Departmental Data and Equity: Disaggregation

Disaggregation is the process of breaking data into smaller subgroups to make comparisons, understand trends, or generate insights for program improvement.

It is also one of the key practices of *equity-minded* assessment, which is the use of assessment to identify and meaningfully address inequity in student outcomes. Used *wisely,* it is one of the most powerful tools we have for detecting and addressing **equity gaps** and for gaining deeper understandings of factors that affect student learning.

"Data" to be disaggregated can include:

- graduation rates
- course grades
- participation in events
- internship placements
- **learning assessment data**
- survey responses
- focus group responses
- exit interview responses
- job placement data
- any other metrics that a department uses to inform improvement or judge the achievement of a department's strategic goals and program learning outcomes.

Disaggregation factors can include any number of salient background, identity, or situational factors such as:

- Gender
- Ethnicity
- First Generation
- Socio-Economic Status*
- Placement/Test Scores
- Pathways (e.g., courses taken)
- Use of Supplemental Instruction
- Transfer
- Modality of Instruction (online, hybrid, f2f)
- Time of Day Courses Offered
- Old vs. New Curriculum
- Support/Training offered to Instructors (e.g., comparing the outcomes of students of GTAs who participated in a mentoring program vs. those who did not)

Disaggregation is essential for identifying and understanding unmet student needs that may align with one or more of the above factors. Particularly for **large programs**, or **programs offering large enrollment GER courses**, disaggregation can be a powerful tool to help departments work toward eliminating equity/opportunity gaps and improving courses and curriculum in meaningful ways.

**SES data (i.e., Pell eligibility data) for a student dataset can only be obtained by special permission from director of Financial Aid, and must be obtained through the Office of Assessment and Institutional Research (OAIR).*

Disaggregation Hesitancy

Departments and programs sometimes hesitate to "look under the hood" for fear of what they will find. Or they may hesitate because they expect to find patterns they already know are there, but which they believe are the result of factors beyond their control.

Looking under the hood

UWM is required to disaggregate institutional data. However, disaggregating other data at the department or program level, such as course grade distributions or learning outcome assessment results, is largely voluntary. As such, *sharing the results* of department-level disaggregation work is also voluntary.

Knowing what patterns might affect different populations in your programs is the first step in improving them. While it is true that some situational factors that your students face may be beyond your control, **disaggregating data provides programs with a way to evaluate the effectiveness of equity efforts *within the contexts that you do control.***

Opportunity gaps that existed before a student comes to UWM do not have to persist while they are *at* UWM. Departments and programs have the opportunity to create curricula, practices, and policies that can actively work to close opportunity gaps. Disaggregating data is a crucial step in being able to evaluate the effectiveness of those measures, and to track progress from year to year.

Existing Data Sources

Program Analytics Dashboard: The Office of Assessment and Institutional Research (OAIR) has a dashboard intended to be a comprehensive resource for programs called the Program Analytics Dashboard. This dashboard allows for basic **disaggregation of program statistics** and is a vital resource that all programs are encouraged to make use of.

Department Analytics Dashboard: OAIR also has a dashboard for departments called the Department Analytics Dashboard. This dashboard allows for **disaggregation of departmental statistics**.

Other resources: There is also a School/College Analytics Dashboard for school/college-level metrics. OAIR also has other institution-wide data available through other dashboards.

Note that **these dashboards can only be accessed by individuals with existing OBIEE access**. To learn more about requesting access to OBIEE, please click here.

Disaggregation Basics

To disaggregate data, **each case/row in a dataset must correspond to a specific student and include all the relevant factors being examined across the columns.**

In the case of surveys, this can sometimes be accomplished by asking respondents to provide the data being used for disaggregation themselves (e.g., to self-identify ethnicity, gender, etc.). In those situations, data can remain anonymous if no data outside of the survey will be involved in the analysis.

But where information about students will be needed from UWM's databases, your **dataset needs to contain the student's identity** until you have assembled all of the data needed for analysis. Note that student names alone are not sufficient. The dataset will require either the student's **ePanther ID**, **campus ID**, or **empl-ID** to successfully pull data from UWM's system.

Once the dataset is complete, **then students' identities should be removed from the dataset.**

Data that is not linked to specific student identities cannot be meaningfully disaggregated.

*If you know the distribution of exam scores, and you know the distribution of gender in your class, but you **do not know** which exam scores or genders are associated with one another, then no conclusions about performance gaps by gender can be drawn.*

The two data points must be matched up by student in order to reveal if any patterns or gaps are present.

Disaggregating Learning Assessment Data:

Large enrollment degree programs, and **GER courses with large enrollments**, will benefit most from disaggregating student data. Because course grades often show very different patterns than outcomes or competency data, we recommend periodically disaggregating data for specific learning outcomes (as well as other relevant factors such as course persistence rates, etc) for large programs and courses.

Canvas:

For disaggregating learning assessment data, **Canvas** makes this relatively easy.

When programs use an Outcomes Manager to set up department level outcomes and rubrics in their subaccount, data resulting from use of those outcomes, when imported into courses and used in rubrics, is *already identifiable.*

Canvas records the student's name, Empl-ID, as well as the outcome measured and their subsequent scores.

(Note that if identity information is *not* being used by the program, then it should be **deleted** from Canvas datasets by removing the relevant columns at the first opportunity, when accessed by the Outcomes Manager).

Qualtrics:

When using Qualtrics surveys, UWM's 1Login can be integrated at the beginning of your survey flow to require students to log in with their ePanther ID and password before completing the survey. If done correctly, their ePantherID and email address become part of the *embedded data* in the survey response, making it easier to disaggregate responses later.

