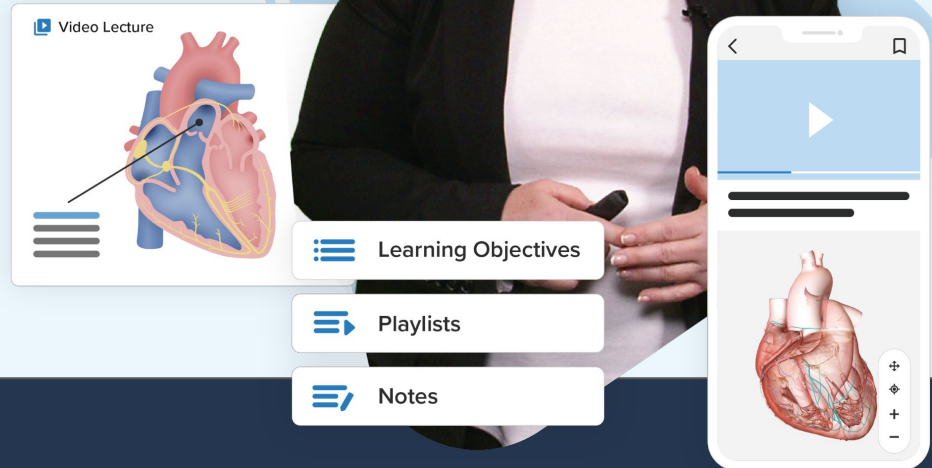


Active Learning: How to Engage Your Students

With Rhonda Lawes, RN, PhD
Nov 17, 2022



Webinar Series Host



Prof. Rhonda Lawes

- Director of Nursing at Lecturio
- Currently teaching in BSN program with emphasis on nursing research and advanced pathophysiology and pharmacology
- Award-winning, certified nurse educator and PhD(c) in educational psychology with over 30 years of experience as a nurse



Adonis Wazir



Eleonora Merker



Satria Nur Sya'ban

Webinar Series Team



Aaron Hill



Solina Jean-Louis



Sara Keeth



Today's Agenda

- 1 Introduction
- 2 Background and Definition
- 3 Elaboration, Generation, & Reflection
- 4 Concrete Applications
- 5 Conclusions

Learning outcomes

After this session, participants will be able to:

- 1 **Define** active learning in the context of the nursing classroom
- 2 **Identify** practical active learning strategies, including elaboration, generation, and reflection
- 3 **Create** a plan to implement active learning into their professional practice
- 4 **Recognize** common but ineffective active learning conventions that students often use
- 5 **Identify** key strategies for using technology to facilitate active learning



Our Platform Today: Padlet

- Please **scan the QR code** with your phone, or **click the link in the chat** to open Padlet in your browser.
- If you have a second screen, please open the Padlet tab there.
- Please respond to each question only when the speaker indicates it is time to respond to the question



We Appreciate **You!**

Join us until the end for a chance to win a **\$100 (USD)** Amazon gift card!

By joining this contest, you are agreeing to having your first name shared on our Facebook page when we announce the winner for this webinar.



Congratulations Dr. J.G!

We would like to share our appreciation for Dr. J.G who has actively participated in our previous webinar and contributed to the quality of our discussion on Self-Regulated Learning!



Section 1

Introduction

Traditional Lectures: A Double-Edged Sword

It often lends itself to passivity

- Traditional lectures have dominated education for *centuries*
- They are **cost-effective**
- They can give the false impression of effectively **conveying information simultaneously** to many people



Traditional Lectures: A Double-Edged Sword

However...

- It is **often passive** in nature
- Engagement **may feel daunting** in this format **for both parties**
- Easy to feel **pessimistic** that classes will ever change



A Little Engagement Goes a Long Way



- Active teaching components have been proven to deliver better learning outcomes¹
- It leads to ease in paying attention, increased participation, higher overall scores on tests^{1,2}
- Teachers also increasingly prefer a “delegator teaching style”³

So how can we make this change?

-
1. Freeman S, Eddy SL, McDonough M, Smith MK, Okoroafor N, Jordt H, et al. Active learning increases student performance in science, engineering, and mathematics. *Proc Natl Acad Sci*. 2014 Jun 10;111(23):8410–5.
 2. Alaagib NA, Musa OA, Saeed AM. Comparison of the effectiveness of lectures based on problems and traditional lectures in physiology teaching in Sudan. *BMC Med Educ*. 2019 Dec;19(1):36
 3. Dash NR, Guraya SY, Al Bataineh MT, Abdalla ME, Yusoff MSB, Al-Qahtani MF, et al. Preferred teaching styles of medical faculty: an international multi-center study. *BMC Med Educ*. 2020 Dec;20(1):480.



Question

What have you found to be the biggest challenge in engaging your students?

