data is governed and stated degrees of concern generally. Also, participants included expressions of trusting the good faith of institutional actors, inexperience with learner data, and complex limitations of learner data.

Biased decisions in the analysis of learning data

More than half of the students recognized that learner data was being used to make decisions about the educational process and described these decisions as being influenced or biased in some way. Students expressed their awareness that learner data may be used to justify decisions, exclude individuals, and even harm students. Several students described data being used to make assumptions about student behavior or characteristics. A few also described the bias or "*preconceived notions*" that may influence the interpretation of learner data. One student shared,

> "*I think that it depends how you're analyzing the data and how you are … Sometimes in the people analyzing it, they can have some sort of preconceived notion, and it's important to know that the people who are actually analyzing the data, that they will have a neutral and a real focus on the data itself, and not on the notions of the preconceived information that they had.*"

On the topic of equity in learner data, nearly half of the students referenced the possibility of bias in decision-making. At the same time, some students noted concerns around bias in institutional datasets. The most prominent concerns referenced issues that might arise with the interpretation of data, such as intangible, external, or confounding data not included in available datasets. Multiple students identified the possible influence of personal or institutional interests in influencing data-informed decision-making.

Specific identity markers

A smaller percentage of students (26%) disclosed a reference to an identity marker concerning bias in collecting or using learner data. Of these, one felt that their identity gave them an advantage. Two reported a degree of concern because they identified as minorities, and two acknowledged demographic data is used to categorize "*differences in people*." Three students referred to specific identity markers or groups when asked about their concerns with equity. Included in these responses were references to race, gender, religion, sex, socioeconomic status, and global geographic region. However, even among those comments, the relevance of these specific identity markers varied. Of note, two of these three individuals mentioned specific identity markers in making an argument for applying data equally (regardless of identity) rather than applying data with a focus on equity.

Limitations of learner data

When asked about bias concerns, 26% of the student participants described examples and awareness of the limitations or access to learner data. In particular, students articulated concerns regarding the one-dimensionality of data, the "*reliability of the source*" of data, and differences in data interpretation by various stakeholder groups. When asked about equity concerns, students (30%) described one or more learner and learning data limitations, including the lack of access to data, lack of predictive value of learner data, and non-representative samples. One response cited danger specifically,

> "*I think that's where there's a danger in data because yeah, you look at it and you don't get to see that person, or what are the other mitigating factors? I think that data doesn't sometimes motivate people to ask additional questions.*"

Relationship with stakeholders

When asked about concerns of bias, 21% of the student participants referenced relationships with people at the university or specifically stakeholders (faculty, staff, administrators) who are responsible for collecting and analyzing learning data. These participant responses reflected an acknowledgement that "*professors*," "*admissions staff*," and "*department heads*"

were in positions of power and control and that bias may exist in how data is interpreted. When asked about equity, 25% of students referenced institutional relationships. Three responses discussed positive experiences with instructors using learner data. One student felt that students hold responsibility for initiating academic support. Another student reported having no experience with inequity in the context of learner data use. While two students raised concerns for institutional stakeholders, one mentioned using information beyond learning data as necessary to support students. The other student raised a concern that institutions use data for the benefit of the student body, not only an institutional advantage.

Non-Learner data

Two student participants discussed data unrelated to their educational activities and academic performance in response to the bias question. These students shared examples of data bias in conducting preliminary research for projects or discussed data bias as content in their coursework. Similarly, in response to the equity question, three students did not address learner or learning data directly. Instead, two of these students responded by referencing bias or fairness in a broader higher education context, but not in a way that referenced relevant data.

Implications for Practice

Two implications emerged from our analysis regarding concerns about bias and equity. First, the ambiguity in student responses speaks to a possible gap between how students perceive bias and equity in the uses of learner data and the practices institutions and researchers are using to engage with learning data in addressing potential areas of bias and equity. Second, student participants rarely distinguished concerns around equity as different from bias or equality. Therefore, acting on this data requires careful consideration of institutional responsibility in clarifying issues of bias and equity in learning data and empowering learners with the agency to engage meaningfully with these issues.

At a minimum, institutions should assemble a broad range of stakeholders, including students, to develop policy and practice around the use of learner data to inform decision making, direction and actionable efforts. Going beyond the minimum, institutions should strive to create a data-informed, student-centered learning culture integrated within their system. When implementing digital technologies and analytic practices that collect or act upon learner and learning data, an emphasis should be placed on transparency in which students and others are made aware of the data being collected, instructed in how it is being used, and empowered to opt-in or out of such data collection.