IRB and FERPA for Collecting and Using Identifiable Student Data

Data collection that is strictly used internally, as part of a program improvement/quality assurance process, is not considered "human subjects research" and therefore does not require IRB review. However, if the data being collected will *also* be used for research and shared with external audiences for that purpose, then IRB approval is required. Additionally, if you are using FERPA-protected data for research, you must obtain written permission from the student.

FERPA allows for identifiable student information to be used internally for quality assurance and program improvement purposes, as long as that data is handled securely by authorized individuals. However, that data, or the results of analysis, should not be shared with other audiences unless it has been de-identified, and *the dataset is large enough that disaggregation itself does not inadvertently reveal student identities.*

Working with Identifiable Data: Data Security

Do:

- **Store** identifiable student data only on secured office computers. That means in locked UWM offices.
- **Store** identifiable data on *encrypted* office computers. While all UWM laptops are already encrypted, most office desktops are not. Encryption can be enabled by calling the UWM HelpDesk with your computer's ID information.
- **Delete** identifying information (name, student/system ID, etc.) from your dataset as soon as possible. That is usually when you have filled in all of the missing data needed and your cases/rows are complete.
- **Share** datasets with authorized people, when necessary, **using OneDrive**. Individuals should always use OneDrive's "Share" feature when sending High-Risk data, as opposed to sending the document's link in the email text. Utilizing "Share" allows the owner to specify the recipients of the document, along with the security settings in place for the document. See High Risk Data Guidelines for more information.
- **Ensure** that the dataset is shared *specifically and only* with the individual authorized to access it, and that it is *not* shared with "anyone with the link" or "anyone at UWM."
- **Use UWM's VPN** to connect securely to your office computer via Remote Desktop if accessing sensitive data from home is absolutely necessary. That way data stays on your office computer and within UWM's secure network.

Don't:

- **DO NOT Store** or download identifiable data on personal computers or vulnerable media such as flashdrives.
- **DO NOT Send** identifiable data as an attachment in email.

How to Obtain Missing Data

To disaggregate a dataset (e.g., assessment results), you will likely need additional information about each student in your dataset.

Requests for data to be used for disaggregation within L&S can be sent to ls-reporting@uwm.edu. Please include the list of students in a spreadsheet, and a clear description of what information about each student is required to complete your dataset.

Outside of L&S, please check with your college or school to find out who your point of contact is for obtaining necessary data. In CHS, data requests can be sent to Michelle Janowiak (mmlnsa@uwm.edu), and in CEAS some data requests can be handled by the assistant dean, Todd Johnson (johnsont@uwm.edu).

If you cannot obtain the data you need within your own school or college, please submit a request to the DataHub at the Office of Assessment and Institutional Research with a clear description of the data you need.

Limitations of Data Disaggregation

The usefulness of disaggregating program datasets can be limited by:

- Small sample sizes
- Protecting student **privacy** (especially in small populations, where disaggregation might accidentally reveal student identities)
- Not all differences are meaningful (paying attention to statistical significance, statistical power, and effect size can help departments determine which differences apparent in their dataset are most meaningful).
- Lack of resources, labor, or expertise available to manage data disaggregation and subsequent interpretation of the results. Some *limited* support for this is available from the assessment coordinator and from OAIR, on a case by case basis.

Tips for Making Data Disaggregation Meaningful

- Make sure your data isn't just measuring how well students can *navigate assessment tasks*, but rather are authentic measures of learning or achievement. For example, differences in student grades can often be "reflective of students' ability to navigate college instead of [a] demonstration of competence or achievement of an outcome" (Montenegro and Jankowski, 2020, p.11).
- Consider context, including historical trends, carefully. The meaning of patterns in data can change depending on which layers of context are examined.

- Avoid jumping to causal conclusions too quickly. The obvious "cause" of a pattern may not turn out to be accurate once additional information is considered.
- Avoid engineering your data and interpretation to align with an expected/preferred result
- **Examine distributions,** not just means/averages. Means can conceal important patterns in data (for example, on a scale of 1-5, mean score of 3.0 resulting from many scores of 3 is very different—and likely has different implications for student performance—than a mean of 3.0 resulting from scores all grouped around 1s and 5s).

Bibliography

A Bibliography with resources about **Equity and Assessment:**

https://uwm.edu/academicaffairs/wp-content/uploads/sites/32/2021/10/EquityAssessmentBib.docx

Links in this Document:

Equity-minded Assessment: https://cue.usc.edu/about/equity/equity-mindedness/

Program Analytics Dashboard: https://uwm.edu/institutional-research/program-analytics-dashboard/

Department Analytics Dashboard: https://uwm.edu/institutional-research/department-analytics-dashboard/

Office of Assessment and Institutional Research (OAIR): https://uwm.edu/institutional-research/

About OBIEE access: https://obiee.uwm.edu/access/

Canvas and Assessment: https://uwm.edu/academicaffairs/facultystaff/assessment-of-student-learning/assessment-resources/#Canvas

Settings for embedding UWM 1Login into a Qualtrics Survey: https://uwm.edu/academicaffairs/wp-content/uploads/sites/32/2021/10/AuthenticatorSettings.pdf

High-Risk Data Guidelines: https://uwm.edu/technology/wp-content/uploads/sites/422/2020/05/High-Risk-Data-Guidelines.pdf

Data Request Form (OAIR): https://uwm.edu/datahub/submit-a-request/

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