

Simulation-based Experiential Learning Faculty Toolkit



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Introduction

Are you a faculty member at Queen's interested in integrating simulation-based experiential learning¹ into your course? This **Simulation as Experiential Learning — Faculty Toolkit** consists of tools, templates, and resources that will help you design and implement simulation as an experiential learning activity in a high-impact and time-effective manner.

Experiential Learning and Simulation-based Learning

Experiential Learning (EL) is an interdisciplinary educational philosophy and practice that promotes academic learning outcomes, student career development, connections within/to workplace settings, and critical thinking. With intentionally designed, authentic learning experiences and integrated guided reflections, EL opportunities are created for students to develop a wide range of knowledge, skills and values while inspiring them to make meaningful choices about their career path.

Simulation-based learning is a form of experiential learning that provides learners with a real-world-like opportunity to develop and practice their knowledge and skills but in a simulated environment.

Experiential Learning Hub at Queen's

The Experiential Learning Hub (EL HUB), established in 2016, is a dedicated team committed to promoting and supporting experiential learning growth across the Queen's community. For this purpose, the EL Hub provides one-on-one consultation to Queen's faculty/staff, shares tools and best practices to support efficient planning and delivery of experiential learning initiatives and develops centralized materials for Queen's faculty to assist them in designing and implementing experiential learning opportunities for Queen's students. This toolkit focuses specifically on Simulation-based EL, but for a broader look at EL, the *Experiential Learning Toolkit* for faculty consists of resources, tools, and templates that will help users effectively design and implement experiential learning opportunities. You can download the complete Faculty Toolkit as a PDF or find specific resources in fillable word doc format [here](#).

This toolkit, **Simulation-based Experiential Learning — Faculty Toolkit**, is a complementary resource specific to designing and implementing simulation-based learning opportunities for Queen's students. It provides tools, templates, and resources to support you develop and run successful simulations as experiential learning.

¹ A variety of terms are used to refer to simulation-based learning, including but not limited to tabletop exercise, role-playing, scenario-based learning, and simulation. For this toolkit, we will use simulation and simulation-based learning.



Beyond the Toolkit: The EL Hub Consultation Process

If you are developing a new simulation-based EL activity or thinking about making changes to an existing simulation-based EL activity, in addition to using this toolkit, you can also work directly with staff at the EL Hub. Through the consultation process, we will:

- help you effectively use this toolkit and other resources to support you in designing and implementing your simulation-based learning activity;
- connect you with other instructors (as relevant) to facilitate sharing of knowledge across faculties to avoid redundancies in program development and administration; and
- make referrals to risk management experts on campus, if applicable.

We look forward to supporting you as you design and deliver future experiential learning opportunities. To request a consultation, please email us at el.hub@queensu.ca.

Simulation-based Learning: Definition, Purpose, and Benefits

Simulation-based learning is a form of experiential learning where learners are tasked to solve complex problems in controlled environments through replicated "real-life scenarios" (Lateef, 2010). Simulation-based experiential learning allows learners to absorb knowledge and practice skills in a realistic but simulated, safe environment.

Simulation-based learning can be used across disciplines and topics for multiple purposes, including 1) to generate awareness of implicit or hard-to-surface issues, 2) to improve skills by providing practice in a context, perhaps repetitively, and 3) to test differences across a variety of stakeholders (White et al., 2004). More specifically, simulation-based learning is used for emergency preparedness, complex decision making, negotiation and conflict resolution, technical training (e.g., aviation) (Lateef, 2010) and for teaching abstract concepts that may be difficult for learners to fully grasp (Shaw & Switky, 2018).

Simulation-based experiential learning has many advantages. It:

- provides participants with an opportunity for learners to absorb knowledge and practice skills in a realistic but simulated environment (Lateef, 2010);
- offers participants "real-world" and hands-on experience in a safe environment where learners feel comfortable practising without experiencing the fear of making mistakes (Lateef, 2010);
- promotes student interaction and collaboration — in exercises where students are expected to work in groups (Shaw and Switky, 2018);
- helps learners engage with the content and learn effectively, (Shaw and Switky, 2018);
- increases knowledge retention (Levin-Banchik L., 2018);
- helps learners improve non-technical workplace skills, such as effective communication, teamwork, collaboration, decision-making, and problem-solving (Lateef, 2010); and
- can be fun and exciting for learners (Shaw and Switky, 2018).

