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Creative Activities for Trying Times

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Disclosures

I have no conflicts of interest, or any financial disclosures regarding this subject.

Objectives

1. Attendees will be able to utilize different classroom activities to engage online learners.

2. Attendees will be able to create case studies using the “create your own adventure” format.

The Challenge

- The effect of the COVID pandemic on learning
- How to foster critical thinking/clinical reasoning in an online environment?
- How do you keep students engaged?

Case studies in the Online Setting

- *Typical* case studies
  - Lots of questions
  - Time consuming to do in class
  - Have to be completed sequentially
  - Difficult to do in real time with a large group, feedback is not timely

Rethinking the Unfolding Case Study

- The National League for Nursing describes an unfolding case study as: a case study that evolves over time in a manner that is unpredictable to the learner.
- Uses storytelling
- Allows for a simulated experience of continuity of care
- Used in many disciplines to develop critical thinking, enhance problem solving skills, and facilitate learning (Mills, et al. 2014)

Option 1: Segmented Case Study

A case study can be split into sections and assigned to groups of students. Each section is a continuation of the same patient, a snapshot in different moments in the progression of the patient's care.

Option 1: Segmented case study

Part 1

- Infection: Uncomplicated lower urinary tract infection
  - Instructor provides background (Patient presents to her primary care provider with malodorous urine, incontinence, and confusion.
- 5-6 questions on clinical manifestations, diagnostics, assessment, and treatment

Part 2

- Infection: Complicated upper urinary tract infection
- Advance the story: Patient presents to ED febrile and lethargic
- 5-6 questions on clinical manifestations, diagnostics, assessment, and treatment

Part 3

- Infection: Sepsis and septic shock
- Advance the story: Patient decompensates 1-2 days later, presents with decreased blood pressure and increased oxygen requirement
- 5-6 questions on clinical manifestations, diagnostics, assessment, and treatment

Segmented Case Study

- Benefits:
  - Time management
  - Fewer, more manageable questions
  - Each segment captures a moment in time and can be done independent of the other segments
- Tying in concepts/exemplars to reinforce teaching from lectures

Option 2: Reverse Case Study

- Don’t have time to create a case study from scratch?

  Have the students do the work instead!

- Step 1: Provide relevant information
  - Concept: Clotting and Acid/Base balance
    - ABG: pH 7.56, $PaCO_2$: 23 mmHg, HCO_3 25 mmol/L, PaO_2: 75 mmHg, SaO_2: 87%, Base excess 6 mEq/L
    - Other lab data: D-dimer 25.3 mg/L FEU (normal is < 0.5)
    - Vital signs: HR 129, BP 131/82, SPO_2 88% on room air, RR 32

- Step 2: Assign students to create a story that uses the data supplied
  - Student creates a picture of what they think this patient might look like
  - Inaccuracies can be addressed and discussed in real time

Reverse Case Study

- Example 2: Use keywords to create a story
  - Concept: Behavior
    - Write a patient scenario using the following keywords:
      - 5 alcoholic drinks a day, blood alcohol concentration, hypoglycemia, thiamine, folic acid, Banana bag, CIWA-A protocol, withdrawal, benzodiazepines, disulfiram, SBIRT
  - Teaching Points:
    - Describe how a patient would present and how they would respond to treatment modalities
    - Cover a progression of events rather than everything happening in one moment of time
    - Include information pertaining to clinical manifestations of the condition, diagnostic tests, assessments, treatments, and expected outcomes.

Choose your own....Case Study?

- What if a case study could have multiple outcomes?
- What if those outcomes can be decided by the user?
- What effects would this have on learning?

Option 3: Choose your own adventure

- The idea of choosing your own adventure is not new.
- A story is presented, with the user having to decide what to do next.
- This format changes the story depending on what is chosen.

Choose your own adventure: Coronary Artery Disease

G.P. is a 60-year-old retired businessman who is married and has 3 grown children. He began feeling changes in his chest about 10 days ago. He has hypertension (HTN) and a 3-year history of angina pectoris. During the past week, he has had frequent episodes of mid-chest discomfort. G.P. is admitted to your unit and given ASA, 325mg chewable and 5mg metoprolol IV. He calls you into the room 2 hours later complaining of heavy substernal pain accompanied by epigastric pain. What is your next step?

