









## 2.4. Data analysis

The quantitative data was analyzed using descriptive statistics. The analysis included each participant's total score on the organization and delivery of the workshop. Quantitative and qualitative results were merged during interpretation. Themes identified during quantitative data analysis were compared with qualitative results to explain and describe findings about the workshop and knowledge obtained. The qualitative data gathered over the course of the SP methodology workshop was beneficial in

articulating the experience of participants with this pedagogical framework. The feedback received was overwhelmingly positive with 100% of participants rating the workshop program very good or excellent. Additionally, 75% of participants indicated the medium of groups as excellent, and 62.5% felt the workshop was excellent in terms of advancing expertise in SP methodology (See Table 1). Fifty per cent of participants rated the workshop as good in helping develop confidence to implement SP methodology in their teaching.

Table 1. Effectiveness of workshop organization and delivery

Rating Categories	Percentage of Respondents (%)					
	Poor	Fair	Good	Very Good	Excellent	No Response
How would I rate the following						
1. Workshop program				50	50	
2. Material provided				37.5	62.5	
3. Balance between presentations, discussions, and activities				37.5	62.5	
4. Time distribution of the workshop			12.5	37.5	50	
5. Organization of the workshop				50	50	
6. Group work was an effective medium during the workshop			12.5	12.5	75	
7. The workshop advanced my expertise in using SP methodology				25	50	25
8. The workshop advanced my expertise in planning and dealing with SP methodology			12.5	12.5	62.5	12.5
9. The workshop increased my confidence in implementing SP methodology in my teaching				37.5	37.5	25
10. The feedback received over the course of the workshop was valuable				12.5	87.5	
11. The workshop provided opportunities to engage with student colleagues from other disciplines				25	75	
12. Has the workshop provided me with the necessary tools to develop and implement scenarios for my course				50	37.5	12.5

The data from the 2017 workshop indicated the benefits of this instruction and interactive learning environment in building capacity to apply SP methodology in various settings. The quantitative data was analyzed using Statistical Package for the Social Sciences (SPSS) software. There were significant, positive correlations between the distribution of time of

the workshop and the effectiveness of group work as a medium. Also, positive correlations were found between the participants' rating of the workshop's effectiveness in teaching how to create simulations that meet learning objectives and the indicators of increased confidence and expertise in planning, creating, and facilitating SP methodology (see Tables 2a and 2b).

Table 2a. Correlations from SPSS Analysis for SP methodology workshop 2017

		Question number					
		Q1	Q2	Q3	Q4	Q5	Q6
Q1. Workshop Program	PC	1	.258	-.258	.539	1.000**	.539
	S2T		.537	.537	.168	.000	.168
Q2. Material Provided	PC	.258	1	.467	.788*	.258	.696
	S2T	.537		.244	.020	.537	.055
Q3. Balance between presentations, discussions and activities	PC	-.258	.467	1	.417	-.258	.325
	S2T	.537	.244		.304	.537	.433
Q4. Time distribution of the workshop	PC	.539	.788*	.417	1	.539	.806*
	S2T	.168	.020	.304		.168	.016
Q5. Organization of workshop	PC	1.000**	.258	-.258	.539	1	.539
	S2T	.000	.537	.537	.168		.168
Q6. Group/dyad work was an effective medium during the workshop	PC	.539	.696	.325	.806*	.539	1
	S2T	.168	.055	.433	.016	.168	
Q7. The workshop taught me to create roles for simulation that meet learning objectives for my students	PC	.000	.188	.188	-.044	.000	-.218
	S2T	1.000	.656	.656	.918	1.000	.604
Q8. The workshop has advanced my expertise in planning, creating and facilitating SPM	PC	.452	.000	.000	.000	.452	.108
	S2T	.261	1.000	1.000	1.000	.261	.799
Q9. I feel confident implementing SPM in my teaching	PC	.188	.275	.146	.079	.188	-.169
	S2T	.656	.510	.731	.853	.656	.690
Q10. Feedback received over the course was valuable	PC	.378	.488	.488	.747*	.378	.882**
	S2T	.356	.220	.220	.033	.356	.004
Q11. Provided opportunities to engage with student colleagues from other disciplines	PC	.577	.149	.149	.726*	.577	.518
	S2T	.134	.725	.725	.041	.134	.188
Q12. Provided me with the necessary tools to develop and implement scenarios for my course	PC	.407	-.063	-.231	-.190	.407	-.044
	S2T	.317	.882	.582	.652	.317	.918

Note: PC = Pearson correlation. S2T = sig. (2-tailed). N= 8 in all instances. \* Correlation is significant at the 0.05 level (2-tailed). \*\* Correlation is significant at the 0.01 level (2-tailed).