Simulation-based learning is not meant to replace traditional teaching methods. It is rather complementary to the conventional teaching methods as an effective way of learning through experience by immersing learners in replicated "real-life scenarios" with guided reflections (Shaw and Switky, 2018).

Designing Simulation-based Learning & Logistical Considerations

Topic

Before starting to design a simulation-based learning activity, it is helpful to consider whether or not your topic is appropriate for simulation-based learning by asking the following questions:

- Do I have a complicated, real-world situation that I want my students to experience in a simulated, realistic, but safe, risk-free environment?
- Do I want my students to engage in an interactive and authentic but controlled learning environment?

Topics where students need to work through challenges, collaborate, and act out roles, are suitable for simulated scenarios, such as developing negotiation skills between stakeholders, implementing a policy, dealing with a cybersecurity or terrorism threat, or a rare but realistic situation.

Defining the Purpose and Learning Outcomes

Like any learning activity, it is essential to identify its purpose and to set clear learning outcomes for the simulation-based learning activities. There can be multiple purposes to integrate a simulation in your course: 1) generating awareness; 2) surfacing implicit issues; 3) testing ability to detect and respond. After deciding the purpose of the simulated activity in your course, identify the simulated activity's learning outcomes. To identify learning outcomes, consider what you want your students to demonstrate or take away from the simulation. It is important to ensure the simulation's learning objectives are aligned with the overall learning objectives of the course in which the simulation will be integrated.

As an example, here are the learning outcomes developed for the Cybersecurity tabletop exercise, delivered by the School of Computing to students in the NSERC CREATE Cybersecurity Graduate Training Program. In this exercise, students acted as senior members of government tasked with preparing to brief the Prime Minister regarding a series of cyber emergencies.

On successful completion of the tabletop exercise, students will be able to:

- demonstrate familiarity with the political and social pressures that affect technical decisions about cyberspace;
- analyse the roles of government actors in making decisions about cyberspace;
- debate courses of action from a particular perspective;
- apply knowledge of cybersecurity to real-world situations;
- evaluate the process of decision making in a crisis setting.

The chart below includes examples of learning objectives/outcomes in different contexts.

Context	Objectives/Outcomes	Sample Source
Teaching acculturation	<ol style="list-style-type: none"> 1. To enhance students' understanding of the concept of acculturation and its cultural components; 2. To increase students' awareness of acculturation as a real-world phenomenon; 3. To generate sensitivity and empathy toward immigrant groups who experience some of the cultural challenges associated with acculturation. 	Zamboanga, B. L., Ham, L. S., Tomaso, C. C., Audley, S., & Pole, N. (2016). "Try Walking in Our Shoes": Teaching Acculturation and Related Cultural Adjustment Processes Through Role-Play, <i>Teaching of Psychology</i> , 43(3), 243-249.
Environmental decision making and conflict resolution techniques	<ol style="list-style-type: none"> 1. The objective of a facilitated discussion or negotiation is to arrive at a conflict resolution acceptable to all, or at the very least, to most of the interests represented. 	Robert, M. & Yaseen, R (2000) Using Role-Play Simulations to Teach Environmental Decision Making and Conflict Resolution Techniques, <i>Environmental Practice</i> , 2(2), 139-145.
Online roleplay simulations used to teach engineering students about sustainability principles	<ol style="list-style-type: none"> 1. To learn to see engineering projects from multiple perspectives; 2. To gain an improved understanding of the role of engineering in society; 3. To gain a better understanding of the complexity of engineering decision-making; 4. To develop an understanding of the need for, and the meaning of, sustainable development; 5. To prepare students for working in multidisciplinary and international environments; 6. To develop communication, group work, research, and critical thinking skills. 	Maier, H. R., Baron, J., & McLaughlan, R. G. (2007). Using online roleplay simulations for teaching sustainability principles to engineering students, <i>International Journal of Engineering Education</i> , 23: 1162-1171.
Using role playing simulations to teach negotiation skills to university students	<ol style="list-style-type: none"> 1. To learn how to choose the most effective conflict resolution approach to a dispute; 2. To learn how to identify common interests and those that may be "traded off;" 3. To learn how to determine your own interests and needs in a dispute; 4. To learn how to effectively communicate your own interests and needs to other parties; 5. To learn how to better understand the interests and needs of other parties. 	Andrew, J., & Meligrana, J. (2012). Evaluating the Use of Role Playing Simulations in Teaching Negotiation Skills to University Students, <i>Creative Education</i> , 3(6), 696-702