Obtain a STAT 12 lead ECG 

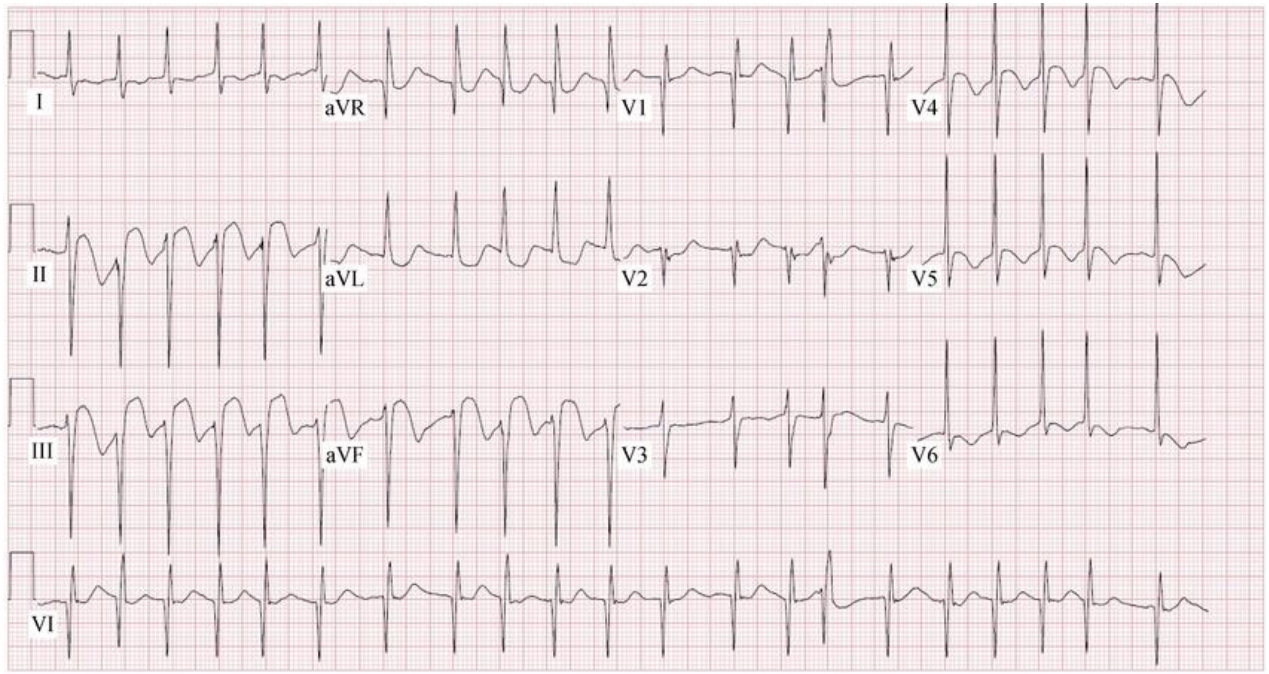
Administration of a nitroglycerin tablet, SL

Place the patient on a non-rebreather mask at 100%

Draw cardiac labs

Choose your own adventure: Coronary Artery Disease

You obtain a stat 12 lead EKG which shows the following:



Atrial fibrillation with ST elevation. What do you anticipate will be the next step?

Prepare the patient for percutaneous coronary intervention

Administer thrombolytics

Prepare the patient for Coronary artery bypass surgery

Place the patient on a heparin drip, with the understanding he will undergo PCI in 12 hours when he is more stable

Choose your own adventure: Practice

You identify that the patient is currently having an acute inferior myocardial infarction (evidenced by ST elevation in leads II, III, and AVF) and that the first line of treatment for MI is PCI. Labs are drawn that confirm G.P. as a candidate for PCI (which labs would this be?). You are at a facility that does PCI and catheterization is performed 60 minutes after the heavy substernal pain began. A femoral approach was used, balloon angioplasty is performed, and 2 stents are placed. G.P. returns to your unit post-catheterization.

