

Evaluation of student perception on medical teaching based on simulate experience workshops (SEW)

Abstract

An observational, prospective and real-time work was carried out, where 866 medical students were evaluated, who two weeks earlier had finished taking a simulated experience workshop related to medical procedures and circumstances. Your response was assessed based on your experience, ability and sense of security, as well as your desire to continue in the advanced simulation scheme.

Conclusions: The simulation in the teaching of basic and advanced procedures in medicine is a real option, accepted by students, who adapt and manage to obtain a response capacity that can be transferred to real activities, minimizing errors.

Keywords: Simulation, simulated teaching, clinical errors, medical study

Volume 15 Issue 6 - 2024

Dr. Jesús Tatá Amoldoni,¹ Dr. Nassim Tatá Canache²

¹General Surgeon/Oncologist Surgeon. Coordinator of the Chair of Human Anatomy and General Surgery, School of Medicine, San Judas Tadeo Federated University, Costa Rica

²General Practitioner, Professor of Human Anatomy, School of Medicine, San Judas Tadeo Federated University, Costa Rica

Correspondence: Dr. Jesús Tatá Amoldoni, General Surgeon/Oncologist Surgeon. Coordinator of the Chair of Human Anatomy and General Surgery, School of Medicine, San Judas Tadeo Federated University, San Jose, Costa Rica, Email ucotata@gmail.com

Received: December 31, 2024 | **Published:** December 31, 2024

Introduction

The development of Simulated Experience Workshop (SWE) is based on the teaching methods of the US Air Force, where the main objective is to minimize errors with the method of continuous practice on a controlled model with different degrees of complexity, and to allow at the end of the training that the students are able to solve or propose solutions to problems related to the specific activity they are performing.¹ In Medicine, to develop this skill, the student does not necessarily have to possess a series of deep knowledge of the subject in question, since the purpose is to be able to master the regulated activities that are required of them, managing to establish a management standard that allows greater efficiency with less effort and minimal use of time. These procedures involve presenting simulated problems as basic as determining the need and the moment to wash hands, going through the method chosen to do so until deciding and carrying out an individual or team procedure to rescue an airway in adverse conditions.¹ It is well known that when confidence is developed in the student and he is allowed to be empowered with useful instruments to solve problems, under an environment where he feels he can dominate, control and produce a solution to a problem, he will be able to carry out said solution or, failing that, channel it.

Objective of the study

- To evaluate the perception that medical students have when the teaching of certain medical subjects is transferred to the Simulated Experience Workshop (SEW) system.
- To obtain first-line information to establish concrete proposals on teaching models of different subjects those are subject to improvements in the teaching/learning process.
- They achieve a cohort of students capable of performing basic maneuvers within the procedure and complex decisions in a real or simulated situation.

Population and sample

All students enrolled in the subjects that were in some way involved in simulated practices (SEW) as a complement to their activities planned in the study plan, in a period of three sequential semesters, were taken for the study. These added up to a sample of 866 students.

Methodology and development

This study was conducted prospectively, observationally, on a group of students who had just finished some activities, which were designed to train them in different specific activities, which in some way need a guide to develop skill, decision-making capacity and mastery of a particular technique.^{2,3} All the activities carried out were previously planned by a group of experts in each area, thus minimizing the possibility of decision making on «supposed logical analysis», prioritizing the results of the experience and the concepts based on experiences and evidence of activities carried out with protocols developed under the guidelines of international guides.^{4,5} The observational study of the results was possible to collect due to collection instruments such as simple surveys applied directly to the participants, one week after having finished the activity, in order to reduce the possible responses induced by feelings of joy or frustration that could be present in the first 24 hours after the climax of the activities carried out.

Results and analysis

a) Table 1

Final result

Evaluation: According to the following scale; In general terms, how satisfactory was the Simulated Experience Workshop (SEW) that you took?

Sample: 866 Students

Degree of satisfaction/ percentage	Little satisfaction	Moderate satisfaction	Satisfactory	Very satisfactory	Excellent satisfaction
Percentage/Absolute	0,0	0,0	7,3 (64)	13 (113)	79 (689)

Source: Direct survey conducted 7 days after the last SEW was completed (May 2023. Documents in Reserve).

It is clear that 100% of the participants in the study considered it to be Satisfactory or higher.

b) Table 2

Final result

Evaluation: Of the following topics covered in the Course, which was the most complex?

Sample: 866 Students

Topic/complexity	I (%)	II (%)	III (%)
Venoclysis	9,4	68,7	21,8
Urethral catheter	49	30,0	20,7
Oro/tracheal intubation	5,6	16,9	79,2
Sutures	15,1	33,9	50,9
Hand washing	41,5	22,6	35,8
Breast examination	54,7	41,5	3,7
Cervical examination	24,5	47,2	28,3
Wound infection	50,9	41,5	15,1

Source: Direct survey conducted 7 days after the last SEW was completed (May 2023. Documents in Reserve).

The study observed that the most complex practices for students were the Orotracheal Intubation and Basic Sutures workshops with more than 50% and, considering the least complex, Breast Exploration, Urethral Catheterization and the management of Wound Infection. It was observed that more than 50% of the participants obtained passing grades, demonstrating the interest of the students.⁵⁻⁸

c) Table 3

Final result

Evaluation: Based on the experience in this Simulated Experience Workshop (TES) SEW; would you take a second part of this Workshop?

Sample: 865 Students

	YES	%	NO	%
Would you take a second part of the SEW	849	98,1%	16	1,8%

Source: Direct surveys conducted 7 days after finishing the last SEW (May 2023. Documents in Reserve).