Teaching and learning empathy: An interactive, online diplomatic simulation of middle east conflict	1. Foster a sense of empathy in the participants.	Stover, W. J. (2005) Teaching and Learning Empathy: An Interactive, Online Diplomatic Simulation of Middle East Conflict, <i>Journal of Political Science Education</i> , 1:2, 207-219
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Final Output and Assessment

Final output and assessment for the simulation exercise should link back to the purpose and the learning outcomes determined. Consider how you will assess the simulation-based learning and whether the students will be required to submit an assignment to demonstrate that they have achieved the learning objectives. The following are some types of assignments that you could select from:

- Reflection paper
- Summary report
- Case write-ups
- Question responses
- Presentations of solutions
- Self-assessment (using Likert Scale or qualitative feedback)
- Peer-assessment (using Likert Scale or qualitative feedback)

Chart: Designing the Simulation-based Learning & Logistical Considerations

The chart below describes important components and logistical considerations for designing the Simulation-based Learning, including, but not limited to, the above-covered issues (topic appropriateness, purpose and learning outcomes, final output and assessment). You can use this chart to scope the feasibility and resources required to integrate a simulation-based learning activity into an existing course or to design a brand new course with a simulation-based learning activity. Please note that different components and considerations of the simulation-based learning design can be revisited and revised as the design advances.

Chart: Designing the Simulation-based Learning & Logistical Considerations

Question	Answer	Tips/Considerations
Topic & Course Description		<ul style="list-style-type: none"> • What is the course description? Is your topic appropriate for simulation-based learning? • How does the simulation component enhance classroom learning?
Purpose		<ul style="list-style-type: none"> • What is the purpose of the simulation-based activity? <p><i>There are multiple purposes for integrating a simulation-based activity in a course: to generate awareness, to surface implicit issues, to test ability, to detect and respond to improve skills by providing practise in a context, perhaps repetitively, to test differences across a variety of stakeholders; emergency preparedness, complex decision making, negotiation and conflict resolution, technical training, to teaching abstract concepts that may be more difficult to teach using traditional teaching methods</i></p>
Learning Outcomes		<ul style="list-style-type: none"> • What are the learning outcomes of the simulation-based activity? • How do they align with the broader learning outcomes of the course?
Type		<ul style="list-style-type: none"> • What type of simulated-based activity will you employ: role play, tabletop exercise, computer simulation and so forth?
Length and Timing		<ul style="list-style-type: none"> • In which term will you have the simulation? Are there any term-related considerations that should be taken into account? • Will you run the simulations at the beginning, in the middle, or closer to the end of your course? What topics should be covered before the simulation-based activities take place? • How long will the simulation take place? • Will you use any breaks?

		<p><i>A simulation could last for an hour at the minimum, but typically, simulations run for min 2-3 hours, including the pre-brief and de-brief.² It is also possible to have an extended timeline and have simulated scenarios last for weeks, intermittently. (Shaw and Switky, 2018)</i></p> <p><i>There are benefits and potential drawbacks to having students break in the middle of a simulation. It can be an opportunity for students to cool down. However, if they are overly stimulated or emotional, it might disrupt the flow of the simulation and your students' concentration.</i></p>
Accessibility		<ul style="list-style-type: none"> • How will you design this in the most accessible format? How will you ensure accommodations for students with disabilities are arranged ahead of time so all students can fully participate? • How will you support students who cannot participate on the day (e.g. illness)?
Physical Setup³		<ul style="list-style-type: none"> • Where will your simulation(s) occur? <ul style="list-style-type: none"> ○ In your classroom? ○ Does your classroom have enough space for students to work privately in small groups? • Would the simulation-based activity be better to run in small breakout rooms? • What are the room requirements for your students to be most productive and learn effectively during your simulation? • Have you set the place in a way that encourages collaboration and working together? • Do students need particular resources, e.g. whiteboards, easels, wikis?