What are some of the immediate post-procedure interventions for this patient?

Frequent neurovascular assessments of the hands, administration of docusate, frequent monitoring of the puncture site, and early ambulation.

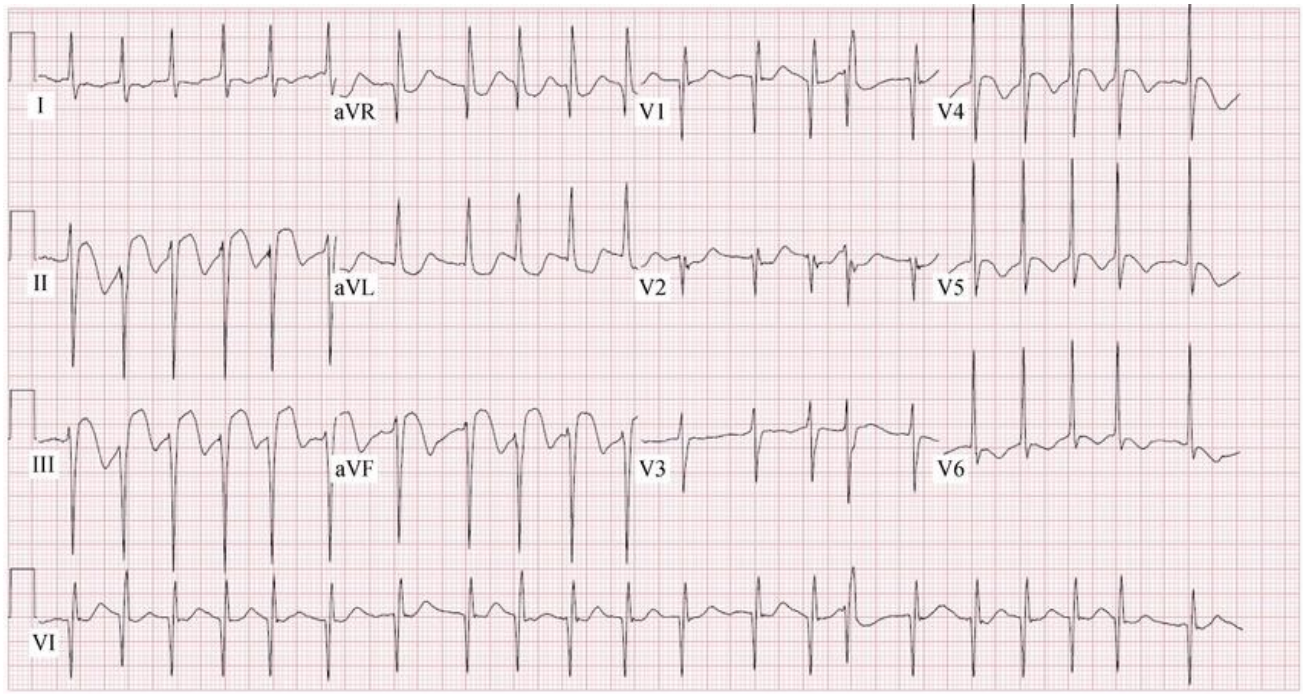
Frequent monitoring of troponin and CK-MB labs, administration of Lisinopril, frequent monitoring of the puncture site, and out of bed as tolerated.

Frequent neurological assessments, administration of morphine, frequent monitoring of the puncture site, and bedrest with bathroom privileges.

Frequent neurovascular assessments of the lower extremities, administration of nitroglycerin, frequent monitoring of the puncture site, and bed rest for 4-6 hours.

Choose your own adventure: Practice

You obtain a stat 12 lead EKG which shows the following:



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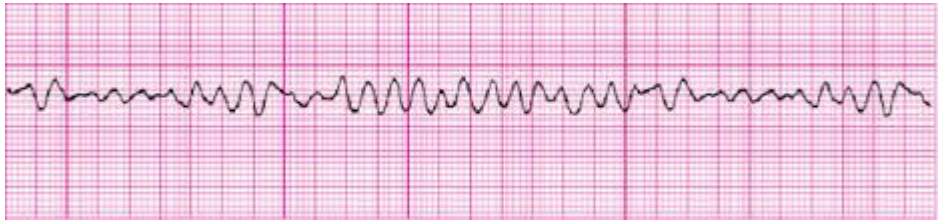
Choose your own adventure: Practice

You decide to draw cardiac labs and place the patient on a heparin drip. You decide to keep a close eye on G.P.'s cardiac monitor. You come into the room an hour later and find G.P. slumped over. This rhythm is on his monitor:



What is your next step?

