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**Student Generated Authentic Problems**

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Student Generated Authentic Problems
BACKGROUND

• Often in problem-based learning, students are presented a case study a problem that mimics or represents a real-life problem.
• Adaptive expert (Darling-Hammond & Bransford 2005) - is able to identify and solve problems, construct new knowledge and in turn, solve new problems, as opposed to a worker who engages in routine work on known problems that are solved with known technical solutions.
• Anyone who has been in a classroom recognizes that the problems and predicaments encountered by teachers do not present themselves in clear-cut routine fashion, but rather as messy situations. Sometimes, getting to the real problem can be difficult.
• We were interested in an approach graduate education for inservice teachers that is “personalized” -by focusing on the demands of teaching, real problems and predicaments that teachers face in today’s classrooms.
BACKGROUND

The learning Cycle
Bransford, Brown, Cocking (1999)
• *The Challenge*—presents a statement or scenario that poses a complex objective for the students. The challenge should be related to a major concept of the course that students come to understand in order to meet the objective.

• *Generate Ideas*—provides students an outlet for showing what they know about the challenge. It can serve as a baseline or pre-assessment.

• *Multiple Perspectives*—provide insights on the challenge. These statements or comments from colleagues, stakeholders and experts do not provide a solution but should help the students see the many dimensions to the challenge and in some cases, “reframing the problem”.

• *Research and Revise*—engages students in learning activities linked to the challenge. Students dig into the research, theories, evidence-based practices and so forth.

• *Test Your Mettle*—students apply course content to a solution, in some cases, they apply the solution and test it’s effects. This step helps students reflect on and synthesize what they know. They may have to go back to the *Research and Revise* phase if they find that they need to learn more.

• *Go Public*—provides students an outlet to demonstrate what they know at the end of the module. This could be in the form of a test, a presentation, or other assignment.
Schon- reflection on action

- Reflecting after something happens
- Reconsider the situation
- Think about what needs changing for the future
REFRAMING

Blame the student

Take responsibility

Negative perception of student

Take action

Blame the student
- Student is disrespectful
- Student doesn’t listen

Take responsibility
- How can I help this student be successful in following directions?

Negative perception of student
- Lower expectation
- Get meaner/ firmer/ tougher
- Punitive strategies

Take Action
- Give brief directions
- Allow student to do one step at a time
PURPOSE AND PROCEDURE

• To determine the effect of an online format for problem identification and solution on student learning and application of content in graduate education courses.
• Students in two graduate courses were engaged in identifying problems of practice and identifying solutions through the “Learning Cycle”
• Data were collected from three sources: artifacts, discussion board posts, Qualtrics survey
IDENTIFY PROBLEMS

• Bumpy Moments
  – Graduate students are asked
    • to identify a classroom predicament that they were outcome
    • to consider multiple perspectives
    • to reframe the problem
• The bumpy moment that really sticks out to me was with “D’Angelo”, a 7th black student. D’Angelo was a known behavior problem in the school but he really liked to act out in my classroom. Every day he would be combative, argumentative, and work his best to try to get the rest of the class to misbehave. I had no idea how to control him and I dreaded his class. In order to survive, I ended up kicking D’Angelo out of my class every day. If I am being completely honest, there were days he probably was trying to do better but the minute he would open his mouth I would send him out. I didn’t even try to work with him, get to know him or try to see if I could have a positive effect on him. I just removed him day after day. The other teachers didn’t blame me. In fact, they believed it was a good move to try to “teach him a lesson.”

excerpt
IDENTIFY PROBLEMS

• Motivation case studies
  – Graduate students are asked to
    • identify and describe student(s) for whom motivation is
    • consider multiple perspectives and multiple theories of
    • reframe the problem
For my case study I want to focus on my challenge student "Chuck". This student is in the OCS program, has a mother who is an educator and is a mixed minority student (Native American and Mexican). This student is often very rude, blunt and disengaged in the classroom. His behaviors are directed towards teachers as well as peers. He is definitely a reluctant learner. He often says he is bored or "this class is boring" and then puts his head down. He will say "if the class is boring I'm going to sleep". On the flip side, he has exhibited very genuinely caring behaviors towards students with autism and gets very impassioned about certain topics. While he can initially have an attitude of "I know this and I'll talk over you to tell you you're wrong." I've noticed giving him the space to express himself and then asking leading questions to get him to think a bit more about the issue can redirect him a bit. He does not really respond to external rewards consistently. You can offer him food based rewards (picking from the class store for free) and it is a low motivator, he often has his own food anyway.
IDENTIFY PROBLEMS

• Single subject research project
  – Brainstorm topic considering student population, academic needs, behavioral needs, social emotional
  – Narrow topic through discussions with peers and
EXAMPLE OF STUDENT IDENTIFIED PROBLEM

• I would be interested in researching how to help children with autism reach out more in communicating. Most of the time, students with autism do not initiate conversation. Although most students are taught at an early age how to respond appropriately to others, they still leave it to someone to initiate social interaction. How can special education teachers interact more with students to help improve students ability to start a conversation?