² For more information on Simulations & Briefing, see “Briefings 101” part of this toolkit on pages 14-16

³ For information on online simulations see “Transitioning Simulations to Online Formats” part of this toolkit on pages 17-18.

		<p><i>This might be done through placing the chairs in a circle so that all participants are facing each other.</i></p> <ul style="list-style-type: none"> • Where will your facilitators and role-players be located? <p><i>You may need a separate room for the actors or role-players to come and go in between passing along information. (Shaw and Switky, 2018)</i></p>
Class size		<ul style="list-style-type: none"> • How many students can take this course? Is simulation appropriate given your class size? <p><i>If the class size is too small, you may struggle with facilitating discussion and not have enough people to fill the roles. If you have a class with more than 50 students, you may find that it is more challenging logistically, and each participant may not be able to participate meaningfully.</i></p>
Course Type		<ul style="list-style-type: none"> • Will the simulation-based exercise be part of a mandatory or elective course? If mandatory, is there a prerequisite course?
Students' backgrounds		<ul style="list-style-type: none"> • What background knowledge do the students need before the simulation-based activity? <ul style="list-style-type: none"> ○ Are the backgrounds similar or diverse? ○ Are students from the same learning community?
Training		<ul style="list-style-type: none"> • Will the students need training before the exercise? If yes, when should the training occur? <p><i>These trainings could be technical, academic, or related to participant well-being (i.e. self-care workshop)</i></p> <ul style="list-style-type: none"> • Who will provide these trainings? Can they be outsourced from

		different units at the university (i.e. EL Hub, Student Wellness Services)
Assessment & Feedback		<ul style="list-style-type: none"> • How do you want to assess the students? • Will they produce an output (i.e. reflection paper, summary report, case write-ups, question responses, presentations of solutions, self-assessment, eer-assessment)? • Will you record audio or video? Will it be used for assessment, reflection, or observation? • Will there be an observer in the room with each group? Will this person contribute to assessment? • Do you plan to give them numerical grades and/or qualitative feedback? <p><i>Think about the final output at the beginning of the design process. Link your assessment and feedback strategy back to your learning objectives.</i></p>
Pre- and post-steps		<ul style="list-style-type: none"> • How much will you tell students about what to expect of the scenario ahead of time? • How much will you tell students about the process ahead of time? • What will happen afterwards?
Reflections		<ul style="list-style-type: none"> • How reflective strategies will you use? What questions will you ask?

		<p>To learn more about the role of reflection in EL Courses and sample reflection questions, check the EL Faculty Toolkit, "Designing Reflection: Intro & Questions" part (pp. 35-38)</p> <p>Consider hosting a debrief meeting as an opportunity to reflect on the exercise.</p>
Other Staffing Resources		<ul style="list-style-type: none"> • Do you need others to play roles? • How will they be trained? • Do you have backups in case they are unable to participate on the day?
Planning Committee		<ul style="list-style-type: none"> • Will you need a planning committee for the simulation design/execution? <p><i>This may not be applicable if you are designing a smaller-scale simulation activity. If applicable, make sure to include experts in the relevant content area as members of the committee. If you are unable to have content experts in the committee, you might consider interviewing them about your simulation and/or have them review the proposed simulation outline for feedback. Collective brainstorming with the planning committee is also efficient, but it might be challenging to organize a brainstorming meeting</i></p> <p><i>The EL HUB can help.</i></p>

Develop the Simulation Storyline

- Describe the scenario.
- Identify critical events:
 - Outline the information that the facilitator will provide at different points during the simulation.
- Make sure the critical events and overall storyline support the determined learning objectives of the course and the simulated-based activity.
- Consider:
 - Does your storyline flow?
 - Is this simulation representative of a realistic event that could happen?
 - Will this simulation provide students with an authentic learning opportunity

