Using Data for Student Success at UC Merced

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Background

Student success has many definitions, but includes, for example, improving student outcomes such as retention and graduation rates at UC Merced. At a time when the availability of data that can be used to support student success proliferates, it is important to develop frameworks and intentional strategies to (a) ethically and effectively use data and (b) create the necessary institutional conditions to facilitate data use. But this is much easier said than done and requires foresight, collaboration, and buy in across the institution.

This document has two parts. First, we provide step-by-step process for using data to support student success at UC Merced. Second, we provide general recommendations to create the institutional conditions necessary for the proposed process to be effective.

Part I: Step-by-Step Process for Using Data to Support Student Success

A visual representation of the process is provided below.
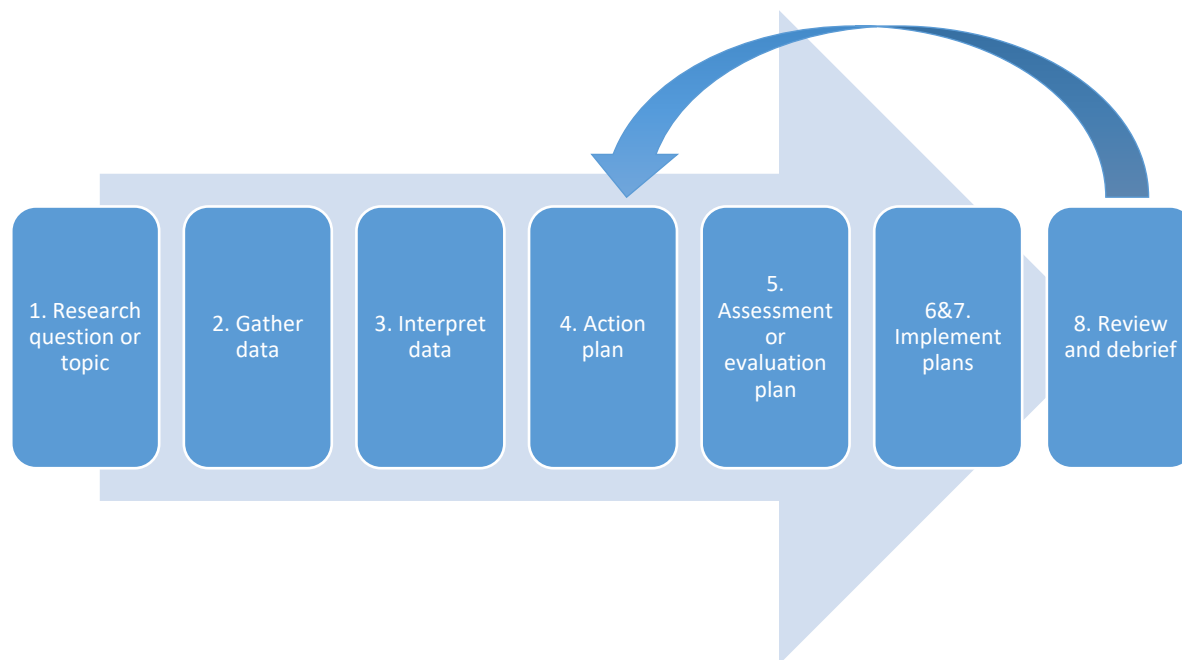
Step-by-Step Process