Now, we will shift from the student perspective to explore perceptions of faculty and professional staff who access or seek to engage with learning data to support student academic success. The following section will illustrate faculty, instructional designer, and academic advisor perspectives about data access and interpretation to support and enhance learning.

Barriers to Access and Use of Learning Analytics Data: Perspectives from Faculty, Instructional Designers and Academic Advisors

This analysis sought to understand how stakeholders directly involved with the teaching and learning process differed in perceptions regarding their ability to access and effectively use learning data. We focused our analysis on three stakeholder groups: faculty (10), instructional designers (9), and academic advisors (4) to analyze the following questions regarding barriers to the access and use of learning data:

1. What barriers exist to the collection, analysis, and use of data at your institution?
2. What do you consider to be the most challenging component of using data to improve learning and the student experience?
3. Do you personally have concerns about accessing learning data?

Our analysis uncovered six high-level barriers to the use and access of learning data which we articulate in the following section.

Barriers to Access and Use

Availability of useful data

The most commonly identified barrier mentioned by 95% of participants from these stakeholder groups was the quality and utility of learning data. Participants who discussed this theme noted that while their institution may have data, there were concerns regarding their availability or usefulness in answering strategic questions. Qualities of useful learning data were contextualized as to where the data was sourced and specificity as to when and where a learning event occurred. Additionally, several respondents recognized that such useful data might exist at their institution, but they didn't have access.

Data literacy

This theme, mentioned by 50% of participants, speaks to the challenge that utilizing learning data requires a level of literacy on the part of the interpreter, including the ability to understand what the data mean and how to use them. One academic advisor argued that training should be a necessary component of any learning data initiative:

> "*I think providing all of us who will use the data with really good solid training on how to access it, how to mine it, what it means, how it should be used, how it should not be used to really have the full package put together before they just throw something at us*."

Lack of process and strategy

Another theme identified by 50% of the participants was the lack of a process or strategy around utilizing learning data. Participants indicated that they knew their institutions were collecting data and they may have individual access to it. Still, there was a lack of identified

processes for using that data to enact meaningful change in the teaching and learning environment.

Time and effort

The fourth theme, cited by 32% of the participants, illustrates the resources required to capture, clean, and utilize learning data adequately. Participants noted that working with data often requires a large amount of manual work, for which an institution may not be fully equipped. This resource shortage is compounded by the volume of data that is generated in institutional learning systems. A few participants spoke to the need for intelligent systems that could automatically parse the data and draw insights from them. One instructional designer noted,

> "*We're still doing a lot of manual work to pull up the data and then to use this data to reach out to wherever, and if there could be more intelligent system available. Yeah, we surely use those systems to improve our efficiency and to better support the student*."

Philosophical resistance or skepticism

The fifth theme, mentioned by 32% of the participants, centered around philosophical resistance and skepticism about using certain forms of data in higher education. These participants shared concerns with the idea that learning could be captured or accurately measured through the use of data alone. In tandem with this were questions regarding the validity of the data. For example, one instructional designer stated,

> "*I've had a few instances here where the information that the data is presenting is not favorable outcomes for the recipient of that information. So reasonably, the question is, 'Where did this data come from? How is it sourced? How sure are we about this data?' So I'm going to imagine that as humans when you're told that something is not what you would necessarily like, you are going to question the validity of that information.*"

Privacy, security and misuse

The last theme, cited by 32% of the participants, focused on issues of privacy, security, and misuse of data. This theme addressed 1) concerns about others being able to see what was happening in a faculty member's course and 2) worries about the misuse of private student data. One faculty noted that often what is missing when using learning data is context. They said,

> "*[W]hen you're looking at something from the outside, you're looking at it out of context. And that's one thing that I worry about in terms of how data gets collected and used, if you don't understand the context in which they're being used.*"

Implications for Practice

The intent of our analysis was to derive barriers to the use of learning data within the practice and context of teaching and learning. Institutional strategic planning initiatives, which include learning data as a supportive measure or objective, need to ensure the inclusion of proactive criteria to mitigate concerns from stakeholders about the barriers summarized in this section. To generate potential strategies and overcome these barriers, we presented our findings at the 2021 Educause Learning Initiative and solicited ideas from our session participants via a collaborative document. Since the document is anonymous, the ideas cannot be fully attributed. The following table includes an excerpt of strategies. For a full list, visit https://bit.ly/stuckinla