A simple reading of the results in Table III shows a percentage greater than 95% who would be willing to take a second part of the Simulated Experience Workshop (SEW).

d) Table 4

Final result

Evaluation: Under what enrollment condition would you be willing

to take the second part of the TES? SEW

Sample: 864 Students

Type of enrollment	Number	Percentage
Paid Elective Course	48	5,6 %
Free Elective Course	277	32,0%
Course Annex to Class (With extra charge in the enrollment)	539	62,3%

Source: Direct surveys carried out 7 days after finishing the last SEW (May 2023. Documents in Reserve).

More than 60% of the participants in the SEW workshops aspire for this activity to be incorporated as part of the program or curriculum to the Class where Simulation activities of a higher Level of Integrity (High Fidelity) are developed.⁹⁻¹¹

e) Table 5

Final result

Evaluation: Of the following aspects, which do you consider was the most relevant factor of the SEW?

Sample: 866 Students.

Factor	Total	%
Individual Decision	48	5,6
Support in Images	65	7,5
Team Work	831	96,2
Team Decision	814	94,3
Support in Simulated Models	797	92,4
Individual Work	32	3,7

Source: Direct survey conducted 7 days after finishing the last SEW (May 2023. Documents in Reserve).

Of the factors that were developed during the simulated activities, more than 90% rated as relevant:

- a) Teamwork
- b) Team Decision-making and Support in Simulated Models.⁹

This affirms that decision-making in medical activities continues to be based on a consensus of the work team, and on the results obtained from the application of these decisions to experimental models (Level of evidence). This makes the SEW activity very dynamic.

f) Table 6

Final result

Evaluation: Based on your experience in the SEW; what do you think makes them different from master classes?

Sample: 866 Students

Difference factor	Total	%
Less Theory Time	848	98,1
More Practice Time	866	100
Ability to Correct Errors	797	92,4
Instructor Tutorial	831	96,2
Group Interaction	784	90,5
Course Interaction	814	94,3
More Biblio Consultation.	684	79,2

Source: Direct survey conducted at the end of the last TES class (April 2023. Documents in Reserve).

The students' appreciation of the SEW, referring to them in terms of greater practice, possibility of correcting errors with the direct tutoring of the instructors, as well as greater dedication to practical activities, developed in work groups, and integrating different subjects already approved in their career, above 90%, when compared to the Master Classes, agree with the percentages of approval of the SEW and their use.^{10,11}

Conclusion

Evaluating the penetration and satisfaction of students in the Simulated Experience Workshops (SEW) from all possible angles, we can distinguish the following trends and conclusions:

- The decision to implement this type of activities in students with a first level of possibilities of clinical experiences was positive and satisfactory in 100% of the students.^{5,11}
- The levels of complexity in the procedures carried out during SEW I, remained within the resolution capacities acquired by our students, varying according to the specific activity, but maintaining a resolution percentage above 50%.⁸
- The idea of developing a second level SEW for students who have already taken the first level, is supported by more than 90% of the students, and as a subject attached to a pre-existing course, accepting a moderate economic burden. We can conclude that the experience was pleasant and they would like to repeat it.
- Although a high percentage of students think that the SEW should be attached to pre-existing chairs, a large percentage of them (60%) would be in favor of opening an Independent Class. This last situation is and becomes somewhat complex for the Pensum of our School of Medicine, but due to this result, an analysis of this option should be carried out, in the understanding that this decision would behave as an incentive and attraction for new entrants, even more so if this Chair begins to produce research and results that can be projected in original publications of our University.

- The possibility of working in groups and making decisions supported by a work team is presented as one of the most important factors in the preference of our students when considering the relevant factors of the S, when facing the Master Classes.^{10,11}

Acknowledgments

None.

Conflicts of interest

The author declares that there are no conflicts of interest.

References

- López JG, Spirko LV. Simulation, tool for medical education. *Uninorte Health, Barranquilla*. 2007;23(1): 79–95.
- Cervantes AD. Simulation in medical education. *Journal of Medical Education Research*. 2014;3(10).
- Castro v, Lizbeth J, Vallejo T, et al. Clinical simulation as a strategy for the development of critical thinking in medical students. *Medical Education Research*, 2019;8(29):13–22.
- Corredor DSS. Simulation in medical education, an alternative to facilitate learning. *Archivos de Medicina*. 2018;18(2).
- Arriola AL, Hernández M, Zavala MO, et al. Level of satisfaction of undergraduate nursing students with clinical simulation. *SANUS*. 2020;5(13).
- Ballesteros M, González B, Suberviola E. Clinical simulation in the polytraumatized patient, application in medical students. *Intensive Care Medicine*. 2020;44(6):389–391.
- Teles MG, Castillo AMC, Kumakura ARS, et al. Clinical simulation in teaching pediatric nursing: students' perception. *Rev Bras Enferm*. 2020;73(2):e20180720.
- Morales A, Mayra L, Sánchez RB, et al. Perception on the practice of urinary catheter application with a clinical simulator. *Education and Health Scientific Bulletin*. 2020;8(16):212–216.
- Pretty ML, Moreno RN, Díaz AH, et al. Clinical simulation: opinion of nursing students, autonomous university of Chile, Temuco. *Nursing: Humanized Care*. 2019;8(2).
- Montanet C. How to conduct complex skills workshops in clinical simulation with modern didactic principles. *FEM*. 2019;22(2):57–64.
- Riancho J, Maestre JM, Moral ID, et al. High-realism clinical simulation: an undergraduate experience. *Educ Med*. 2012;15:109–115.