Share your thoughts in *Padlet*



Section 2

Background and Definition

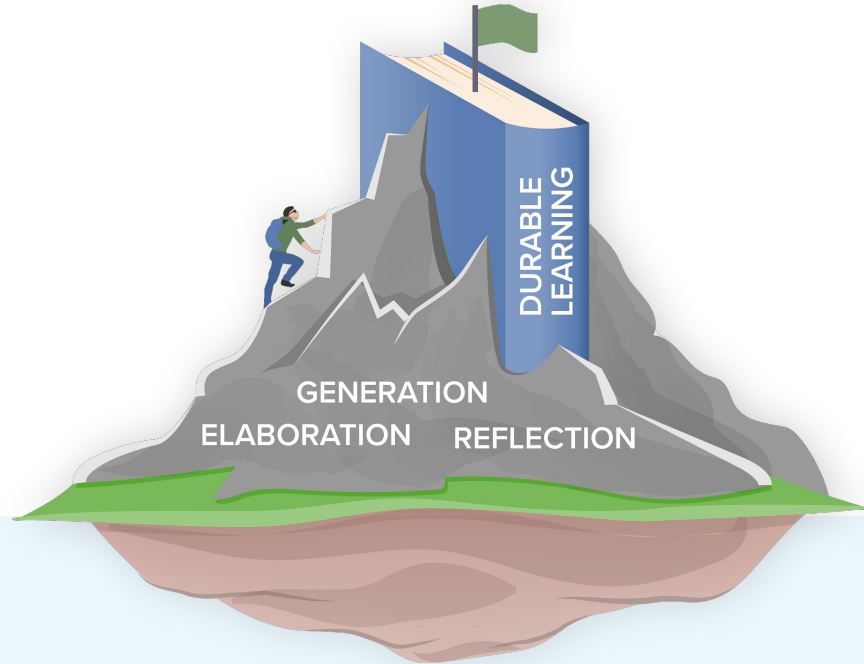


Question

In your own words, what do you think Active Learning is?

Share your thoughts in *Padlet*

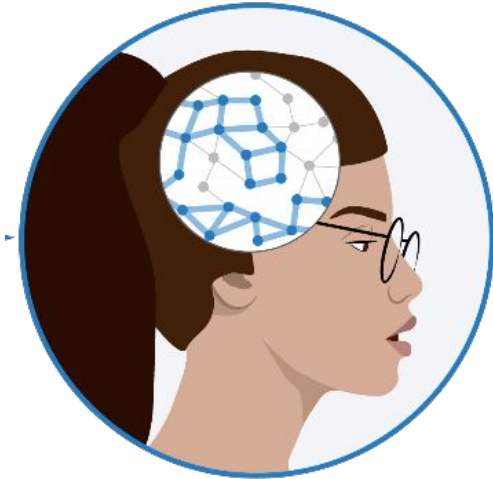
Definition of Active Learning



Instructional activities that involve students in the delivery and encourage them to think about what they are doing¹

1. Bonwell CC, Eison JA. Active learning: creating excitement in the classroom. Washington, DC: School of Education and Human Development, George Washington University; 1991. 104 p. (ASHE-ERIC higher education report).

