Qualitative Data Mining to Increase Graduation Rates

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Abstract

Although it is common practice to collect qualitative data via open-ended survey questions, emphasis is typically placed on quantitative responses. This ignores the rich contextual information that qualitative data can provide. This poster presentation outlines the methods for collecting, analyzing, and interpreting qualitative data in support of institutional effectiveness. Examples are drawn from a study on mean unit load (MUL) to highlight the ways in which qualitative data can be used to better understand and influence key metrics such as graduation rates.

Research Questions

- Besides work, what factors influence students’ course load preferences?
- Why don’t more students attempt at least 15 units per term to stay on track to graduate in four years?
- How can qualitative data be used to better understand and address issues related to time to degree?

Background

There are several potential barriers which have been identified to deter college students from taking on a higher course load, and thereby make it more difficult for them to accumulate enough units to graduate in four or even six years. According to Attewel and Monaghan (2016), many first-time freshmen do not receive adequate guidance prior to entering college and, therefore, may be unaware that 15 units is what is needed to graduate on-time. As such, the authors argue that the tendency for students to simply adopt the norm unit load (12 units) is a widespread issue adversely impacting graduation rates at most college campuses. For instance, although 75% of incoming freshmen at CSUSB express a desire to graduate in four years (CSUSB First-time Freshmen Survey, 2017), only about 50% of them actually attempt enough units per term to stay on track to graduate in four years. Integration and utilization of both quantitative and qualitative methods would allow researchers to explore key variables such as graduation rates from a more holistic perspective (Boz & Dagli, 2017).

Methods

Sample
- 382 undergraduate students enrolled at least part-time
- 21% Freshmen, 11% Sophomore, 31% Juniors, 37% Seniors
- 78% female, 12% male, 75% PELL Grant recipients

Survey Questions
- How many courses do you typically take per term: 1-5
- Thinking about your answer to the previous question, why do you take that number of courses? (Please Explain)

Qualitative Data Analysis

- Cohen’s kappa can range from -1 to 1 (McHugh, 2012)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Definition</th>
<th>Keywords</th>
<th>Example</th>
<th>Cohen’s Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time Status/Financial Aid</td>
<td>Maintain 12 units to be considered full-time for financial aid.</td>
<td>Graduate status, financial aid, full-time, part-time, 12 units.</td>
<td>“I want to graduate on time.”</td>
<td>0.92</td>
</tr>
<tr>
<td>Graduate On Time</td>
<td>Desire to graduate in a certain timeframe.</td>
<td>Graduate status, financial aid, full-time, part-time, 12 units.</td>
<td>“I want to graduate on time.”</td>
<td>0.95</td>
</tr>
<tr>
<td>Personal Preferences</td>
<td>Desire to learn, challenge themselves, or an expressed preference for a heavier course load.</td>
<td>Student background, desire, challenge, performance, performance.</td>
<td>“I want to absorb, learn and prepare myself as much as possible before graduating.”</td>
<td>0.94</td>
</tr>
<tr>
<td>Courseload Concern/ Common Course/ Common Course/</td>
<td>Simply maintaining the usual or normal course load additional courses are required to be difficult to manage.</td>
<td>Courseload, concern, common course, normal course.</td>
<td>“I think it’s just the right amount of classes that I can handle per quarter.”</td>
<td>0.93</td>
</tr>
<tr>
<td>Timing/ Availability of Courses</td>
<td>Courses not offered when desired or not available</td>
<td>Course timing, course availability, day.</td>
<td>“Many classes are not offered in the evening when my schedule permits.”</td>
<td>0.92</td>
</tr>
<tr>
<td>Family/Other</td>
<td>Family, other children, family, kids, children, personal, non-class.</td>
<td>Family, other children, personal, non-class.</td>
<td>“I have 2 children.”</td>
<td>1</td>
</tr>
<tr>
<td>Personal Commitments/Responsibilities</td>
<td>Take extra amount of courses due to personal commitments/requirements (e.g., family, work).</td>
<td>Personal commitments, requirements, family, work.</td>
<td>“involved in church and other volunteer.”</td>
<td>0.92</td>
</tr>
<tr>
<td>Other</td>
<td>Other reasons that may prevent them from being course classes</td>
<td>Major, minor, social, work.</td>
<td>“Medical problems.”</td>
<td>0.96</td>
</tr>
<tr>
<td>Distance/ Concern</td>
<td>Courseload influenced by the time or distance from campus.</td>
<td>Distance, concern, transportation, time, time to campus.</td>
<td>“I commute a long distance.”</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Results/Findings

- The most common factors influencing MUL among students who averaged 15 or less units per term were family and/or children and the desire to be considered full-time for financial aid.
- The most common factors influencing MUL among students who averaged 15 or more units per term were the desire to graduate on time and a personal preference for a more challenging course load.

Discussion

Overall, the findings of this study suggest that incoming freshmen need to be more informed about the four and six year graduation requirements via orientation, advising, registration/enrollment platforms, graduation campaigns, etc. Given that students who mentioned wanting to graduate on time also typically averaged 15 or more units per term, these students are likely well aware of, and committed to, the four year graduation track. Whereas, comments from students who averaged less than 15 units per term suggest that they default to the financial aid requirements (at least 12 units to be considered full-time). Furthermore, low unit earners also typically expressed concern about their ability to handle a higher course load. Accordingly, institutions should also identify students who have performed well at a lower unit level and encourage them to increase to 15 units (Attewel & Monaghan 2016).

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Keywords

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References

