The Quantified Learner: Giving Students Back their Data to Inform and Empower

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Agenda

• Study Tracking
• Activity
• University collaboration
• Lessons Learned
Outcomes

• **Understand** how Pattern works and our collaboration plan for continued research.

• **Propose** how to motivate students to track their habits so they can make informed decisions.

• **Review** lessons learned.
Why?
Tommy Freshman’s Dashboard

192 HOURS LOGGED
100% TIME SPENT OUTSIDE CLASS
96% HOMEWORK

192 of 192 total hours were spent outside of class.

Homework was your most popular outside activity with 185 hours.

SATURDAY was the day of the week that you rated as most productive.

AFTERNOON was the time of day that you rated as most productive.

Homework for 1 hour
Pattern
Apr 7, 2016 at 2:20 PM
Extremely Satisfied
Across all activities, you have rated yourself to be most productive in the morning (5am - 12pm).

It may help to focus your efforts more during this time.

82% CONFIDENCE

THIS WAS HELPFUL

THIS WAS NOT HELPFUL

For Practice Problems, you have rated yourself to be most productive in the morning (5am - 12pm).

It may help to focus your efforts more during this time.

82% CONFIDENCE

THIS WAS HELPFUL

THIS WAS NOT HELPFUL
Working on
What data would be useful for students to see?

How do we get students to record accurate data?

How do we get instructor buy-in?

What are the roadblocks to tracking time?

How do you help students overcome roadblocks?

How do we get advisor buy-in?

How can we motivate students to log more time in Pattern?

How do we get student buy-in?
Think, Pear, Share
3 minutes to Think
+ 3 minutes to Pear
+ 5 minutes to Share
= 11 Minutes
On your own: Think

Brainstorm: How can we motivate students to log more time in Pattern?
In your group, discuss, and brainstorm ideas.

**Write** at least one idea on a sticky note. One idea per note please.
CULTURAL PROBE
DEVELOP PERSONAS
CARD SORTING
CUSTOMER INTERVIEWS
LISTEN IN ON CUSTOMER SERVICE CALLS
FIELD VISITS
USER SURVEY

RUN A USABILITY TEST
pattern

University of Wisconsin

Log in with Wisconsin-Madison Account

Log in with Wisconsin-Milwaukee Account

Log in with Wisconsin-Green Bay Account

Log in with Wisconsin-Whitewater Account
Student Empowerment, Awareness, and Self-Regulation through a Quantified-Self Student Tool

Kimberly Arnold1, Brandon Karcher1, Casey Wright2, James McKay1

1 University of Wisconsin-Madison  2 Purdue University

Quantified-Self Student Movement

Major components of the quantified-self movement are awareness and behavioral change, and applying these concepts in an educational setting has the potential to transform how learners approach learning.

- Scholars have explored quantified-self student technologies in theoretical frameworks for student support and learning benefit. [7, 8]
- The potential for tapping learning data via quantified-self apps could be transformative for learners already heavily reliant upon both technology and quantified-self technologies.

Self-Regulation and Reflective Learning

Research in the monitoring of self-regulated learning has promising outcomes and suggests a positive relationship exists between logging study time and levels of self-regulated learning. [9]

- Self-regulated learning is a "deliberate, judgmental, adaptive process" which requires consistent feedback. [4]
- Research in the monitoring of self-regulated learning has promising outcomes. Taber et al. suggest that a positive relationship exists between logging study time and levels of self-regulated learning. [6]

Wisconsin Usage

Purdue Usage

1 Time & Activity Tracking
Pattern allows students to log their time to present and custom activities. These activities include homework, lecture, studying, and reading.

2 Productivity Ratings
Students can assign ratings based on their level of satisfaction with the activity or amount of work completed.

3 Recommendations
Pattern evaluates each entry as it is logged and provides feedback to help students make informed decisions about their time.

4 Student Dashboards
Data visualizations allow the quick assessment of time spent on activities during select intervals and easy comparison to peer averages.

5 Instructor Feedback
Students may opt to share their data with instructors to gain informed feedback on how to best spend or balance their time.
Different strategies, different tastes....

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Pattern + Messaging - Compare 3 Cohorts

<table>
<thead>
<tr>
<th>Neither</th>
<th>Pattern</th>
<th>Pattern + Messaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 77</td>
<td>n = 68</td>
<td>n = 65</td>
</tr>
</tbody>
</table>

When I hear the ping of emails coming in I’m curious to see the email and am prompted to respond. So to stay focused on what I need to get done, what do I do? My solution: I turn off the volume on my computer and put my phone in another room.
UW-Milwaukee Gateway Psychology Course
Diane Reddy & Dylan Barth

Competency based education

Study held constant:
• instructor
• design
• content
• assessment
Percent of Students Receiving *Mid-Semester Warning*  
*Students Using Pattern with Complementary Messaging Made Better Progress*

<table>
<thead>
<tr>
<th>Instructional Condition</th>
<th>Percent of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neither</td>
<td>72.6</td>
</tr>
<tr>
<td>Pattern</td>
<td>64.71</td>
</tr>
<tr>
<td>Pattern + Messaging</td>
<td>46.15</td>
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</tbody>
</table>
Percent of Students Earning *D, F, & W Grades*

Greater Online Learning Success with Pattern + Messaging

<table>
<thead>
<tr>
<th>Instructional Condition</th>
<th>Percent of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neither</td>
<td>23.38</td>
</tr>
<tr>
<td>Pattern</td>
<td>20.5</td>
</tr>
<tr>
<td>Pattern + Messaging</td>
<td>6.5</td>
</tr>
</tbody>
</table>
Student Perceptions

“I learned I needed to study in smaller sections more often rather than study for 4 hours straight.”

“It was almost like a game, and it encouraged me to study and do my homework.”

“I used it to see how much time I spent on something in hindsight to predict how much time I'll spend on the task in the future. For example, I found out that I usually spend 24 hours studying for a midterm.”

“...helped me recognize what times of day were best to devote study time to and if I was studying enough. It also helped me estimate how much I needed to study for exams to perform comparatively well based on past time studying for exams.”
Student Perceptions

“It felt like a shaming tool.”

“I quickly stopped using the app when it continued to tell me that I needed to do more work because I was behind my classmates… I felt it belittled my studying, and in fact my grades have been far above others.”

“Was interesting that it told me when I should study, but I am busy and can only study when I can.”
## Student Perceptions

<table>
<thead>
<tr>
<th>Question</th>
<th>S16</th>
<th>F16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you be happy to have your data used for personalized interventions that might help improve your grade?</td>
<td>76%</td>
<td>72%</td>
</tr>
<tr>
<td>Would you be happy to have your data used if it helped improve your grade?</td>
<td>94%</td>
<td>91%</td>
</tr>
<tr>
<td>Would you be happy to have your data visualized through an app where you can look to compare yourself to your classmates?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>61%</td>
<td>60%</td>
</tr>
<tr>
<td>Maybe</td>
<td>32%</td>
<td>30%</td>
</tr>
<tr>
<td>No</td>
<td>7%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Lessons Learned so far:
Instructors listen best to other instructors
Make it easy for instructors to participate
Be careful with student incentives
Student value
Questions?
DIGITAL ENGAGEMENT.
STUDENT SUCCESS.
Shaping the learning experience.

purdue.edu/studio
StudentSuccess Analytics Practitioners Community Group

**Goal:** The goal of the community group is to promote, educate, and further a network of practitioners with a desire to improve student success through the use of analytics. The more we can collaborate and share on these efforts, the easier it is for these initiatives to grow and succeed.

Interested in joining us? [http://tiny.cc/SSACG](http://tiny.cc/SSACG)
Please take a moment to evaluate this session
There are two ways to access the session and presenter evaluations

1. In the online agenda, click on the “Evaluate Session” link

2. From the mobile app, click on the session you want from the schedule > then click the associated resources > and the evaluation will pop up in the list