John Kaminsky

From:	Steve Fassino
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То:	John Kaminsky
Subject:	Adv Calc Observation 10/27

[9:55-9:58] Intro question: If you were a potato, how would you like to be cooked? Fun answers from Michael's process of baked and fried to raw from someone else. Follow-up from Fil about if ever worked in food industry. [Shows comfort with you to ask a fun follow up]

Announcement: Finished Part 1 of Paul's notes! Hooray! [I liked your enthusiasm when you said this- and telling them practically because of web bookmarks]

Integration by parts title and product rule on board (before class started) and I see Maya already wrote it down.

"Do you remember the Product Rule from last year? Well now we'll reframe in terms of Integral." [Concise and clear]

Only see Maya, Nic, and Weisman taking notes actively. Most everyone else listening intently. Arya asked follow up question.

[10:02] Wrote an example on the board and changed position to back of the room as talked about it. [Nice teacher move]. Gave pro-tip of choose u so that it gets easier to work with. Ryan answered choice for example. And you continued to work through it with Blake and others chiming in as you write. [Love that openness for them to finish your sentences and jump in at your pauses]

[10:05] Ryan- What happens if there are bounds? We will get to that.

Why choose way we did? Want to choose u so that gets easier. And talked through why it's worse to pick other. Should get more complex and be obvious. But maybe consider writing up those details in case students didn't track it?

[12 minutes in and you've introduced the main concept for the day, where it comes from, and an example- good efficiency!]

[10:08-10:11] Want to add formula to formula sheet [is there a literal formula sheet y'all have been making?] Tackling ln(x), do you think you need Integration By parts? There are two functions here. Does anyone see what the other function is? Maggie answers 1. Then wrote up work on board, talked through why u can't be 1, and finished answer. By this point, I see many students taking notes and jotting down this example.

[10:12] Any questions so far on IBP? No questions. Should we try another example?

[10:13-10:18] Example: t^2e^t. Choice of u = t^2.....Does anyone see an issue? Will have to do again [heard some groans] as you said have to bleed the polynomial down a degree.

Nice Pro-tip about being consistent with choice of u. Chose polynomial the first time, so continue. If not you basically undo everything you just did.

Continued solving process of IBP again, changed variables, and laid out all steps. Arya chimed in with a step.

Noticed by 10:15, Fil, Michael, and Nic have each already left the class (to go to the bathroom presumably). Nic and Michael out at same time.

[10:18] Comment about quicker way to deal with polynomials- as mentioned y^6 on future HW. And pause for questions. Ryan asked question.

[10:19-10:24] Back to Ryan's question earlier (nice recognition of his question) what do we do about bounds? Example. Summary after example, plug in bounds make sure do it to right hand side as well.

Noticed you do well do write work large and clearly. And work left to right across whiteboards, often having 3 columns of work up. And you erase a column of work as you need space- which gives students plenty of time to copy down board work.

[10:25] Questions? Everyone feel comfortable? No answer. Then announced time for one more example before work on HW.

[10:26-10:30] Inverse tangent example. Wasn't sure if Tippet was following as he hadn't opened computer or chimed in yet. Looked like he was paying attention. But he gave you derivative of inverse tan. Continued work for integral of x/1+x^2

"YAY Integration by parts into a U-Sub!!! What no one else is excited about doing IBP into U-sub?" [Love this energy!]

And you reference adding this to formula sheet. [Is there a master sheet? Should we start building this in Calc?]

[10:30] I'll let you work on HW until 10:55 and then I'll give you exit ticket.

Floated around middle of room to be available and see that students getting to HW problems- nice classroom management. Class is quiet and focused when I leave at 10:32.

Overall loved my time in your class. Felt like I was in college math again- but with a teacher that cares. You effortlessly walked through the concepts at a 30,000 foot level as well as the ground floor- giving them examples to chew on and that uncovered a new idea each time. Your enthusiasm and excitement for talking about the concepts seems to help the material settle in for them.