Definition of Schemas



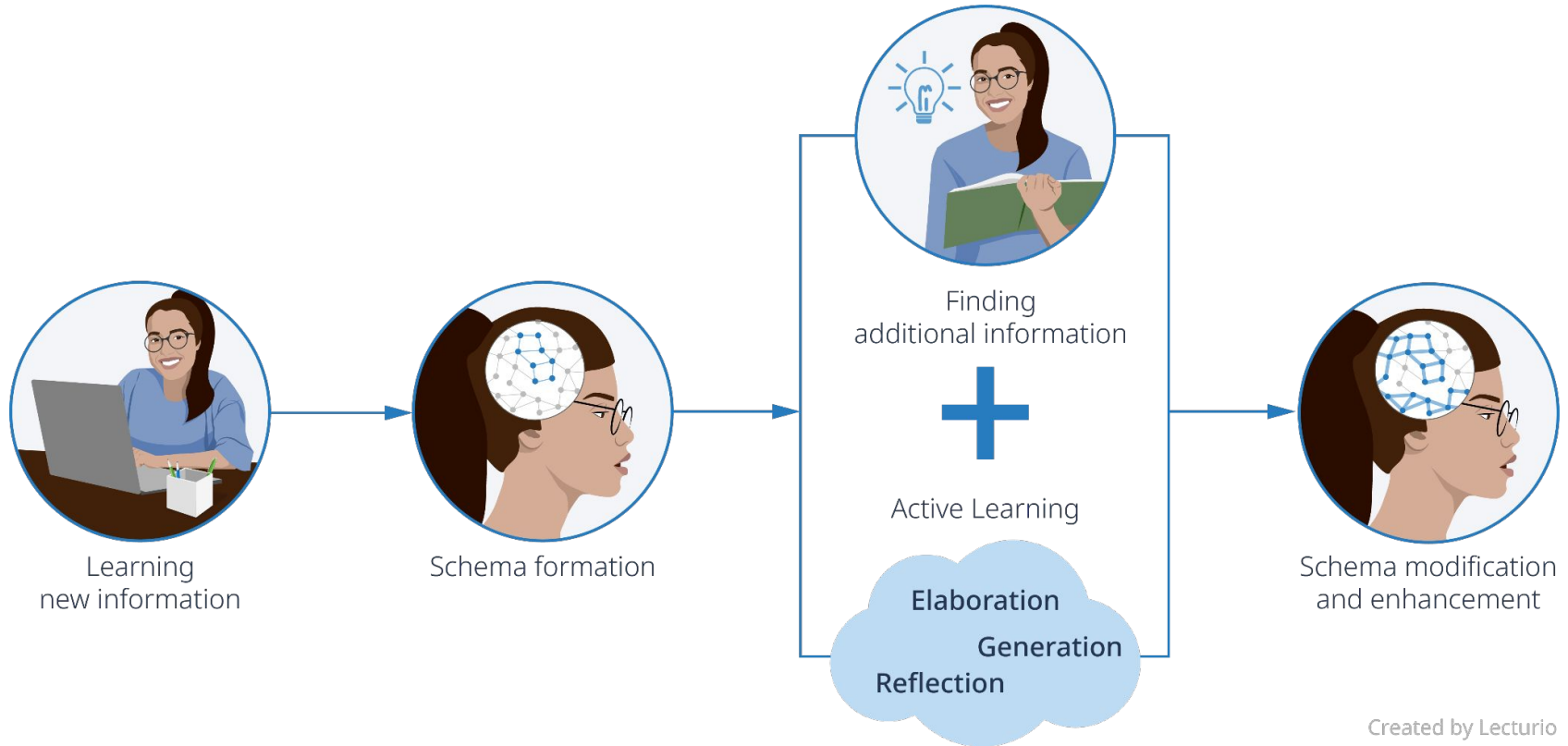
- **Mental models** that organize elements of information based on how they will be processed¹
- Learners build on and modify schemas when they consume new information.²
- Very important for student-centered active learning³
- Well-developed schemas can lead to easier retrieval of information¹

1. Qiao YQ, Shen J, Liang X, Ding S, Chen FY, Shao L, et al. Using cognitive theory to facilitate medical education. BMC Med Educ [Internet]. 2014 Dec [cited 2022 Nov 14];14(1):79. Available from: <https://bmcmmededuc.biomedcentral.com/articles/10.1186/1472-6920-14-79>

2. Wadsworth, Barry J. Piaget's Theory of Cognitive and Affective Development: Foundations of Constructivism. White Plains, N.Y.: Longman Publishers USA; 1996.

3. Ruiters DJ, van Kesteren MTR, Fernandez G. How to achieve synergy between medical education and cognitive neuroscience? An exercise on prior knowledge in understanding. Adv in Health Sci Educ [Internet]. 2012 May [cited 2022 Nov 14];17(2):225–40. Available from: <http://link.springer.com/10.1007/s10459-010-9244-5>

How Active Learning Works



Why Active Learning Works

Cognitive Science

- Includes **higher-order thinking** and **metacognition**¹
- May help reduce unnecessary **cognitive load** when recalling information²

Neuroscience

- Allows for better **consolidation** of **neural links**³
- Fosters better **schema formation** and **modification**^{3,4}

1. Bonwell CC, Eison JA. Active learning: creating excitement in the classroom. Washington, DC: School of Education and Human Development, George Washington University; 1991. 104 p. (ASHE-ERIC higher education report).

2. Qiao YQ, Shen J, Liang X, Ding S, Chen FY, Shao L, et al. Using cognitive theory to facilitate medical education. BMC Med Educ [Internet]. 2014 Dec [cited 2022 Nov 14];14(1):79. Available from: <https://bmcmmeduc.biomedcentral.com/articles/10.1186/1472-6920-14-79>

3. Oakley B, EdD BR, Sejnowski TJ. Uncommon Sense Teaching: Practical Insights in Brain Science to Help Students Learn. New York: TarcherPerigee; 2021. 336 p.

4. McKenzie S, Eichenbaum H. Consolidation and Reconsolidation: Two Lives of Memories? Neuron. 2011 Jul;71(2):224–33.



Section 3

Elaboration, Generation and Reflection



Question

1

Based on what you currently know, what have you found to be some common causes for **lack of** or **loss of engagement** in students?

Share your thoughts in *Padlet*

Case Study / Part 1



- Nurse Y is a teacher at Z College.
- They want to motivate and engage their students more during his classes.
- Their students currently prefer studying on their own.
- Faculty Nurse Y wants to improve their course, but isn't sure where to start, so they come to you for help.



Question

2

Why do you think Faculty Y's students lose focus and finds their examinations too difficult?

Share your thoughts in *Padlet*



Question

3

If you had encountered Faculty Y's problems in your own classrooms, what would you have done to solve these problems?