Order a stat 12 lead EKG

Start CPR and apply a defibrillator

Go and find your charge nurse for help

Apply a non-rebreather at 100%FiO2

Choose your own adventure: Instructions

Step 1: PowerPoint presentation: Start with a few blank slides

Step 2: Begin your case study, giving some background on the patient

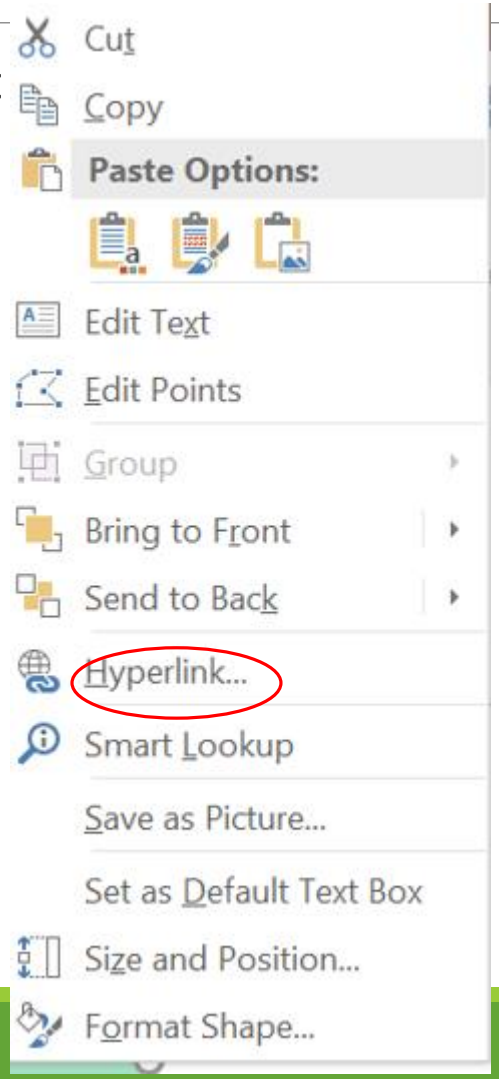
Step 3: Insert text box “Click here to continue” or with a series of choices

