# Effectiveness of Online and Face-to-Face Simulation-Based-Learning Workshops for Prospective Teachers
## (Short Paper)

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# האפקטיביות של סדנאות למידה מקוונות ופנים אל פנים המבוססות על סימולציה לפרחי הוראה
## (מאמר קצר)

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## Abstract

The COVID-19 pandemic accelerated the transition to online learning. Conducting online simulation workshops raised questions about its quality and effectiveness, and the participants' satisfaction compared to face-to-face workshops.

The current research aims at assessing participants' overall satisfaction from online SBL compared to face-to-face workshops. Both quantitative and qualitative tools were used, total of 481 prospective teachers participated in 32 SBL workshops. The findings imply that the value of online SBL has moved beyond the initial and basic needs for which they were developed.

**Keywords:** online vs. face-to-face learning, simulation-based learning (SBL), social-emotional learning, teachers' professional development.

## Introduction

Educational simulation-based learning (SBL) is considered a means for promoting effective emotional and social competences and strengthening the dimension of interpersonal communication in teaching. Participation in educational simulation workshops enables prospective teachers to experience and tackle conflictual interactions, with an actor playing the other side of the conflict who simulates real situations in a sterile and safe environment (Salman & Fattum, 2019). Schonert-Reichl and Rowcliffe (2017) assert the importance of providing learners and students with social-emotional skills such as self-awareness, self-management, social awareness, personal relationship skills and responsible decision-making.

There are almost no studies examining the differences in the effectiveness of online and face-to-face simulation workshops. In general, studies that examined the effectiveness of student learning by comparing online learning to face-to-face learning found that there are no differences in the effectiveness of students' preferences, styles, and grades in either group (Neuhauser, 2002).

Furthermore, college student expressed similar satisfaction (e.g., see Jahng, Krug & Zhang, 2007; Sitzmann, Kraiger, Stewart & Wisher, 2006).

## Methodology

### Research method

The current research adopts the mixed research approach. Both quantitative and qualitative tools are used to provide more details about the issue investigated (Greene, 2005).

### Participants

A total of 481 prospective teachers participated in 32 SBL workshops (10-20 teachers per workshop) during February-March 2020 and June 2021: 233 participants took part in face-to-face workshops and 248 online. The participants were college students in their third and fourth years of study who took part in simulation-based workshops as part of their pedagogical training.

### Tools

Based on Klein's questionnaire (2005), a valid and reliable questionnaire (alpha=0.75), which originally was used to measure the staff meetings contribution to pedagogic activities and faculty cooperation, we prepared a revised survey by modifying and adding several items that fit the simulation nature and reflect it.

The new version of the questionnaire constitutes two parts: demographic data; and 17 items spread over four categories – knowledge sources (6 items), social-emotional skills (4 items), authenticity of scenarios (4 items) and satisfaction (3 items). The participants answered the survey items on a scale of 1- 4 (1 – absolutely not; 4 – to a very great extent). Alpha Cronbach (0.68) was used to ensure the survey's reliability, and values between 0.6-0.9 were received in all categories.

In addition, 10 interviews were conducted with the prospective teachers who experienced both face-to-face and online simulation.

## Findings

### Quantitative findings

The t-test shows no significant differences between online and face-to-face outcomes for the three categories: knowledge sources; social-emotional effects; and authenticity of scenarios. A significant difference existed only regarding participants' satisfaction, in favor of the online participants ($t(479)=-2.74$, $p=0.007$).

**Table 1**: t-test comparison between f-f (n1=233) and online SBL (n2=248).

| Category | Type | Average | SD | t (df=479) | Alpha |
|---|---|---|---|---|---|
| Knowledge sources | Face-face | 3.65 | 0.53 | -1.37 | 0.17 |
| | Online | 3.71 | 0.45 | | |
| Social-emotional competences | Face-face | 3.57 | 0.49 | -1.30 | 0.19 |
| | Online | 3.62 | 0.47 | | |
| Authenticity of scenarios | Face-face | 3.65 | 0.49 | -0.92 | 0.35 |
| | Online | 3.69 | 0.45 | | |
| Participants' satisfaction | Face-face | 3.64 | 0.53 | -2.74 | 0.007* |
| | Online | 3.76 | 0.43 | | |

$*P<0.05$

For in-depth investigation of the online workshops, we divided the participation in the online simulation into two time periods: Period 1 was May-December 2020; and Period 2 was January-June 2021 (in both Period 1 and Period 2, the participants took part only in online simulations).

Comparing the data from each period with the face-to-face data, no significant differences in any category between face-to-face and online workshops was detected in Period 1. However, a significant difference was found in the participants' satisfaction category ($t(333)=-2.88$, $p=0.004$) in favor of Period 2.

### Qualitative findings

A thematic analysis of the interviews was conducted. The findings asserted four main themes similar to the questionnaire categories:

| Category | Quotes |
|---|---|
| Knowledge sources | "The actor's feedback and the catchy words he used were so moving and made me think deeply about the meaning and impact of my behavior and my words on others... although sometimes we really do not mean to hurt or say words we are used to saying in conflictual situations. But I realized that these words have a significant impact on others, and as a result, on our success in resolving conflicts." |
| Social-emotional competences | "If you are in such a situation, you may yell at the person in front of you or express an inappropriate reaction. You must think about how your reaction will be received. For example, once I got into a situation with the school's principal and became very angry and behaved in a horrible way. But now I think I know how to behave properly because I have been practicing very similar situations." |
| Authenticity of scenarios | "I feel more like it is imitating reality. I really do embody reality, but in a slightly different way; much of it was close to our world and very similar to what the new teacher faces." |
| Participants' satisfaction | "Frankly, I did not feel that I was participating online: I felt that I was in the class. I mean, it felt very comfortable and real. I talked and took part in the workshops and was very involved." |

**Knowledge sources**

The teachers reported several knowledge sources that contributed to their learning from both the online and face-to-face simulation workshops: (1) the actor's feedback; (2) collaborative experience; (3) experiencing the interaction with the actor.

**Social-emotional competences**

Teachers reported that both online and face-to-face simulation cultivate the development of emotional-social skills.

**Authenticity of scenarios**

Both in the online simulation workshops and face-to-face workshops, teachers asserted a strong relationship between the scenarios and dilemmas in real life.

**Satisfaction**

Teachers stated the pros and cons of both workshops. Teachers think there are no significant differences in the interaction or learning that takes place and even preferred the online workshops.

## Discussion

The findings imply that the quality of the online SBL is not less than the face-to-face SBL. These results are in line with research by Lavein (2021) and Eloz and Yavlon (2021), which asserts that the quality and value of online SBL have moved beyond the initial and basic needs for which they were developed. Moreover, the current study sheds light on major components that relate to the essence of simulation, mainly, the authenticity of the scenarios and the various knowledge sources. As Yardely et al. (2013) emphasize, unless the scenario presents a high degree of authenticity, the dissonance/gap between a participant's experiences of simulation and authentic practice in reality will be significant, hence, the transfer will be impaired. Interestingly, these aspects were preserved in the transition to online platforms.

## Conclusion

Online SBL is establishing its place as a significant and high-quality alternative to face-to-face SBL. Some participants even prefer the online medium over the typical one (face-to-face). Therefore, it is necessary to conduct more research aimed at improving online simulation. On the other hand, it is important to maintain a balance and enable face-to-face SBL and think deeply about the unique reasons that convince participants to attend the simulation center physically, replacing the online simulation workshops with face-to-face workshops.

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