Share your thoughts in *Padlet*

Case Study / Part 2



- Faculty Y's lectures contain a lot of information, in the form of both narrated and text material.
- They see students losing focus in his classes and finds it challenging to engage them in Q&A sessions.
- They always expects their students to apply the concepts they present, but they find that they struggle to do so.
- Some students have said that Faculty Y's tests are too challenging.



Generation



Case Study Discussion

*“Based on what you currently know, what have you found to be some common causes for **lack of** or **loss of engagement** in students?”*

- **Question Structure:** Open-ended, comes before content and/or key information is given and asks to relate to existing information
- **Mechanism:**
 - It prompts students to **generate** a response to the question and integrate with prior knowledge, making learning **effortful**.
 - Any information generated will be **encoded more strongly**.
 - Understanding can be strengthened by any relevant information shared afterward.

Defining Generation



- An active learning strategy where students **integrate** new **information** with **existing knowledge** and experience¹
- May involve the learner **generating a solution** or **defining concept for himself or herself** *before or in addition to* being taught a concept²
- Makes the mind **more receptive to new learning**³

-
1. Hall SM, Lieto J, Martin R. How Using Generative Learning Strategies Improved Medical Student Self-Competency in End-of-Life Care. TPJ [Internet]. 2018 Mar [cited 2022 Nov 4];22(1):17–064. Available from: <http://www.thepermanentejournal.org/doi/10.7812/TPP/17-064>
 2. McCurdy MP, Viechtbauer W, Sklenar AM, Frankenstein AN, Leshikar ED. Theories of the generation effect and the impact of generation constraint: A meta-analytic review. Psychon Bull Rev. 2020 Dec;27(6):1139–65.
 3. Brown PC. Make it stick: the science of successful learning. Cambridge, Massachusetts: The Belknap Press of Harvard University Press; 2014. 313 p.

The Evidence for **Generation**



- Students generating and independently answering their own questions **achieved better retention.**¹
- It has been found to work best when learners **produce material during the encoding process.**¹
- Under an fMRI scan, it has been observed to cause **broader neural network participation** than simple reading.²

1. McCurdy MP, Viechtbauer W, Sklenar AM, Frankenstein AN, Leshikar ED. Theories of the generation effect and the impact of generation constraint: A meta-analytic review. *Psychon Bull Rev.* 2020 Dec;27(6):1139–65.

2. Brown PC. *Make it stick: the science of successful learning.* Cambridge, Massachusetts: The Belknap Press of Harvard University Press; 2014. 313 p.



Question

Have you applied Generation in your own classrooms before? How was your experience with it?

Share your thoughts in *Padlet*

Applications of Generation

1

Self-Explaining

2

Summarizing

3

Concept-Mapping



1. Fiorella L, Mayer RE. Eight Ways to Promote Generative Learning. *Educ Psychol Rev* [Internet]. 2016 Dec [cited 2021 Dec 23];28(4):717–41. Available from: <http://link.springer.com/10.1007/s10648-015-9348-9>



Elaboration



Case Study Discussion

“Why do you think Nurse Y’s students lose focus and finds his examinations too difficult?”

- **Question Structure:** Elaborative, utilizes “*why*” and “*how*” prompts
- **Mechanism:**
 - It prompts students to delineate *reasons for the fact*, encouraging them to utilize existing knowledge to **interpret and build on** available information.
 - Once answered, this builds on the existing knowledge gleaned from the case itself.
 - Elaborating creates more elaborate schemas and adds new layers of meaning to new concepts.

Defining Elaboration



- A strategy that involves the **learner's enhancement** of information¹
- Students *clarifies* or *specifies* relationships between new information with existing knowledge²
- Enhances **schema** development by connecting **new content** to **established content** in **long-term** memory.³
- Can be implemented by means of an **inference**, **image**, **comparison**, **illustration**, or **overall summary**.

1. Bjork RA. Memory and metamemory considerations in the training of human beings. In: Metacognition: Knowing about knowing. Cambridge, MA, US: The MIT Press; 1994. p. 185–205.

2. Hamilton R. Elaboration Effects on Learning. In: Seel NM, editor. Encyclopedia of the Sciences of Learning [Internet]. Boston, MA: Springer US; 2012 [cited 2021 Dec 4]. p. 1103–5. Available from: http://link.springer.com/10.1007/978-1-4419-1428-6_170

3. American Physiological Association. APA Dictionary of Psychology [Internet]. 2020 [cited 2021 Nov 4]. Available from: <https://dictionary.apa.org/>

The Evidence for Elaboration



Literature shows that through elaborating, students will be able to:

- Generate multiple cues for retrieval.¹
- Add new layers of meaning to concepts.¹
- Create better long-term memory.²
- Experience better comprehension with elaboration³ and illustrative examples.⁴