Qualitative data was collated. In response to the question, “What would I tell a friend or colleague about this workshop?” participant responses included

“Phenomenal—excellent, practical, thoughtful design and content was evident from opening to close.”

“It helps to clarify things in and out of education environment.”

“I would tell them I found it effective.”

“Awesome! Great to learn about SPM and use it as one of the alternative tools in pedagogy.”

“It is informative and a great way to see the implementation/benefits of simulation in cross-disciplinary settings/environments. It was also great networking with faculty.”

“Very informative and useful educational tool.”

Participants also enumerated various applications for which this pedagogical tool could be utilized:

“In-unit staff development days.”

“To underscore the importance of using ‘best practice’ tools/procedures in a health related physical fitness domain.”

Table 2b. Correlations from SPSS Analysis for SP methodology workshop 2017

		Question number					
		Q7	Q8	Q9	Q10	Q11	Q12
Q1. Workshop Program	PC	.000	.452	.188	.378	.577	.407
	S2T	1.000	.261	.656	.356	.134	.317
Q2. Material Provided	PC	.188	.000	.275	.488	.149	-.063
	S2T	.656	1.000	.510	.220	.725	.882
Q3. Balance between presentations, discussions and activities	PC	.188	.000	.146	.488	.149	-.231
	S2T	.656	1.000	.731	.220	.725	.582
Q4. Time distribution of the workshop	PC	-.044	.000	.079	.747*	.726*	-.190
	S2T	.918	1.000	.853	.033	.041	.652
Q5. Organization of workshop	PC	.000	.452	.188	.378	.577	.407
	S2T	1.000	.261	.656	.356	.134	.317
Q6. Group/dyad work was an effective medium during the workshop	PC	-.218	.108	-.169	.882**	.518	-.044
	S2T	.604	.799	.690	.004	.188	.918
Q7. The workshop taught me to create roles for simulation that meet learning objectives for my students	PC	1	.731*	.957**	-.092	-.280	.691
	S2T		.039	.000	.829	.502	.058
Q8. The workshop has advanced my expertise in planning, creating and facilitating SPM	PC	.731*	1	.717*	.228	.000	.932**
	S2T	.039		.045	.587	1.000	.001
Q9. I feel confident implementing SPM in my teaching	PC	.957**	.717*	1	-.118	-.181	.708*
	S2T	.000	.045		.780	.668	.049
Q10. Feedback received over the course was valuable	PC	-.092	.228	-.118	1	.655	-.031
	S2T	.829	.587	.780		.078	.942
Q11. Provided opportunities to engage with student colleagues from other disciplines	PC	-.280	.000	-.181	.655	1	-.235
	S2T	.502	1.000	.668	.078		.575
Q12. Provided me with the necessary tools to develop and implement scenarios for my course	PC	.691	.932**	.708*	-.031	-.235	1
	S2T	.058	.001	.049	.942	.575	

Note: PC = Pearson correlation. S2T = sig. (2-tailed). N= 8 in all instances.

\*. Correlation is significant at the 0.05 level (2-tailed). \*\* Correlation is significant at the 0.01 level (2-tailed);

“To use it as part of the workshops offered to international teaching assistants. In other words, to use it in educational/professional workshops to teaching assistants.”

These participants’ statements contribute depth and insight to the statistically significant data points analyzed from the quantitative surveys.

### 3. Application of SP methodology within a teaching–learning context

SP methodology can enhance student engagement. Our findings indicate that this workshop protocol supports SP methodology by reinforcing its application to learning objectives, developing a detailed scenario, and effective use debriefing.

### 3.1. Grounding simulation in learning objectives

Participants expressed increased awareness of the importance of grounding simulation in clear, purposeful learning objectives. One participant noted, “You must be just as clear on what [students] are needing to learn and this frames how you teach them.” Another commented, “It is imperative to understand that this notion of framing simulation based on learning objectives provides a clearer picture of how learning happens or comes together from the learner’s lens.” Simulation encounters that are closely developed and aligned with specific learning objectives were viewed as increasing the clarity and efficacy of the experience.

### 3.2. Detailed scenario development

In line with close adherence to learning objectives, participants expressed a heightened awareness of the depth of detail involved in scenario development. The provided template was viewed as a helpful resource to guide scenario development. The opportunity to participate in simulation as learners and facilitators served to both inform scenario development and elicit feedback from various perspectives.