Theme	**Potential Strategy**
Availability of useful data	*"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."* *"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)."*
Data literacy	*"Hold workshops for faculty about how to read and use data."* *"Share success stories of other faculty using the data to impact learning outcomes."*
Lack of process and strategy	*"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."*
Time and effort	*"Getting the right people into the right roles to support this work. Getting those positions appropriately resourced to be able to recruit and retain."*
Philosophical resistance or skepticism	*"Incentivize faculty through tenure recognition of work in analytics to improve teaching and learning."* *"Be more critical and open about limits of data and learning analytics."*
Privacy, security, and misuse	*"Create tools to allow students to benefit from their own data."*

In the final section, we will explore a reoccurring theme that has threaded itself through each analysis area and our overall project, data literacy. With the increased use of integrated

technology systems, higher education institutions generate and have access to significantly more information about their students, teachers, and staff. However, the capacity to access these data has not coincided with the correspondent growth of decision-makers ability to use these data within higher educational contexts. The gap between individuals within these contexts to effectively use and understand the functions of these data can result in paralysis at best and adverse outcomes for students at worst.

Understanding Data Literacy Practices: Perspectives from Faculty and Administrators

We understand data literacy to be a complex, multifaceted constellation of practices, structures, and processes. Further, we view data literacy as an inherently contextual notion that can result in different meanings for different individuals and groups based on various social, historical, and systemic components embedded within any educational institution. In short, then, we understand data literacy to manifest differently based on a complex of factors. These can include (but are not limited to) the following:

- The ability to conduct and engage in practices that are recognized by others as data literate: for example, interpreting the behavioral measures from a digital system through a statistical model or process.
- The ability to hold oneself and others accountable to existing norms: for instance, advising an individual when they make a decision from a statistical model that violates one of its assumptions that a correction is needed.

A final area of analysis prioritized understanding how administrators (5) and faculty (10) framed their use of data in their contexts to understand what their perceived notions of data literacy entailed.

This choice was motivated by the need to understand how faculty and administrators, as those generally in a position to make decisions and use data, understood the use of data related to the notions of learning analytics and data-driven decision-making. Consequently, we focused on understanding the notion of data use by these stakeholder groups in terms of what practices they associated with using data and how those practices were evaluated and valued within their institutional contexts.

To address this question of data practices, we coded the full interview transcript for all faculty and administrators, identified relevant themes within the use of data in addition to the limits of such use. Using a thematic analysis approach (Braun & Clark, 2006), we repeatedly engaged with and discussed the data to identify relevant themes on data-related practices. These discussions focused on mediating disagreements and identifying broader thematic relationships that existed within the data source.

In the following section, we will focus on four subthemes that emerged under our parent themes: data applications (219 references), limitations of data (115 references), data expertise (54 references) and measures of engagement (48 references).

Data and assessment

A principal focus of both faculty and administrators was framing data use as a process of assessment. Both groups tended to focus on what data suggested about students' learning of a particular skill or whether additional resources were needed for students to meet prescribed goals within and beyond the course context. Furthermore, this framing generally focused on using assessments (e.g., assignments and exams) as the primary data sources and indicators of students' learning. As the following quotes indicate, both administrators and faculty generally adopted this framing:

> *"I can look at the individual student name and whether they turned in their assignments, and what their grades were for their individual assignments, and how they answered questions, and what feedback they were given."* -Faculty

> *"So it's not only the student data we have to use [to determine whether] there is effective learning happening, but what is the faculty role in that effective learning? From creating the content, creating the assessments and measuring the content, evaluating the content so that we can improve it for later usage."*
> - Administrator

However, while faculty were more focused on their students' development of mastery within their discipline, and thus how to represent that through data usage, administrators were also interested in framing data use as assessing instructors' teaching practices and whether further mediation was necessary to assist instructors. In both of these framings, however, the common theme of application of data tended towards more frequently used metrics such as students' performance on assessments and the degree to which those assessments represented authentic indicators of learning.

Measures of engagement

Where more novel data applications from LMSs were referenced (one of the Measures of Engagement themes), we categorized these as potential indicators of engagement and interaction, as one administrator stated,

> *"I think data that we can extract or metrics we can extract from a learning management system, if thought of properly can be proxies for certain aspects of faculty performance. Vis a vis classroom presence to the students. So data can be useful in that context."*

Data skepticism

Further, administrators expressed skepticism whether LMS or "click data" were good measures of learners' or instructors' behavior both within and outside a course context. This skepticism was often a result of the participants' perceptions of the Limitations of Data, a parent theme. While the source of this skepticism was varied, frequently cited reasons tended towards the following themes: the historical and situated nature in which these data sources were

produced; the lack of information or resources on the construction of measures taken from these data; and the need for more support in both the construction and interpretation of these more novel resources for data interpretation and decision making.