1. Pressley M, McDaniel MA, Turnure JE, Wood E, Ahmad M. Generation and precision of elaboration: Effects on intentional and incidental learning. *J Exp Psychol Learn Mem Cogn*. 1987 Apr;13(2):291–300.
2. Bartsch LM, Oberauer K. The effects of elaboration on working memory and long-term memory across age. *J Mem Lang*. 2021 Jun;118:104215.
3. Pumilia CA, Lessans S, Harris D. An Evidence-Based Guide for Medical Students: How to Optimize the Use of Expanded-Retrieval Platforms. *Cureus* [Internet]. 2020 Sep 11 [cited 2021 Jan 23]; Available from: [link](#)
4. Rawson KA, Thomas RC, Jacoby LL. The Power of Examples: Illustrative Examples Enhance Conceptual Learning of Declarative Concepts. *Educ Psychol Rev*. 2015 Sep 1;27(3):483–504.



Question

What do you think are some applications of Elaboration in the classroom?

Share your thoughts in *Padlet*

Application of **Elaboration**

1

Illness Scripts

2

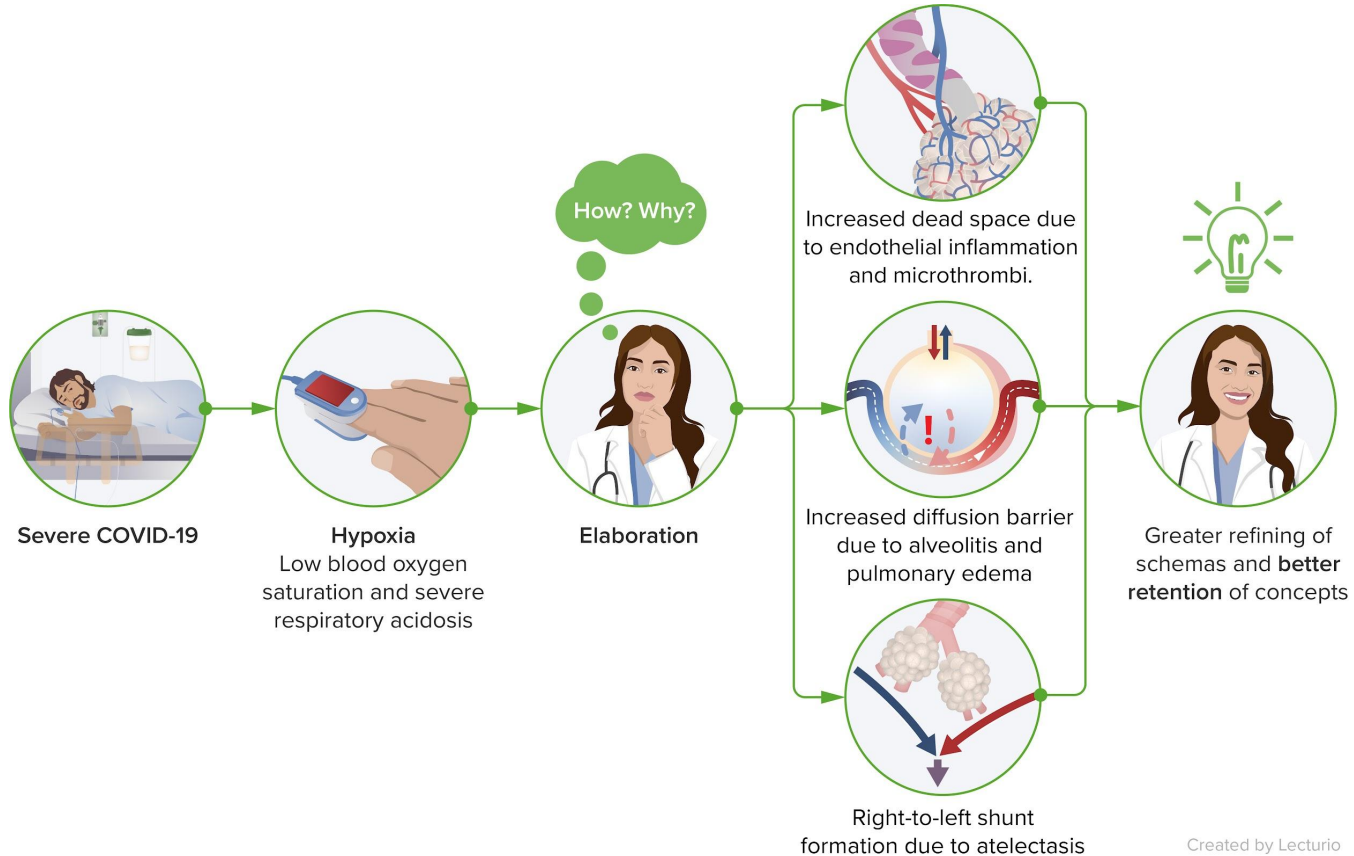
Elaborative Interrogation

3

Self-Explaining

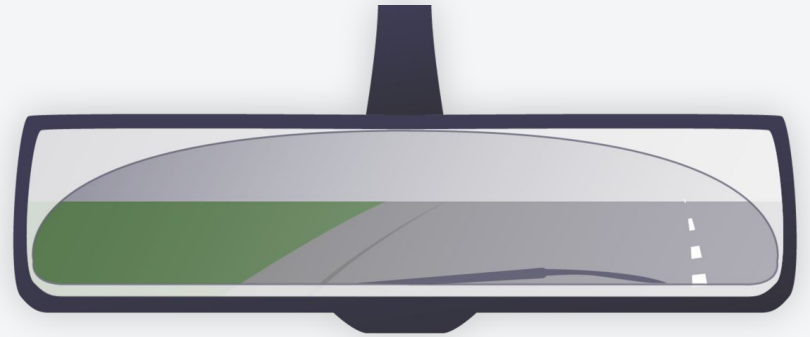


How Elaboration Works





Reflection



Case Study Discussion

“If you had encountered Nurse Y’s problems in your own classrooms, what would you have done to solve them?”

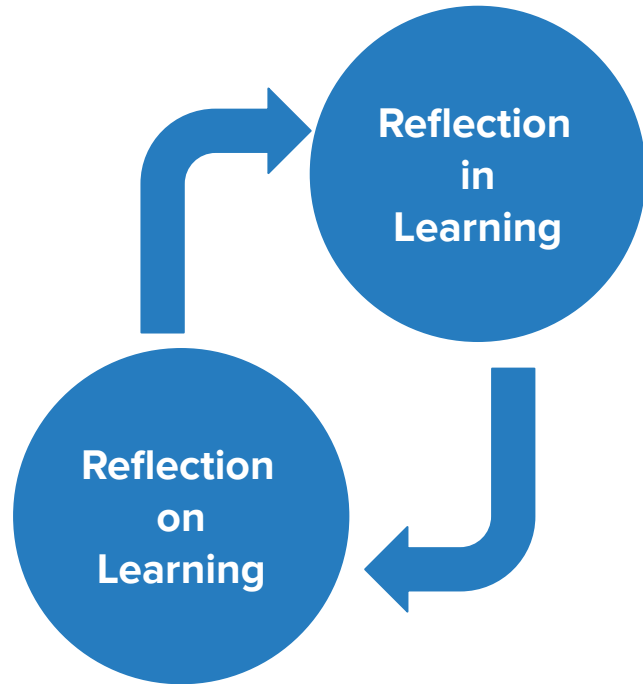
- **Question Structure:** Asks the respondents to reflect on past experiences or existing knowledge
- **Mechanism:**
 - It prompts students to reflect, leading them to self-introspection and actively encouraging them to synthesize better solutions.
 - It provides a framework for the reflection process, guiding learners in the appropriate direction relevant to the learning objectives of the course.

Defining Reflection



- **Intentional pausing** to give the brain time to **contemplate** observations and experiences, **consider** possible **interpretations**, and **synthesize meaning and context**