### 3.3. Debriefing

The structure provided for debriefing differed from traditional feedback and was new for some participants. The response to this approach was largely positive; debriefing, with its focus on observed behaviours rather than on the individual, was viewed as valuable to the simulation experience. The structure was described by participants as “very effective,” “clean and simple,” and “extremely useful.” Participants in the first workshop also noted that a demonstration would have been beneficial to introduce facilitation of the debriefing process prior to engaging in the activity; these demonstrations were embedded within the second workshop.

## 4. Discussion

The workshop offered insight into experiential-education innovation. Although results of the study indicate that knowledge improves after participation in educational workshops, there is limited evidence regarding a similar improvement in skills. The workshop resulted in an increase in participants’ knowledge about the application of SP methodology in the teaching-learning context, particularly in the classroom. Given the lack of studies conducted in

comparable populations, further research is needed to determine how the application of educational workshops can enhance and sustain teaching skills. Further research is also needed to explore the use of this version of the workshop with faculty teaching other disciplines and among different learner cohorts.

Feedback from participants expressed an interest in maintaining or increasing the level of interactivity and experiential activities. Participants’ interest in and enthusiasm for the workshop are apparent in the following qualitative comments:

“I would like to see how we could implement this at some ‘less’ practical programs, in LAPs [liberal arts programs] for example . . . and how to bridge it with hands-on programs in the humanities”

“Phenomenal, excellent, practical, thoughtful design captured my attention from opening to close”

“Difference between SPM and role play was very clear . . . planning, organizing, and implementing a scenario using the template well designed”

One SP observed,

“It was a great opportunity to work with faculty and learn from other disciplines”

Additionally, participants offered suggestions for future workshops. Some suggested that workshops should offer videos to complement the process, while others recommended offering it to TAs and graduate students and using it within other experiential education and professional workshops.

The next step in this project will be to embed the SP methodology in the classroom and conduct focus-group interviews with three groups of participants: faculty, simulators, and learners. This next step is underway and analysis of the data gathered from focus groups is pending.

The SP methodology workshop in 2017 maintained the positive components of the pilot workshop, but refinements were implemented in response to reflection and feedback received from the pilot. This workshop saw an increase in participant enrolment and diversification of faculty and staff in attendance. New simulated persons expressed interest in the project and were trained along with previously trained SPs who elected to continue with the program.

### 4.1. Future considerations

As budget and funding constraints pervade the healthcare and education sectors, it is important to explore the cost effectiveness of proposed investments. Historically, the costs associated with simulation have been high, which challenged the acknowledgement of its long-term benefits [16]; it should be noted, however, that these costs can vary from high to low, “depending on



methods, technology, and fidelity of the simulation” [17] (p. 2). Cost effectiveness, therefore, is crucial if this educational technique is to be seen as a viable option for institutions [18].

There is a noticeable gap in the literature regarding cost effectiveness or evaluations of the investment return of simulation education [17] [18]. Individual organizations often attempt to decrease costs of simulation through anecdotal approaches or by brainstorming less expensive means to meet their particular education needs [19]. Peers or colleagues, for example, can be used as simulators, which can decrease costs associated with hiring professional actors [17]. There is a push for simulation education to embed economic evaluations into the processes surrounding simulation projects [17]. One form of economic evaluation is a cost-effectiveness analysis that provides data “to assist decision-makers on how to allocate scarce resources effectively” [18] (p. 221). These components are scarce in simulation education as “economic evaluations are largely based in a quantitative research paradigm, whereas medical education and educational research is . . . predominantly focused on qualitative research methods” [17] (p. 4). Thus, there is a large gap in the body of evidence to demonstrate the efficiency of simulated-learning approaches [17].

## 5. Conclusion

We hypothesize that educating educators to work and teach with SP methodology will provide opportunities for fostering student success, thus creating further opportunities for curriculum synergies. One such opportunity has been to use the experience and learning from this initiative to create a practicum course for theatre students, which will serve to provide simulators to educators across the university who have taken the simulation workshop. Embedding this methodology reinforces the importance of engaging students through scenarios that simulate the realities and complexities of practice—realities that often do not match the textbook portrayal—and, thus, contribute to students’ success in their transition to the workplace milieu.

In general, the workshop was successful and laid a foundation for future training programs of this style. This foundation formed an effective outline for subsequent iterations of this workshop, most recently in June 2017, with plans for future workshops in discussion. Identified problems will allow us to further refine the workshop to meet the needs of educators looking to embed SP methodology in their curricula. Further, knowledge gained from the workshop will allow us to design a blueprint for a cross-disciplinary

program to provide educators with training in simulation methodology and undergraduate students with an opportunity to practice and develop competencies in their respective fields. Future planning is underway to further develop the complexity and scope of this ambitious project.

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## 7. References

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