• For my research project I would like to look at the effects of giving students wait time when asked a question. I have noticed that my students tend to let the same three students answer questions that I ask in class. I want to implement a wait time (maybe with a timer) and give them time to possibly write their answers down too. I would like to record how many different students that I have that are willing to participate and see if that changes when I give students wait time to think about what they want to say.
COLLABORATION

• Students collaborate to brainstorm solutions and interventions
• Students give each other feedback
• Students present post their solution to the class
POPULATION

- SPED 555- Graduate course in Special Education, Majority current teachers working toward a teaching license – 19 students
- SPED 682- Graduate course in Special Education, toward end of program, both MAT (Teachers working toward license) and MAED students. 15 students
DATA COLLECTION

Artifacts
• We looked at student solutions to document evidence of application of course content.
• We looked at student collected data to find evidence that their solutions were effective

Analysis of student discussion board posts
• We identified themes in posts
• We looked for evidence of student learning

Qualtrics survey
• Students were asked to identify the extent to which identifying problems of practice and determining solutions contributed to learning and applying course content
...The first collage project he did, he was resistant to me really trying to get him to dig deeper into the issues, but he was more willing to dig deeper on this project, but I think it's because it was even more relevant to his interest. Also, another big motivator that I stumbled upon by accident was simple, but effective. This was building trust and relationship with him.
RESULTS: ANALYSIS OF DISCUSSION BOARD POSTS

• “AHA” moments
  – Much like the research I reviewed, the SRSD approach proved to be effective. The students enjoyed the lessons and I was surprised that they made improvements in such a short time period.

  – We have one student who does better when she is able breaks. We often used these breaks (during which she etc) as a reinforcer, although oftentimes she seems to on the breaks and loses focus when it is close to break worked better since we have turned the breaks into an done at a certain time rather than after a certain amount completion.
• Peer Learning
  – Wow, this bumpy moment could be my classroom this year. I am the general ed teacher in a 6th grade ELA teacher is having a very hard time with the students. Almost on a daily basis, my EC teacher is telling me that problems when the kids go to her room to work. I am always shocked by this because they are really good kids completely transparent I had been thinking to myself that she doesn't have good classroom management, that yours. After reading your bumpy moment, I realized that I have not been giving her authority in the classroom. her as their teacher but just a helper. That is on me. She waits for me to tell her what to do and I have not given part of the classroom. I have some ideas on how to change that based on this bumpy moment. Thank you for help us a great deal.

  – I am also in a science class (8th grade science) and it is exciting to see a science-based research question. I question to answer for this project and I am excited to see what your results are. I really think providing students will enable them to be more a part of classroom discussions. I have found though that many of my speaking in front of the class, even if they have good ideas because they are either intimidated or sometimes thoughts out clearly. Maybe small group discussions would help with their participation as well. At least to start con dent.. then move to a biggerdiscussion after they have con dence in their answers.
Application of course content

- This bumpy moment reminds me of some of my experiences with being a new students I taught were used to an entirely different set of expectations compared had not built that relationship and trust with them so they were not as motivated to thing I realized very quickly was the need to establish my expectations before have also found that this needs to be reiterated frequently by using positive praise meeting my expectations.

- There are three take-aways from this module that I feel are important. The first of subject matter being relevant to the student. Way too many times I have into space. If the subject matter is too difficult or does not pertain to anything they seen or experienced it is just words on a page. As educators, we have to everyone has been exposed to many of the things we have. We have to bring the classroom.
Q9 - How helpful to understanding course content was it to identify strategies and solutions for addressing that problem?
Q11 - To what extent did identifying a problem and solution contribute to learning course content?
Q10 - To what extent were you able to apply the strategy/solution you generated in your teaching practice?
Q5 - How helpful or unhelpful to understanding course content was it to identify a problem from your own practice or experience?
Q20 - To what extent do you feel your strategy/solution was helpful?

- To a great extent
- To a moderate extent
- To a slight extent
- It was not helpful at all
Please add any additional comments regarding identifying problems from your own work and subsequent solutions as assignments in your course with regard to how that practice may contribute or distract from learning.

<table>
<thead>
<tr>
<th>The bumpy moment assignment helped me to reflect on and solve a difficult situation in my classroom.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying theories of motivation to my own group of students helped me to finally address an issue I've been grappling with for years. Having input from my classmates and the instructor made all of the difference.</td>
</tr>
<tr>
<td>The course was very helpful in understanding the content.</td>
</tr>
<tr>
<td>I plan to continue to implement the ideas we discussed in class. Thanks so much for great information!!</td>
</tr>
<tr>
<td>This was a great learning tool that made the class very useful and beneficial to me.</td>
</tr>
<tr>
<td>I am currently working as an EC program specialist so I don't have a classroom of my own which makes it a little harder to apply the content to a problem in the classroom.</td>
</tr>
</tbody>
</table>
LIMITATIONS

- Variance in assignments
- No comparison group
CONCLUSIONS

• Engaging students in identifying problems and predicaments in their practice engaged students in content in meaningful ways, helped them to apply content, and helped them to improve their own professional practice.
REFERENCES


THE END

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