1. Develop a research question – specific questions are often easier to answer and often produce more actionable insights than overly broad questions.
2. Gather data to answer the research question.
    a. Places to gather student data/information
        i. CIE/IRDS webpage
        ii. Registrar's Office
        iii. Academic Affairs (e.g., Academic Advising Staff, Assessment Coordinator)
        iv. Student Affairs (e.g., Special Programs Staff, Assessment Coordinator)
        v. UC Office of the President Info Center
        vi. Research literature
        vii. Colleagues and professional organizations
3. Interpret the data in light of the research question.
    a. Gather needed partners to help accurately interpret the data.
    b. Potential considerations and limitations
        i. Correlation $\neq$ causation
        ii. What is/was the institutional context at the time of data collection/interpretation?
        iii. For longitudinal research questions, have there been changes over time that should be considered when interpreting the data?
        iv. Is there missing/inaccurate data that create challenges for interpretation?
4. Develop/revise an action plan based on the data and grounded in context.
    a. Consider the context.
        i. Who else is working on a similar issue or plan? Can you use strategies that have worked for others?
        ii. Is there a potential for partnerships within the institution or across institutions? If yes, identify and gather feedback from partners as you develop your plan.
        iii. Who else on campus should know about your plan? Inform and when possible engage stakeholders on campus who will be impacted and/or who may have feedback that could improve your plan.
    b. Examples of an action plan:
        i. Develop/revise an intervention to address a problem.
            1. Identify intervention objectives and goals, including student learning outcomes.
            2. Identify effective student engagement strategies, including clear communications and appropriate message framing.
        ii. Develop/revise a plan to gather more data.
            1. If the research question cannot be fully answered with available data, determine what else is needed and how to reliably gather it.
5. Develop/revise an assessment/evaluation plan.
    a. Identify what success would look like based on goals and objectives.
    b. Figure out what you will measure to evaluate the implementation process and success outcomes and put mechanisms in place to do so.
    c. Gather feedback from partners as appropriate.

6. Implement the action plan.
    a. Monitor and measure per the assessment/evaluation plan.
7. Implement the assessment/evaluation plan.
    a. Review evidence related to goals and objectives.
        i. For interventions, were the learning outcomes met?
        ii. For data gathering, was data collection and dissemination successful?
    b. Disseminate findings to partners as appropriate.
8. Review/debrief the implementation of the action plan and assessment/evaluation results.
    a. Was the implementation consistent with the planned methodology?
    b. Were the data gathering mechanisms effective?
    c. Consider the lived experience of those involved in the implementation – would improvements increase adoption and/or create a more positive experience?
    d. As needed, return to #4 and make adjustments.

Please see Appendix A for an example of a collaboratively developed mid-semester grade intervention that elucidates how the process can be used to develop a student success initiative.

Part II: General Recommendations for the Institution

Though the step-by-step process (Part I) can be used at any time by those who have a student success research question, creating a campus culture that supports the effective use of this process is more challenging. We make the following recommendations for creating the necessary culture on campus and advocate that campus leadership and individuals at all levels consider ways to implement these recommendations.

1. **Promote data/information access and literacy on campus**. Ensure that campus stakeholders know how to access and effectively use data and analytic tools/resources. From WSCUC, "according the Association of College and Research Libraries, [information literacy is] the ability to 'recognize when information is needed and have the ability to locate, evaluate, and use the needed information' for a wide range of purposes. An information-literate individual is able to determine the extent of information needed, access it, evaluate it and its sources, use the information effectively, and do so ethically and legally."[1]
2. **Facilitate connections between stakeholders at all levels**. Create a culture where collaboration and inclusion (broadly defined) are expected and valued. Break down silos of information and action. If an action could have broad impact (beyond a single unit), consider consulting with those who could be affected to get their input and expertise, avoid redundancy, and increase collaboration.
3. **Be cautious about "quick fixes"**. Expect and even embrace failure when it helps us learn about how to improve. Be patient. Impact and change are generally the result of careful planning – including the development of assessment strategies – and take time.
4. **Promote information sharing so we can learn from each other**, particularly as it pertains to data and programming related to student success. For example, create a committee(s) or review team(s) that reviews intervention/program implementation plans as well as subsequent assessment/evaluation plans to provide consultation, advice, and recommendations. This

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[1] https://www.wscuc.org/lexicon/14

committee/team could also help to connect stakeholders from across campus for whom collaboration might be useful and think about ways to disseminate information widely.

The table below illustrates the ways in which the general recommendations for the institution and step-by-step process for using data to support student success are interrelated.