- Is the simulation designed to ensure participation of all learners?
- Have other stakeholders/colleagues (or your committee) review the storyline to ensure that it is realistic and supports the learning objectives of the course and the activity.
- Prepare any required materials such as:
 - Descriptions of the conflict and/or context;
 - Descriptions of character roles for the students and/or actors;
 - Prepare supplemental materials, if needed —e.g., maps, tables, background readings;
 - Generate a list of anticipated questions from students and seek specific content expertise to craft answers;
 - Consider developing summary sheets to help provide students, actors, and the facilitator with quick summaries of the necessary details of the simulation as relevant to other roles.

Pilot & Refine the Simulation

It can be very useful to test or pilot the simulation-based learning activity, ideally with a group of students who resemble your intended students, using the storyline created. This process is useful to identify potential issues in advance and make necessary modifications and refine the simulation-based activity.

Based upon your observations of the test and documented issues, refine the simulation to address the problems that arose. If you need to make substantial changes, consider having other stakeholders/colleagues, content experts, or your planning committee review the changes.

Simulation as Experiential Learning

For simulations to be Experiential Learning, the simulation-based learning activity must be planned within an experiential learning framework, with guided and structured **reflections** and **pre-brief** and **debrief** meetings and with a workplace (or simulated workplace) connection.

Kolb's Experiential Learning Cycle

Experiential Learning (EL) is an interdisciplinary, educational philosophy and practice that promotes academic learning, student career development, and critical thinking with intentionally designed learning experiences and integrated guided reflections. The most commonly used framework for guiding the design of experiential learning activities is Kolb's Experiential Learning Cycle. Kolb's theory understands learning as a holistic process where one continuously creates and implements ideas for improvement. According to Kolb, effective learning can only occur when an individual completes a cycle of the four stages: concrete experience, reflective observation, abstract conceptualization and active experimentation (see Figure 1)

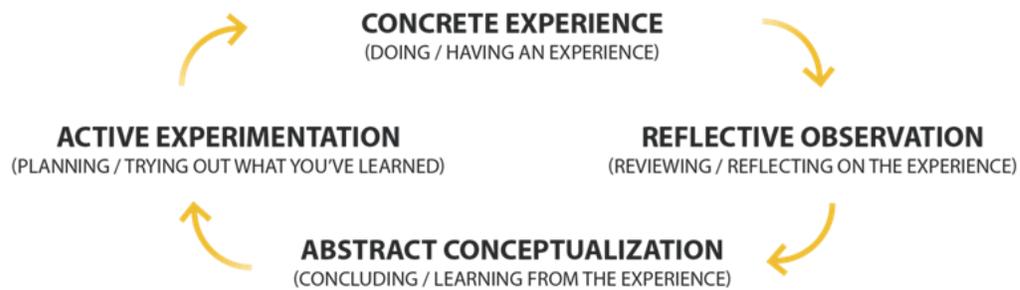


Figure 1: Kolb's Experiential Learning Cycle, Kolb and Fry (1984)

A simulation-based learning activity should be designed to ensure that students complete all four stages of Kolb's learning cycle. These four stages can be applied to simulation-based experiential learning as follows :

- **Stage 1** is when students are actively doing the simulation exercise.
- **Stage 2** is when students are encouraged to reflect on their experiences with the simulation exercise.
- **Stage 3** is where the students will synthesize their learning from the simulation exercise and develop a theory, framework, hypothesis, or model that can help them to explain how the simulation exercise was conceptualized.
- **Stage 4** is where students identify ways in which they could test the theory, framework, hypothesis, or model that they identified previously in Stage 3.

Note that in some cases, it may be more appropriate to start with Kolb's Experiential Learning Cycle at Stage 3 — with the development or identification of a theory, framework, hypothesis, or model and determine ways to test it— and, proceeding through the other stages sequentially (Botelho, Marietto, Ferreira, & Pimentel, 2016). Also, within a simulation exercise, students may cycle through the stages more than once.

Briefings 101

Conducting a pre-brief and de-brief is foundational for any simulation-based experiential learning; they help maximize students' learning. The pre-brief prepares learners for the experience and the debrief helps them reflect on the experience. This section of the toolkit provides you with tips and suggestions for planning and facilitating the pre-brief and de-brief.

Pre-brief

The pre-brief is essential to prepare the learners for the simulation-based learning experience and help them to make the most of the exercise. The pre-brief meeting should present a quick overview



of the simulated-learning experience. It should cover the key components: the goals and objectives of the simulation-based exercise, logistical considerations about the activity, introduction of all participants (students, facilitators, or actors), and a discussion on respect among participants (Hughes and Hughes, 2020). Below there are several primary considerations and tips for planning and running effective pre-briefs.

Timing

The timing of the pre-brief might depend on the level of the learners. The pre-brief can occur 1-2 weeks before the simulated learning experience or immediately before the learning experience, depending on the learners' previous experience with simulations. Suppose learners are new to simulations and have little to no experience with any simulation. In that case, they might need additional time to process and understand the learning context, in which case 1 or 2 weeks advance pre-briefs might be useful. Similarly, suppose learners will be portraying roles as part of the simulated-learning experience. In that case, they will need time to explore their roles and prepare, so a pre-brief 1 or 2 weeks before the simulation would be more appropriate. However, if learners have had previous experiences with simulations, you could have the pre-brief immediately before the simulation. It may be appropriate to have an element of surprise in the simulation, perhaps to reproduce the real world environment accurately. This should be used with caution to avoid adding too much additional stress to the scenario.

Objectives

It is important to provide an overview of the learning objectives, (both academic/technical and workplace-related ones) and clarify any questions that learners have about the simulated exercise. It is also essential to remind learners whether or not they are being assessed for this exercise, and if they will be assessed to discuss the assessment method and procedures briefly.

Psychological Safety & Comfort

One reason why simulated learning experiences are useful is because they are designed to substitute for putting students in actual high-stress situations. However, the simulations, given the topics they may cover, can still lead to some discomfort for learners. To minimize and/or manage such discomfort, it is essential to set a safe learning environment where every learner feels comfortable participating. For this purpose,

- acknowledge that the simulated-learning experience might be stressful and that it is okay for learners to make mistakes and experience a variety of emotions during the simulation;
- discuss the confidentiality of the exercise and clarify whether things can be discussed outside of the simulated-learning experience. You may want to suggest that if learners discuss anything outside of the simulated-learning experience, it should be limited to the lessons learned rather than the performances of specific people;

- Make sure to give enough time for your learners and any other participants to ask any questions that they may have regarding the simulation and try to not leave any questions unanswered as this could impact the level of comfort that individuals feel.

Role of Participants and Facilitator

Before starting the simulation, it is important to ensure all learners are clear on their roles. Thus, in the pre-brief, make sure to cover the roles of the learners and the facilitator in the simulated-learning experience; provide clear direction about how active you expect participants to be throughout the exercise; and provide learners with sample questions that can be used to facilitate reflective thinking during the simulated-learning experience.

Orientation to the Learning Environment

Provide an overview of the learning environment. This could include any necessary materials, required technology, overview of the setting, and description of available resources.

Debrief

The de-brief provides a platform for learners to review, reflect on the experience and deepen both academic/technical learning and professional skills development, and rectify any tensions that students may have experienced. It corresponds to Stage 2: Reflective cycle in Kolb's Experiential Learning Cycle and provides a base for Stages 3 and 4. Below are primary considerations and tips for planning and running effective de-briefs.

The timing

A de-brief might happen immediately after the end of the simulation, but there are advantages to postponing it to the following day to allow for greater reflection.

Facilitator of the de-brief

You can lead the de-brief or have students lead their own de-briefs in groups. It is important to remember that some learners may have experienced intense feelings that need to be addressed and discussed further. The learners might also complete self-debriefing or write a self-reflection to summarize their experience and thoughts before the larger group de-briefing.

Content

The de-brief should include a quick summary of the simulation and the learning objectives. Students' questions should be addressed before completing the de-brief session. The primary objective of the de-brief is to give students the opportunity to reflect on their academic learning and professional development based on the simulation-based exercise. It is helpful to use a structured approach to guide de-brief sessions to make sure students have the opportunity to reflect in a scaffolded way.

The Experiential Learning Hub has received positive feedback from instructors using the DEAL⁴ model to facilitate critical reflection.

DEAL Model for Critical Reflection: Questions & Rubric

The DEAL Model for Critical Reflection framework describes reflection as a three-step process: Description, Examination, and Articulation of Learning.⁵

Description

Description of learning experiences in an objective and comprehensive manner.

Guiding Questions:

- What took place?
- When and where did the experience in question take place?
- Who was and was not present?
- What did you and other do/not do?
- What did you see, hear, etc.?

Examination

Examination of learning opportunities in light of previously identified goals or expected outcomes of learning.

Guiding Questions:

- In what ways did you succeed or do well?
- In what ways were you challenged?
- How did this experience make you feel?
- How were your perspective/thoughts changed in light of your experience?

Articulation of Learning

Acknowledges the learning experience that occurred and establishes goals for future action in the learning process.

Guiding Questions:

- What did you learn?
- How did you learn it?
- Why does it matter?
- What will I do in light of it?

Below is a list of other models that can also be used to guide the debriefing process::

⁴ The DEAL Model was developed by Dr. Sarah L. Ash of North Carolina State University and Dr. Patti H. Clayton of PHC Ventures/Indiana University-Purdue University Indianapolis. Their work on reflective practice in the context of applied and experiential learning has been widely used across North American post-secondary institutions as a guiding framework for critical reflection.

⁵ You can access an extended version of the DEAL Model in the EL Faculty Toolkit [here](#) on pages 31-34.

- PEARLS Healthcare Debriefing Tool: <https://debrief2learn.org/pearls-debriefing-tool/>
- TALK Framework: <https://www.talkdebrief.org/talkframeworkbackground>
- DropIN:
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiNqoGRnN3qAhVII3IEHUfPCNI4MhAWMBB6BAglEAE&url=https%3A%2F%2Fdropin.org.au%2Fdownload%2Fattachments%2F116721283%2FDebriefing%2520Framework%2520Handout%2520SARC.pdf%3Fapi%3Dv2&usg=AOvVaw3Lw2HqKHMwqFF0B5GPsLv8>
- Critical Incident De-briefing: https://www.tandfonline.com/doi/abs/10.1300/J079v30n02_02

Student Feedback & Evaluation

The primary objective of the de-brief is to give students the opportunity to reflect on the simulation-based exercise. In addition, the de-briefs could also be used to get student feedback and recommendations for future iterations of the exercise. For this purpose, you can also ask students:

- What do they think went well in the exercise?
- What do they think could be done differently next time?

You can also consider having an anonymous online survey for this purpose.

Self-evaluation of the simulation exercise

As part of the de-brief, you can also evaluate the effectiveness of your simulation and use the guiding questions to inform your evaluation and recommendations for future iterations:

- What went well?
- What did not go well?
- Would I do anything differently next time? If so, why?
- How was the pace of the simulation?
- How did my students interact during the simulation?
- Did my students meet the learning objectives?
- Were my actors and facilitator(s) appropriately trained?

Facilitator Guide

Facilitators play a critical role in simulation-based learning. They control the pace of information delivery, manage learner engagement and participation, and run or participate in the briefings (including the pre-brief and de-brief). The effectiveness of the facilitator impacts the level of learning and general experiences of all involved learners. Provide information to learners and introduce the simulation exercise to the learners. The following are the primary roles of the facilitator:

- Manage the whole-group simulation and affiliated small-group exercises (for example, learners may be divided into teams or groups);

- Control the pace of the whole-group simulation and affiliated small-group exercises; Run discussions and provide direction when needed; Guide learners towards meeting all desired learning outcomes.

The level of facilitator involvement can vary for each simulated-based learning experience depending upon the scenario. However, the simulation should be as student-led as possible to boost students' learning; hence, it is crucial to ensure the facilitators do not dominate the exercise.

Tips & Recommendations for Facilitators:

- Acknowledge stress and discomfort: the facilitator should acknowledge that the simulated-learning experience may be a stressful and uncomfortable process at times and learners might experience a variety of emotions during the exercise; and can remind students that making mistakes is natural and a part of the learning process.
- Ensure full participation: Some participants may dominate the discussion. It is the facilitator's responsibility to make sure everyone participates in the exercise and all voices are heard regularly.
- Integrate feedback: The facilitator should encourage learners by providing formative feedback at any point during the simulation to help guide them down a particular path. They can also use feedback to engage learners who are less involved.
- Guide, don't direct: The facilitator provides learners with direction guided by the learning outcomes, not answers. They should intervene only when learners are lost or become unproductive, using guiding questions to keep the discussion on-task and moving along.
- Model desired behaviours: The facilitator should be a model for the preferred communication style and behaviour from the learners by having eye contact, participating in active listening, respecting the participants, and collaborating with participants.
- Positive tone: The facilitator should use a positive tone, especially when providing feedback.
- Manage conflict: The facilitator should be ready to manage conflict and feelings of frustration among the learners, which might impact the safe space created.
- Be constructive, not critical: The facilitator should be mindful of not being critical or judgemental of any options or actions discussed by the learners. They should ask probing questions in a neutral tone to redirect the learner's focus.
- Pace: The facilitator should pay attention to the exercise's pace and avoid moving through the simulation too quickly or too slowly. Allow silence when appropriate.
- Consider all options: The facilitator should encourage learners to consider all possible options and outcomes (both positive and negative) before deciding on a plan of action.

Transitioning Simulation to Online Formats

Simulated learning experiences can be modified for delivery through online formats. If you choose to deliver the simulation online, check the tips and suggestions below:

Before designing a simulation that will take place online:

- Is the simulation storyline suitable for online facilitation? Does it need any adaptation?
- Which software will you use?
- Do any of your learners have barriers to remote learning (i.e. poor internet access that may impact their cameras or audio)?
- Will there be any asynchronous components that learners can be given and be responsible for before the simulation exercise take place?
- Where do you want the learners to log on?
- How will you engage the students? Will you encourage them to have their cameras on?
- Do you have technical support available before and during the simulated-learning experience?
- Can you email materials and slides in advance of the simulation when possible?

During the online simulation-based exercise:

- It is important to help students feel comfortable participating in the activity. You can encourage students to use the raise-hand function or the chatbox or to unmute themselves to indicate that they have something to share.
- Make sure that you give students adequate wait time to gather their thoughts and contribute. This is important in online exercises, mainly because there may be 'lag' or a delay in communication.
- Consider using a virtual whiteboard that could be used to communicate your thinking.
- Consider using breakout rooms when you need to talk with the facilitators, actors, or coordinators.

Additional Considerations for Online Briefings

All tips and recommendations shared in 'Briefings 101' also apply to pre-brief and de-brief for simulated online exercises. However, there are some additional briefing considerations for online simulations:

Additional considerations for online pre-briefing

- Be mindful of any technical requirements and communicate those to all participants well in the pre-brief;
- Discuss additional challenges and address concerns that might arise due to having the exercise online;

- Consider running a synchronous tech test with all participants before beginning the simulated-learning experience.

Additional considerations for online de-briefing

- Students may find it harder to develop a connection online and may be hesitant to share their experiences verbally. Consider having the students self-debrief immediately after the simulation using some prompting.

The Costs and Challenges of Simulation-Based Learning

Simulation-based experiential learning activities are unique and effective learning opportunities. However, designing and running simulation-based learning can be resource-intensive. For example, the planning phase is most effective when it involves multiple people and includes an opportunity to pilot the simulated event, which may take additional time of the instructors. If you decide to incorporate standardized actors (people who participate, but as facilitators, not as learners), you may need to compensate the actors for their time. You may also need to rent a place and equipment for some simulation-based exercises. Another possible challenge is replicating a real-life situation and maintaining student engagement. The instructors may need to find creative ways to maintain student engagement.

Simulation-based learning is a time-intensive activity. It will require additional time to design the course, develop the story line, run the activity and facilitate productive pre-brief and debrief meetings.

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