FUNFORLAB REPORT

Results of VR testing game in EMR Region



FFL REPORT



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During MLT training most laboratory techniques are taught by using manual methods which is in contrast to the automated methods in most clinical diagnostic laboratories. The FunForLab serious game offers virtual reality training that is realistic, safe, and provides repeatable scenarios, enhancing learning retention and engagement while minimizing risks. A hands on approach in a virtual "classroom" allows the player "to learn by doing", which has been proven to be the best way to learn and retain the information + skills.

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Overview

The FUNFORLAB virtual reality (VR) game was tested by the different MLT education institutions: HELMO, UCLL, ZUYD HOGESCHOOL and UKAACHEN. In total 230 MLT students and 14 MLT lectors evaluated the game and provided feedback via a standardized questionnaire. In this report, the results are provided and discussed.

Method

Methodology

MLT students and lectors were asked to provide feedback on the FUNFORLAB VR game during feedback sessions in May-June 2023, using a standardized questionnaire. The results will be discussed in this report.



Results Analysis



1 Overall results of questionnaire

MLT students

In total, 225 MLT students provided feedback on the FUNFORLAB virtual reality (VR) game during different feedback sessions in May-June 2023. The overall results are shown in Figure 1. As you can see, the game was generally well accepted and quite easy to play and complete tasks. Yet, notably, one of the FUNFORLAB game objectives was to help clarify the MLT job. According to these results, the game does not provide a better understanding of the job and the content of the game was also scored neutral (mean score of 4.0). However, given that the players only played for a short period (max 15 minutes), we suspect they were more focused on the game and learning to play. Another objective was to create a fun game to teach laboratory skills and with a mean score of 5.2, we can conclude that the game is fun to play.



Figure 1: Students (N=225) were asked 22 questions and responded strongly disagree (score 1) to strongly agree (score 7). Bar graph depicts mean score per question and error bars depict standard error of mean (SEM).

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1 Overall results of questionnaire

MLT lectors

In total, 14 MLT lectors provided feedback on the FUNFORLAB VR game during different feedback sessions in May-June 2023. The overall results are shown in Figure 2. According to the MLT lectors, the game is easy to play (score = 4,9) and they felt comfortable to use it (score = 5,5). The interface was considered pleasant (score = 5,5) and the life science concepts were easy to understand (score = 5,1). Finally, the game was also considered to be fun, with a mean score of 5,3.



Figure 2: MLT lectors (N=14) were asked the same 22 questions and responded strongly disagree (score 1) to strongly agree (score 7). Bar graph depicts mean score per question and error bars depict standard error of mean (SEM).

1 Overall results of questionnaire

MLT lectors vs MLT students

Next, we compared the student vs the lector data. To see if they agreed/disagreed on certain aspects of the VR game. Overall, both groups responded similarly on most questions (Figure 3). However; significant (P-value < 0,05) differences were found regarding the tasks in the game and adequate difficulty; the students agreed that the tasks were clinically relevant (mean score = 5,1) but the lectors scored more neutral (mean score = 3,8). Regarding the difficulty, the mean score for the MLT students was 4,7 vs lectors with a mean score of 3,8.



Figure 3: MLT lectors (N=14) vs MLT students; comparison of the scores of the 22 questionnaire questions (strongly disagree (score 1) to strongly agree (score 7)). Bar graph depicts mean score per question and error bars depict standard error of mean (SEM). * indicates significant differences with a P-value <0,05.

2 Results per region

The results per region are depicted below. Overall, the UCLL students responded more neutral than the other regions. Similar trends can be see in the different regions.



× 1310

Figure 4: Data per region is depicted. Data from 1 question is missing in the Helmo data (content is relevant question). Bar graph depicts mean score per question and error bars depict standard error of mean (SEM).

3 General feedback on the VR game

Overall, the perception of the VR game was very positive. The game story + design was appreciated by the players. The players noted that the VR game offers a realistic view of the laboratory (with the sidenote that it is set in space which was not seen as realistic). The game is fun, interactive and easy to play with the controls and the content is relevant for a MLT student. During the first feedback sessions, there were still some adjustments that needed to be made; and there were some issues but the final version which also contains sounds/music/voices has been considered a good example of a serious game which can be used during MLT training.





Main takeaways

The main takeaways for the VR game after the feedback sessions was that the game was still in development at that time and the comments that were made during the sessions was registered and later implemented in the final version of the game.

Using the different expertise and know-how of all the partners involved, the FUNFORLAB VR game was built in a cooperative way aligning both "fun & facts" so that the final VR game is able to educate MLT students and allow them to practice in a virtual laboratory.

In the course of the coming years, when the FUNFORLAB VR game will be integrated into the different curricula of the teaching institutions, it will be reviewed how the game has an impact on the MLT training. To do this, the partners and lecturers involved will be asked to assess the impact of VR training on laboratory performance.

To keep the discussion going, the FunForLab community (forum) is the place to connect and share practical advice and findings. Further, every partner can expand the training scenario's/chapters so that the FunForLab game evolves and covers a broader range of skills and situations.



Play the game



Scan to go to the VR game download and tutorials:

