



Adam Munson

University of Florida

Warrington College of Business

Lecturer - Department of Information Systems and Operations Management



What Adam Says About Yellowdig:

“With tech I have to think about 600 students and how much I’ll have to support them for setup. If even 5% have an issue, I’m getting over 30 emails. If I’m using 4 things and there’s problems at that rate, I’m getting over 100 emails. That’s bad for them and really puts a dent in my time. So a big reason I keep going back to Yellowdig is that it is the easiest tech I’ve seen for students to pick up... they just “get it.” With the LTI integration it is also hassle-free for them. They don’t have to deal with access codes and I don’t have to help with login issues. It’s a better experience for everyone and that helps me focus on teaching rather than tech support.”

How Adam Uses Yellowdig:

Adam has been a long-time user of Yellowdig at the University of Florida, launching his first of 18 class communities for Fall of 2015. In addition he has used Yellowdig for the Spring and Fall semester versions of an Operations & Supply Chain Management course at UF. Those sections are among the biggest classes at UF and have had among the highest number of active participants within a single Yellowdig community (between 364 and 634 participants; median = 556).

Since starting Adam has experimented with the point system quite a lot (see the “By the Numbers” section that follows). His more recent setups have required between 500 and 1000 points, depending on the percentage of the grade, with a weekly maximum of 100 points. In his more recent communities, students also receive points if another student gives a Like or Love to their post and if other students Comment on their Pin. These “social point” categories help ensure that students post quality content that interests other students. Students also quickly realize they cannot earn these points, or points from instructor badges, if they procrastinate. Social points can only be earned when others are reading their Pins and Comments, so contributing to the community earlier and getting good conversations going is a smart strategy. Offering these points allows students to do a little less work in exchange for better and more timely work, which is worth rewarding because it creates a much stronger learning environment for everyone.

Adam sets his weekly goal to expect about 4 posts per week as a mix of Pins and Comments. The course totals and weekly goal he uses mean that students will typically be able to skip a week of participation for every 4 or 5 weeks, if they get the maximum points in all of the other weeks. This small weekly point buffer means that students get some flexibility in deciding when and how to contribute in a given week, which also increases the average quality of posts. The buffer also makes the experience feel more manageable because they can earn a little bit ahead or catch up if they do forget to participate.

By the Numbers:

The table below focuses on the Operations & Supply Chain Management classes that Adam has taught over the last 3 years. This includes the large Spring and Fall sessions and smaller Summer sessions. As you can see from the table, the value of Comments relative to Pins has a very clear and large impact on the Conversation Ratio ($r = .877$). The Conversation Ratio is the number of Comments-Per-Pin, which we consider an important indicator of the success of a community in fostering real conversations. When Pins are given high value, students tend to earn their points by posting new Pins because it is an obvious way to reach the point requirement. They also take it as a signal from the instructor that creating new content is more important and more valued than engaging with others’ content. Though there may be some situations in which this definitely achieves a specific goal for the class, in terms of creating a really successful community and discussion among peers, more back-and-forth discussion is typically desirable.

Traditional discussion board dogma tends to require students to post 1 pin and 2 comments per week. Many professors come to Yellowdig with assignments used in other frameworks and continue to require the same kind of production, treating Yellowdig as if it is just a modern and more user-friendly “re-skin” of a traditional discussion board. However, setting the expectation of posting 1 Pin and 2 Comments only yields a Conversation Ratio of about 2. And, by prescribing these exact expectations, students will often continue to simply follow the traditional dogma; they will do their weekly post as assigned, find two posts to read and comment on as quickly as possible, and then stop participating. Not only does this framework fail to get students reading and thinking that much about others’ posts, but the communities also get flooded with forced posts that tend to be repetitive, not all that relevant, or not very interesting to other students. The end result is a marked reduction in the average quality of the content that is available to read, with most content written to satisfy an instructor’s requirements rather than genuinely discuss course-relevant topics. This leads to a lack of student interaction and no real sense of community, which harms engagement and reduces many of the actual benefits of social learning.

Further, peer-reviewed [research](#) using Yellowdig has shown that it is behaviors related to *reading* posts that are predictive of learning. This relationship is actually quite strong, with *out-degree behaviors* (sending comments and feedback to others) explaining 41% of the variability in course grades. On the other hand, neither indicators of posting quality (e.g., receiving Likes and

Loves) nor connectivity within the class network were significantly related to class grade. Since listening is an important part of any conversation, and since evidence shows that students who listen more (i.e., read more) are also learning more, there is good reason to focus discussion on encouraging “listening” rather than “talking.” How do we do that?

The changes we see in Adam’s point system below were experiments he conducted to improve the qualitative results he saw from his communities. Over time he slowly started to use point setups that mirror what we now know from data are the best practices for our point system. It is clear that these changes and improvements in our product are yielding both better qualitative and quantitative results than his earlier boards. Adam started out by giving a low number of points for Comments relative to Pins; more recently, he has given more points for Comments. In the time since Adam started using Yellowdig, we also added the ability for students to earn points when other students Comment on their Pins. As shown in the table, Adam started taking advantage of this point type in Fall 2017 after it was introduced. When students can earn these points, they create posts earlier in the week to get a discussion going and they write posts in ways that will engage other students in conversation. As a result, this point category really helps kickstart good conversations and makes communities appear more active and interesting to students. In Adam’s data table, we can see that the 4 courses with points enabled for Comments on Pins had the 4 highest point earning averages compared to the goal; across Yellowdig communities that use this point category, students stay more engaged and they are more likely to post regardless of already having achieved the point goal.

It is worth noting that the results Adam got from his initial uses of Yellowdig are not *bad* compared to what can be expected of traditional discussion assignments; on average students got around 100.1% of the point goal for his first 3 classes, and students did discuss at a rate of 1.77 Comments per Pin. However, across his last 3 classes, students have achieved an average of 115.1% of the point goal and are clearly having more back-and-forth discussion with an average of 5.54 Comments per Pin. Adam’s average community requirement for these 9 classes is about 41 posts per student to meet the goal. Using that number, an increase of 15% points above the course goal would mean the average student is making about 6 more posts each during the semester, a marked increase per student. **Extrapolate that number over an average class size of 400 students, and a 15% increase means these “best practices” settings are producing communities with around 2,400 more posts over the course of a semester. That represents a lot of extra posting, discussing, and learning for no extra work by Adam.**

Semester	N	Point Values					Total Point Goal Per Student	Posting			Success Indicators			Success Composite ⁶
		Pins	Comments	Comment Value Relative to Pins ¹	Comments on Pin ²	Points Earned Per Student		Posts Needed ³	Pins Per Student	Comments Per Student	Conversation Ratio ⁴	Average Post Length	Avg. % of Course Goal ⁵	
'16 Spring	571	20	5	→ 25.0%	0	900	880.5	72.0	35.3	17.4	0.49	58.0	97.8%	8.7
'16 Summer	167	50	20	→ 40.0%	0	1000	1002.9	28.6	10.6	22.0	2.07	66.7	100.3%	5.7
'16 Fall	364	40	20	→ 50.0%	0	1000	1020.7	33.3	10.4	28.6	2.75	59.1	102.1%	6.3
'17 Spring	634	30	10	→ 33.3%	0	800	789.1	40.0	17.1	25.6	1.50	74.4	98.6%	5.7
'17 Summer	170	25	15	→ 60.0%	0	600	622.4	30.0	8.7	26.1	3.02	73.6	103.7%	4.0
'17 Fall	437	20	10	→ 50.0%	4	800	864.2	53.3	13.5	41.2	3.05	60.3	108.0%	4.3
'18 Spring	595	25	10	→ 40.0%	5	800	908.8	45.7	12.2	37.4	3.07	60.6	113.6%	3.0
'18 Summer	162	20	20	→ 100.0%	10	800	981.1	40.0	3.8	29.6	7.74	59.2	122.6%	2.7
'18 Fall	541	40	20	→ 50.0%	5	1000	1091.3	33.3	5.8	33.9	5.81	55.9	109.1%	4.7
Average	404.6	30.0	14.4	49.8%	2.7	855.6	906.8	41.8	13.1	29.1	3.28	63.1	106.2%	

Note: All boards were set with 40 as the word requirement for Pins and Comments. Instructor badges were set between 10 and 50 points, but there was no clear influence of these changes. This is probably not surprising since badges were awarded to no more than 1.1% of posts.

1. This is the relative worth of a Comment compared to a Pin $[(\text{Comment Value}/\text{Pin Value}) \times 100]$. The proportional worth of the different point settings for posting and receiving social points in comparison to one another will tend to change the *type* and the *quality* of posts. The number of points awarded across all of the categories proportional to the total point goal will tend to change the *amount* of total posts, with the caveat that boards with a lot of quality posts will attract more students and keep them more engaged, leading to “extra” posting.

2. Points awarded to the Pin author when another student Comments on a Pin they created.

3. “Posts Needed” is an estimate of the number of posts needed to reach the board’s point goal given the board’s settings = $[\text{Total Point Goal}/((\text{Pin Value} + \text{Comment Value})/2)]$. Some boards require a greater number of posts to meet the point goal which influences the total number of Pins and Comments per student.

4. The “conversation ratio” is the number of Comments per Pin. At Yellowdig we typically look to increase this relative to other discussion forum experiences, with higher numbers typically indicating more back-and-forth conversations on a board.

5. Average percent of the course goal achieved by students in the class = $[(\text{Points Earned Per Student}/\text{Total Point Goal Per Student}) \times 100]$

6. The Success Composite is the average rank (scale: 1-9) of a given board across the 3 “Success Indicator” variables, which we consider a marker of successful boards. Though instructors have many ways to conceptualize “success,” boards with better ranks on this composite (1 = best) will tend to: a) spur more back-and-forth discussion; b) have students producing more and longer posts; and c) be more engaging, with more students meeting and exceeding the point goal.

After the results of Summer 2018, Adam was a little worried that the students may not have produced enough Pins, so he swung the point settings for Fall 2018 to again encourage more Pins and more students to bring up new topics of conversation. He said, “It seems like initiating a new conversation usually takes a little more insight and creativity than continuing one, so I wanted to go back a little more toward encouraging that.” This change produced a slightly lower Conversation Ratio but did get more original content posted to the board. Obviously there are a lot of ways to define the success of a community; standards vary from

professor-to-professor and student-to-student. Though we do have a perspective on what tends to indicate success, the purpose of these examples is not to try to define that, but rather to provide a clear picture of how the point categories play off of one another in achieving different objectives. These examples are especially useful because the situation is relatively well-controlled. This example allows us to isolate most of the influence on outcomes to changes that were made in the point system because the data are generated from the same class, run by the same professor, and using Yellowdig in a similar way, across all three semesters for all years, with students that have similar demographics to one another.

We are very thankful for the help of our innovative and forward-thinking early-adopters like Adam, who have provided feedback and helped us hone many of our best practice recommendations. With their input, willingness to experiment, and data we have vastly improved our onboarding and recommendations and continue to evolve our software. Thanks to people like Adam, we now have the data, procedures, and design to engage students and foster vibrant learning communities.

Tips for Other Users:

- “In really big classes it would be hard for me to ‘over-power’ a conversation, but I find a lot of the most interesting and probably useful interactions are happening without my input. Students behave differently when I’m around. I also feel like they realize that they all benefit by making Yellowdig a valuable place for each other, so I don’t *need* to be there and I actually do a little less in Yellowdig than I used to. So if I had a tip, I would just tell new users to think about how their posting could change the social dynamic and expectations of the community. Doing more may not always be better.”
- “One thing I continue to try to do, which I think highlights important content and adds value for them, is to occasionally post things that I think are important. I’ll just post a video or article with a topic tag that says ‘Test.’ That’s my way of letting them know that content is ‘fair game’ for a test question. Students will usually opt to discuss it or help each other understand it. Then a lot of times I’ll write the test questions based on that discussion. I think that’s an interesting way to spotlight content in a way they find helpful without invading their space too much.”

Large Discussions or “Intimate” Conversations?

We are often asked at Yellowdig if there is an ideal community size. There seems to be a general sense that smaller or more “intimate” conversations will create better communities and that larger groups will feel overwhelming. It may be because the single feed design has advantages for both larger and smaller groups, but we find little reason to believe there is an optimal community size. For large communities the single stream feels “manageable” because it shows only a couple posts at a time. It almost doesn’t matter how many posts have been put up because they are always served to students just a few at a time. For smaller groups, one feed makes it appear as if there is more activity because the feed dynamically changes as people post. Regardless of the reason, we find no strong evidence for an ideal size. We have not had significant qualitative feedback from students or professors indicating a strong preference and a lot of other factors seem more important to creating successful communities.

In terms of quantitative analysis, data from all Yellowdig communities indicate that the number of students explains less than 1% of the variance in the number of posts per user. At a different large state university among 777 classes with over 46,000 students, there was no statistically significant correlation between class size and the proportion of the points goal that students achieved (calculated r was $-.003$). There was a significant correlation between the number of students in a community and total posts, but from a practical standpoint the correlation was quite small ($r = .154$) and that correlation indicates that larger, not smaller, communities have tended to have more posts per student. Adam has used Yellowdig with classes from 45 to 634 students and had this to say: “I’m not sure that the students in the big classes are as likely to become as familiar with as many other students, but because of the number of students they are more likely to have real-time conversations with some of them. There is also a lot of interesting stuff posted for big courses. A big positive of a lot of things being posted is that students can find things that interest them and they are unlikely to run out of interesting things to read or conversations to take part in.”

What the Future Holds:

Resulting from Yellowdig’s consultation with Adam about his settings, one thing Adam is going to do is start using the notification system to remind students who have not participated recently. The notification emails only go out once per week, so they never seem to annoy students and they increase the number of posts in boards by around 20%. The free-form way Adam runs his classes are aligned with Yellowdig’s best practices, so the one other recommendation for Adam was to consider moving his weekly deadline away from Sunday night. Our data show that students procrastinate more when the deadline is Sunday, so boards with Sunday deadlines tend not to have as much actual back-and-forth discussion.

About Adam:

Adam is a Senior Lecturer at the University of Florida in the Warrington College of Business Administration. His teaching has been focused on Operations Management and Supply Chain Management, Optimization Modeling, Project Management and Managerial Statistics. His interests are primarily focused around environmental engineering, environmental policy, and sustainable operations. He has been a Lecturer at UF since 2009 in the Department of Information Systems and Operations Management. Adam is a licensed Professional Engineer and holds a Ph.D. in Environmental Engineering (Hydrologic Sciences Academic Cluster), an MBA, an M.S. in Fisheries and Aquatic Science, and a B.S. in Mechanical Engineering. He has also completed a graduate certificate in Environmental Policy and Management and a Post-Doctoral Bridge Program in International Business and Marketing.