Convenience data

Taking stock, faculty and administrators mainly focused on more traditional metrics and assessment. When asked about learning data, they were likely to think of the convenience data that are easiest for them to access. As such, their literacy was bounded by the capacity to make sense of and derive action on these resources. In contrast, the capacity to use more technically demanding resources, such as LMS log data, was observed to be much more limited due to a constellation of factors, each of which are bounded into separate personal, social, and institutional histories. The use of data within these stakeholder groups presents numerous opportunities for further development in the skills and expanded conceptualizations of data management and interpretation.

Implications for Practice

Since much of the skepticism around data comes from faculty and adminisrators' lack of familiarity working with data, it will come as no surprise that several participants indicated they would like training in statistics to better understand and use learning data. Such statistical knowledge and training enables them to know whether the data points gathered are meaningful or random, whether correlations that at first glance seem important are truly significant and whether the number of observations in a data set is enough to reach any conclusions.

Several participants across the two groups mentioned professional development in the form of workshops. However, even more so, participants wanted to know specifically about best practices in learning data, more specifically, what their colleagues in other departments are doing. There is an essential difference between these kinds of workshops and the kind of out-of-the-box training we often encounter for LMS and data visualization tools: faculty and administrators indicated they want to learn from their peers and engage in dialogue about these issues, rather than be lectured in the abstract. Faculty members want their institutions to make professional development directly relevant to the participant's core responsibilities and teach technical skills they can use.

Perhaps most surprising, participants indicated they want to know how the data are created or gathered and their limitations. Participants are aware that limitations exist with the data available to them and that it is frequently unclear what a given metric means or how it is calculated- all data have limitations and are particular to a specific context. In this way, participants want to 'get under the hood' to avoid misinterpreting learning data. If this is a real and common sentiment among faculty at your institution, it may be a serious impediment to the use and usefulness of learning data. Engaging faculty and administrators in conversations about the limitations and weaknesses of available data while promoting transparency about

the context within and the means by which they are collected, may encourage the use of these data to improve student and institutional outcomes.

Final Thoughts

This report is an initial attempt to illuminate the critical voices and their perspectives to inform higher education's practices, resources, policies and strategic planning initiatives that involve learner data. We presented preliminary findings from the four analysis areas: 1) perspectives on data collection, 2) concerns with bias and equity, 3) access and useability of data, and 4) data literacy. These findings demonstrate the similarities and contrasting views regarding the needs and expectations of stakeholders generating, collecting and utilizing learning data across higher education institutions.

Based on these preliminary findings, one might summarize that stakeholder's needs and expectations are not in alignment. All stakeholders, from students to administrators, suggest a critical need for training and development to improve their awareness, knowledge, competencies and skills in data interpretation. Other stakeholder groups, those the university employs, cite resource needs such as automated and integrated solutions to collect and report data more efficiently. Additionally, it appears there is a high level of skepticism from all stakeholders that stems from the lack of transparency around what data are collected, who can access the data, and how those data inform decisions to enhance the learning experience. Although there are opportunities for improvement in learning analytics efforts across higher education institutions, stakeholders indicate a sense of optimism and a belief that relevant learning data is necessary. Institutions should make more significant efforts to involve stakeholders (especially students) in creating learning data initiatives, especially in defining data that should, or should not be collected. Students' participation in learning data initiatives can also help mitigate bias and equity issues in data use and collection.

As we look forward, the research cohort intends to continue analysis and present additional findings to discuss implications regarding learning analytics in higher education from a systems perspective. We encourage you to reflect and evaluate your current learning data processes and infrastructures and consider inclusive solutions to meet the needs and expectations of all stakeholders in your system.

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About the Research Unit at Oregon State University Ecampus

Vision

To be leaders in the field of online higher education research through contributing new knowledge to the field, advancing research literacy, building researcher communities and guiding national conversations around actionable research in online teaching and learning.

Mission

The Ecampus Research Unit responds to and forecasts the needs and challenges of the online education field through conducting original research; fostering strategic collaborations; and creating evidence-based resources and tools that contribute to effective online teaching, learning and program administration.

Contact us

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Research Priorities

As a research unit dedicated to responding to and forecasting the needs and challenges of the field of online teaching and learning, we focus on the following areas:

- Exploring the efficacy of modalities, technologies and pedagogical methods
- Promoting research literacy and evidence-based decision-making
- Building communities to support and encourage research networks

The Ecampus Research Unit prioritizes actionable research and projects that cross more than one of these areas.

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