- **Involves** another important concept: **metacognition**, or thinking about one's thinking

How Reflection Works



Reflection in Learning

- Happens **during** learning
- It can act as a teaching strategy, prompting students to reflect on the content.

Reflection on Learning

- Happens **after** learning
- It leads to improvements in learning and in the use of better study strategies for the future

1. Mukhalalati BA, Taylor A. Adult Learning Theories in Context: A Quick Guide for Healthcare Professional Educators. J Med Educ Curric Dev. 2019 Jan;6:238212051984033.
2. Schön DA. Educating the reflective practitioner: toward a new design for teaching and learning in the professions. 1st ed. San Francisco: Jossey-Bass; 1987. 355 p. (The Jossey-Bass higher education series).

The Evidence for Reflection



- Improve **communication skills** in clinical settings¹ as well as **clinical reasoning**² and **critical thinking** skills³
- Self-reflection strengthens the link between **fundamental knowledge** and prior **patient experience** to improve “**diagnostic expertise and mastery**.”⁴
- It is an effective way to improve the learning of complex subjects and improve comfort in difficult medical situations.⁵

1. Pangh B, Jouybari L, Vakili MA, Sanagoo A, Torik A. The Effect of Reflection on Nurse-Patient Communication Skills in Emergency Medical Centers. J Caring Sci [Internet]. 2019 Jun 1 [cited 2022 Nov 4];8(2):75–81. Available from: <https://jcs.tbzmed.ac.ir/Abstract/jcs-22489>

2. Almomani EA, Attallah K. Enhancing Clinical Reasoning Skills through Structured Reflection Models [Internet]. In Review; 2020 Apr [cited 2022 Nov 4]. Available from: <https://www.researchsquare.com/article/rs-20183/v1>

3. Zhang C, Fan H, Xia J, Guo H, Jiang X, Yan Y. The Effects of Reflective Training on the Disposition of Critical Thinking for Nursing Students in China: A Controlled Trial. Asian Nursing Research [Internet]. 2017 Sep [cited 2022 Nov 4];11(3):194–200. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1976131716300627>

4. Shimizu T. Reflection Of Reflections: Building Diagnostic Expertise. Int J Gen Med. 2019;12:363–5.

5. Sandars J. The use of reflection in medical education: AMEE Guide No. 44. Med Teach. 2009 Jan;31(8):685–95.

Application of Reflection

1

Clinical Portfolio Assessments¹

2

Structured Journaling²

3

Facilitated Group Reflections²

1. Harden RM, Laidlaw JM. Essential skills for a medical teacher: An introduction to teaching and learning in medicine. Edinburgh: Elsevier; 2021.
2. Miraglia R, Asselin ME. Reflection as an Educational Strategy in Nursing Professional Development: An Integrative Review. *Journal for Nurses in Professional Development* [Internet]. 2015 [cited 2022 Nov 4];31(2):62–72. Available from: <http://journals.lww.com/01709760-201503000-00002>





Question

Have you ever used assessment as a way to promote reflection in students?
How did it go?

Share your thoughts in *Padlet*





Section 4

Concrete Applications

Application of Generation: Self-Explaining



What the students can do

They need to self-explain the thing they are learning to themselves:

- **Choose** the relevant core information
- **Restate** in their own words
- **Generate** inferences and **integrate** current learning with prior knowledge

What you need to do

- Incorporate this into your lesson plans
- Explain the purpose and correct examples of this action beforehand
- Specify the kinds of inferences you want them to make and guide their explanations

Application of Generation: Summarizing



What the students can do

In order to summarize the main concepts and ideas:

- **Select** the main ideas
- **State** the ideas **succinctly** (in a short and focused format)
- **Use their own words** and their own sentence structures

What you need to do

- **Provide examples**, point out effective summaries, & give feedback
- **Explain** the purpose of summarizing for better learning
- **Target shorter texts** with non-spatial ideas for summarizing

Application of Generation: Concept Mapping



What the students can do

Create a concept map showing the relationships between ideas:

- **Choose** the ideas for each level of mapping
- **Organize and define** the relationships between concepts
- **Integrate** current learning with prior knowledge

What you need to do

- **Incorporate concept maps** into your teaching
- **Provide instruction, and practice** for effective concept mapping
- Use concept mapping for **remediation** and lower-performing learners

Application of Elaboration: **Elaborative Interrogation**



What the students can do

- Learners need to create explanations for a stated fact
- Answer questions such as:
 - 1. How did this come to pass?**
 - 2. Why is this true but not the other?**

What you need to do

- The strength of the technique comes from “Richness” and “Distinction”. You can help maximise these with guided questioning
- Create an environment that maximizes the impact of the technique

-
1. Dunlosky J, Rawson KA, Marsh EJ, Nathan MJ, Willingham DT. Improving Students’ Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology. *Psychological Science in the Public Interest* [Internet]. 2013 [cited 2021 Nov 23];14(1):4–58. Available from: <https://www.jstor.org/stable/23484712>
 2. Nickson C. Elaboration and elaborative interrogation [Internet]. *Life in the Fast Lane • LITFL*. 2020 [cited 2022Nov4]. Available from: <https://litfl.com/elaboration-and-elaborative-interrogation/>

Application of Elaboration: **Illness Scripts**



What the students can do

- Learners cluster relevant clinical features to develop a plan of care
- Practice clinical judgment & reasoning
- Write scripts for 2-3 probable illnesses
- Find contradictions in each other's scripts and support those critiques with evidence

What you need to do

- Provide sample cases
- Model clinical judgment
- Provide discussion and critique during class and/or on discussion boards
- Require students to support critiques with evidence from the literature

-
1. Student Self-Efficacy of Learning Using Illness Scripts. Lee, Jamie D.; Bagnardi, Margaret. *Nursing Education Perspectives*: 11/12 2016 - Volume 37 - Issue 6 - p 323-324. doi: 10.1097/01.NEP.0000000000000037
 2. Gede Arya Bagus Arisudhana. The effects of illness script method on clinical reasoning of undergraduate nursing students: A quasi-experimental study. *Jurnal Ners* Volume 17, Issue 1, April 2022, p. 83-88 <http://dx.doi.org/10.20473/jn.v17i1.32565>

Application of Elaboration: Self-Explaining*

**Self-explaining can function as both Generation and Elaboration*



What the students can do

They need to self-explain the thing they are learning to themselves:

- **Choose** the relevant core information
- **Restate** in their own words
- **Generate** inferences and **integrate** current learning with prior knowledge

What you need to do

- Incorporate this into your lesson plans
- Explain the purpose and correct examples of this action beforehand
- Specify the kinds of inferences you want them to make and guide their explanations

1. Dunlosky J, Rawson KA, Marsh EJ, Nathan MJ, Willingham DT. Improving Students' Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology. *Psychological Science in the Public Interest* [Internet]. 2013 [cited 2021 Nov 23];14(1):4–58. Available from: <https://www.jstor.org/stable/23484712>

Application of Reflection: Clinical Portfolio Assessment



What the students can do

- The **Situation**: What, when, who
- The **Emotion**: How it made them feel.
- The **result**: Why it happened the way it did.
- The **process**: Could anything have been improved at the time.
- Future **Planning**: What to do the next time it occurs.