Click here to continue

Choose your own adventure

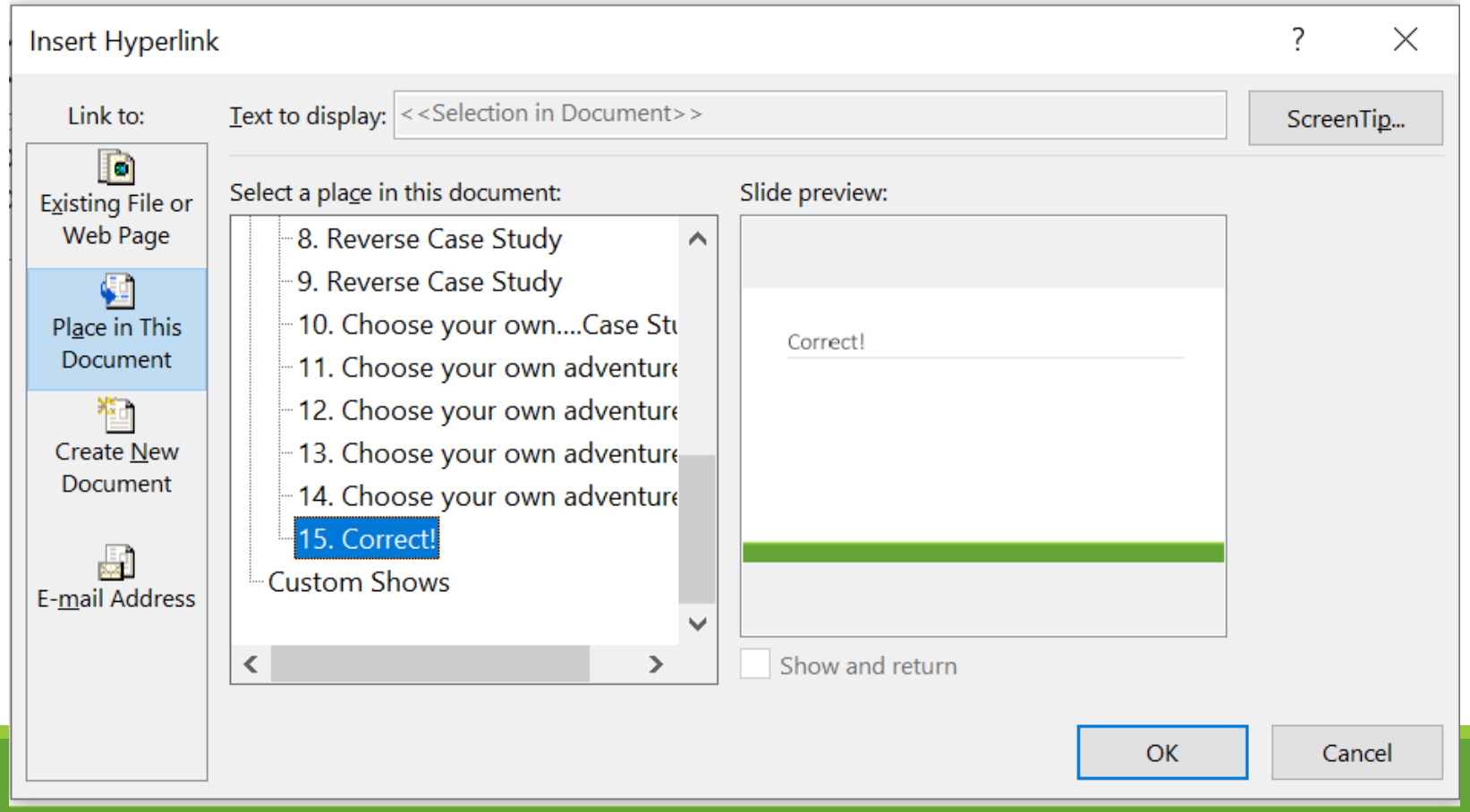
Once you have your “button” highlight the text box and select “hyperlink”

Click here to continue



Choose your own adventure

Each button can be hyperlinked to a different slide. Students can make choices that change the outcome of the case study!



Choose your own adventure

- Choose your own adventure format is currently being used as an in-class activity in a flipped classroom setting. Students are split into groups with an instructor as a ”tour guide” to facilitate discussions. Students also have access to the activity to go back and choose a different path if they wish.

Advantages observed

- Patients can be written to mimic more real-life situations with different solutions.
- Students may feel more engaged if they are actively deciding the course of action of their patients. *Why did you choose that action?*
- Case studies can be repeated with a different outcome, so that more than one learning objective can be met.
- Students can learn just as much (if not more) from “wrong” answers as they can from correct ones.
- Uses PowerPoint, no new technology has to be purchased.