Step-by-Step Process	General Recommendations			
	Campus data/information access & literacy	Stakeholder connections & engagement	Be cautious about "quick fixes"	Promote information sharing
1. Research question or topic		X		
2. Gather data	X			
3. Interpret data	X	X	X	X
4. Action plan		X	X	X
5. Assessment or evaluation plan	X	X	X	X
6. Implement action plan		X		
7. Implement assessment/evaluation plan	X	X	X	X
8. Review and debrief	X	X	X	

Appendix A: Case Study – Midsemester Grade Intervention

This case study provides an example of a collaboratively developed mid-semester grade intervention to elucidate how the step-by-step process can be used to develop a student success initiative.

Stakeholder group: Academic Policy Study Group

1. Research question: *What factors are related to student success at the end of the first semester at UC Merced? We defined success as end of first term GPA and academic standing.*
2. Gather data to answer the research question: *IRDS created a predictive model using survey data and student institutional data. The model indicated that the most important factor for how new students do at the end of the first semester is their midsemester grades. Students who received even one D or F grade at midterm were less likely to be in good academic standing at the end of their first term than students who had not.*
3. Interpret the data in light of the research question
   a. Gather needed partners to help accurately interpret the data: *the APSG interpreted the data and decided to further investigate the status of our current midsemester grade intervention process given the apparent importance of midsemester grades for student success.*
4. Develop/revise an action plan based on the data
   a. Consider the context
      i. Who else is working on this? Is there a potential for partnerships? *Both Academic Affairs and Student Affairs units were working on midsemester grade intervention processes, but there was a sense that what we were doing currently wasn't effective and that we needed to improve collaboration.*
   b. Develop a plan to gather more data
      i. Understand the current state: *The APSG embarked on a project to document all current midsemester grade intervention processes and stakeholders.*
   c. Develop an intervention to address a problem
      i. Identify intervention objectives and goals, including student learning outcomes: *The APSG created a plan for revising the midsemester grade intervention process. We created student learning outcomes for the planned intervention.*
      ii. Identify effective student engagement strategies, including clear communications and appropriate message framing: *The APSG created a student communication plan.*
5. Develop/revise an assessment/evaluation plan
   a. Identify what success would look like based on goals and objectives: *The APSG used the student learning outcomes to develop an assessment plan for the intervention.*
   b. Figure out what you will measure to evaluate the implementation process and success outcomes, and put mechanisms in place to do so: *The APSG created mechanisms (e.g., a data collection form for those who would implement the intervention) to measure our student learning outcomes and trained those who would deliver the intervention on how to collect the data as needed.*
6. Implement the action plan
   a. Monitor and measure per the assessment/evaluation plan: *APSG monitored the intervention delivery as it was implemented.*
7. Implement the assessment/evaluation plan
   a. Review evidence related to goals and objectives

        i. For interventions, were the learning outcomes met? *The APSG examines the data every fall and spring term to examine progress on whether out learning outcomes are being met by the intervention.*

8. Review/debrief the implementation of the action plan

    a. *After the first round of interventions, we used an anonymous survey to get feedback from those who implemented the intervention and made improvements based both on the feedback received and the data obtained during the intervention. We engaged our partners who delivered the intervention in making subsequent improvements to both the intervention process and training. We also used feedback to improve our data gathering mechanisms (e.g., switched from a paper form to a fillable PDF and then to a web form so that we could quickly and accurately monitor the data as the intervention progressed).*

    b. As needed, return to #4 and make adjustments: *The APSG and our partners have gone through several rounds of revising the intervention, strategies for data collection, and communications. We currently have a Midsemester Grade Intervention Steering Committee that monitors and revises the intervention, intervention strategy, and communications as needed. The APSG is currently examining long-term intervention outcomes. Several years of data are needed to determine overall effectiveness in areas such as improvements in student academic standing at the end of the first term and retention to the next term.*