What you need to do

- Build a **safe** and **supportive** environment for reflection to occur
- Develop a portfolio template that includes **strategic reflective prompts**
- Ensure parity in **definitions** and develop a **shared discourse**

-
1. Fernsten L, Fernsten J. Portfolio assessment and reflection: enhancing learning through effective practice. Reflective Practice [Internet]. 2005 Jan [cited 2022 Nov 4];6(2):303–9. Available from: <http://www.tandfonline.com/doi/abs/10.1080/14623940500106542>
 2. Koshy K, Limb C, Gundogan B, Whitehurst K, Jafree DJ. Reflective practice in health care and how to reflect effectively. IJS Oncology [Internet]. 2017 Jun 15 [cited 2022 Nov 4];2(6):20. Available from: <https://www.ijsoncology.com/article/10.1097/IJ9.0000000000000020/>

Application of Reflection: Structured Journaling



What the students can do

- Follow a guided framework to reflect on a clinical experience
- Explore personal beliefs and values objectively
- Practice metacognitive strategies to reflect on their own learning and performance

What you need to do

- Select a framework to guide reflection
- Develop **strategic reflective prompts**
- Prepare clinical stories that touch on difficult issues or personal values

1. Fernsten L, Fernsten J. Portfolio assessment and reflection: enhancing learning through effective practice. Reflective Practice [Internet]. 2005 Jan [cited 2022 Nov 4];6(2):303–9. Available from: <http://www.tandfonline.com/doi/abs/10.1080/14623940500106542>
2. Koshy K, Limb C, Gundogan B, Whitehurst K, Jafree DJ. Reflective practice in health care and how to reflect effectively. IJS Oncology [Internet]. 2017 Jun 15 [cited 2022 Nov 4];2(6):20. Available from: <https://www.ijsoncology.com/article/10.1097/IJ9.000000000000020/>
3. Reflection as an Educational Strategy in Nursing Professional Development. Robbin Miraglia, MSN, RN, Marilyn E. Asselin, PhD, RN-BC. Journal for Nurses in Professional Development & Volume 31, Number 2, 62Y72

Application of Reflection: Facilitated Group Reflection



What the students can do

- Reflect together on a clinical story or experience supplied by the instructor
- Reflect as a group after writing individual narratives about a clinical situation
- Discuss issues and concerns about clinical practice
- Explore the personal beliefs that guide clinical action

What you need to do

- Prepare clinical stories to prompt reflection
- Provide opportunities to discuss difficult issues of practice
- Designate a facilitator or serve as discussion facilitator to provide a safe and open discussion environment

1. Fernsten L, Fernsten J. Portfolio assessment and reflection: enhancing learning through effective practice. Reflective Practice [Internet]. 2005 Jan [cited 2022 Nov 4];6(2):303–9. Available from: <http://www.tandfonline.com/doi/abs/10.1080/14623940500106542>
2. Koshy K, Limb C, Gundogan B, Whitehurst K, Jafree DJ. Reflective practice in health care and how to reflect effectively. IJS Oncology [Internet]. 2017 Jun 15 [cited 2022 Nov 4];2(6):20. Available from: <https://www.ijsoncology.com/article/10.1097/IJ9.000000000000020/>
3. Reflection as an Educational Strategy in Nursing Professional Development. Robbin Miraglia, MSN, RN, Marilyn E. Asselin, PhD, RN-BC. Journal for Nurses in Professional Development & Volume 31, Number 2, 62Y72



Section 4

Conclusions and Closing

Conclusion



1. **Active Learning works;** even relatively simple techniques create better learning outcomes across different domains.
2. **Active Learning lends itself to the success of Outcome Based Education.** It's about what the learners take away, not about what we give them. With active learning, the gap between the two can be reduced.
3. **Slides are not meant to be your students' study resource.** They support your teaching and allow you to highlight your points. Our lectures need to reflect this.

Would You Like to Stay up to Date on Future Events?

Durable Learning Seminar

The Year in Review:

How to Turn Lessons Learned into Actionable Steps for Success in 2023

December 14, 2022,
09:00 PST | 12:00 EST | 18:00 CET

Nursing Educator Webinar – Save the Date!

Alignment and Assessment in the NGN Context

January 25, 2023,
9:00 PST | 12:00 EST | 18:00 CET





Announcement Time!

We are thrilled to be announcing the recipient of our gift card for this webinar.

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joining!

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