Lessons learned

- Having the ability to take different paths can make the creation of the case study very complicated. Sometimes having too many choices was not always desirable.
- Creating a case study using this method is time consuming. Therefore, I suggest that the writer of the case study have some clear “paths” or objectives in mind when creating their own.
- The flipped classroom model requires the student to do their pre-work (but this is not a new problem).
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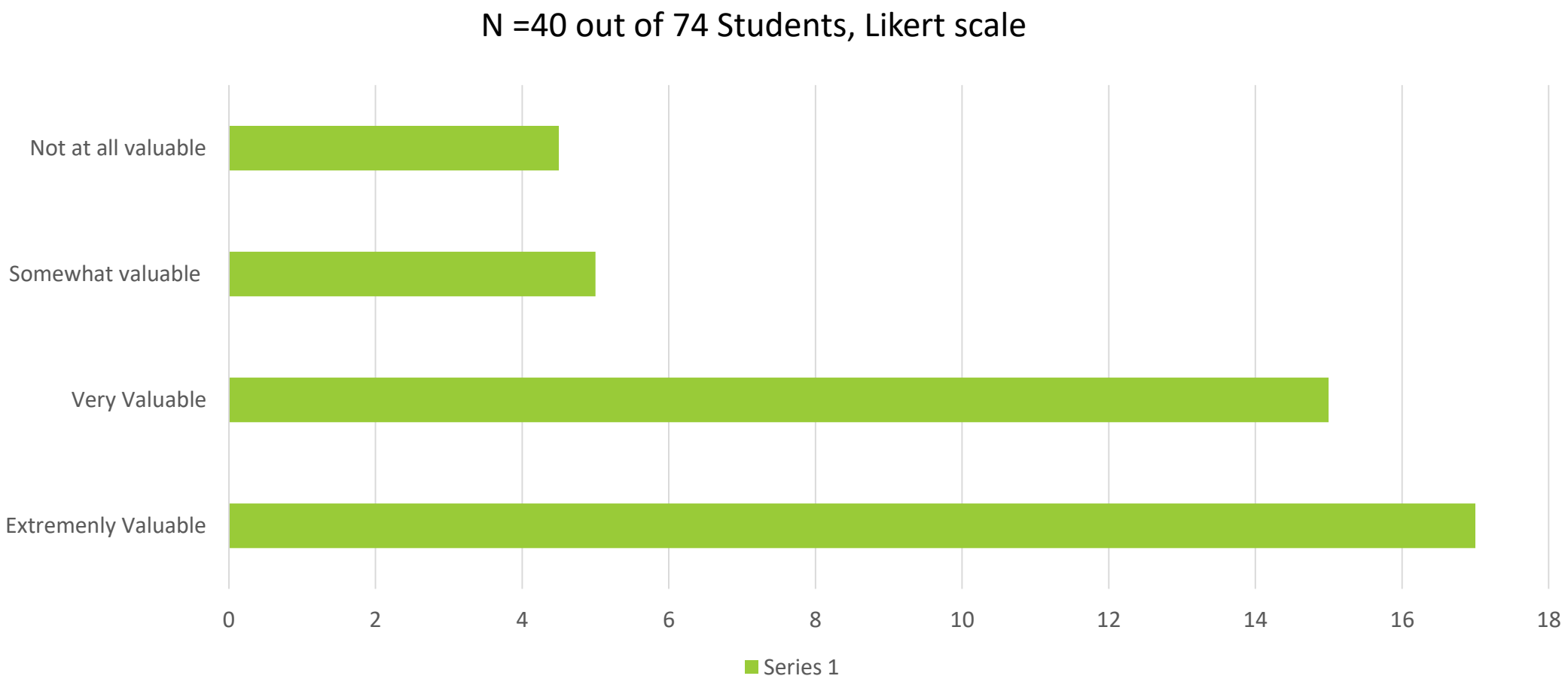
Student Response



Anecdotes

“KEEP DOING IT!!!! It is greatly appreciated to have activities built around the content covered in lectures. In previous semesters we got “cookie-cutter” case studies that do not exactly match the content covered. In doing activities relevant to lecture content, it helps to solidify familiarization with content.”

“The case studies written by my instructors are based off of real-life knowledge, experience, and everyday practice. I find that the case studies from a textbook are confusion, many times not applicable and are not effective for my learning.”

“I especially enjoy the choose your own adventure PPT. They are extra helpful, and a good way to engage with what I’m studying.”

“Having a variety of application activities really work to keep me interested and involved. It’s not just the same assignments over and over again, we get to mix it up and use application skills in a different way.”

References

Mills, J., West, C., Langtree, T., Usher, K., Henry, R. Chamberlain-Salaun, J., and Mason, M. (2014). “Putting it together: Unfolding case studies and high-fidelity simulation in the first-year of an undergraduate nursing curriculum. *Nurse Education in Practice, 14*(I), 12-17. doi: 10.1016/j.nepr.2013.06.003

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