

INTRODUCTION

Pharmacy schools nationwide have experienced declines in enrollment in recent years. The number of applicants to pharmacy schools decreased from 226 per school from the 2008-2009 academic year to just 131 per pharmacy school in 2017, displaying a 42% decline in applications.¹

Students and faculty from the University of Pittsburgh School of Pharmacy worked with a partner, Read to Lead, to develop 4 educational games relating to pharmacy with a goal of expanding interest in pharmacy for students at a young age. The game was initially deployed during a session held at the Junior Health Care Explorer's Program (JHCE) in partnership with University of Pittsburgh Medical Center (UPMC). Data was collected examining overall enjoyment, ease of use, and potential learning from the game itself. A second session was held with Pittsburgh Science and Technology Academy to further assess the learning benefit of the pharmacy educational game.

DEVELOPMENT

Student pharmacists collaborated with the Read to Lead team to construct a storyline, characters, and pharmacy intervention for several pharmacy educational games.

Several scripts were drafted before the completion of 4 individual games created by Read to Lead: "A Puzzling Prescription", "Vaccination Hesitation", "Career Crossroads", and "Unconscious Bias".



METHODS

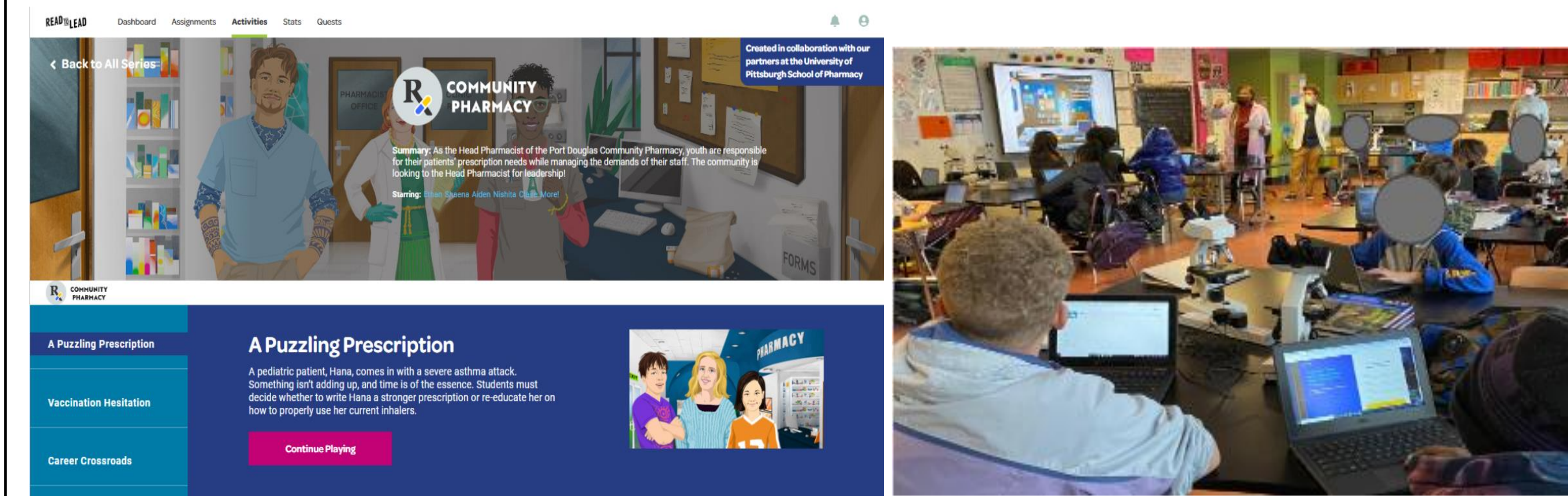
Junior Healthcare Explorers (JHCE)

- Pitt Pharmacy partnered with University of Pittsburgh Medical Center (UPMC)'s Junior Health Care Explorer's Program (JHCE) in November of 2021 for initial assessment of educational games
- Total of 94 middle school students attended JHCE session
- A post-survey was created for middle school participants at JHCE session
- Questions evaluated "Enjoyment", "Ease of Use", "Learning Benefit", and "After Effects" attributed to playing the game
- Participants were able to play two games, specifically "A Puzzling Prescription" and "Vaccination Hesitation"
- Results from both survey were collected and analyzed to assess if participants showed positive responses in each category of questions posed

METHODS (cont.)

Pittsburgh Science and Technology (Sci-Tech) Academy

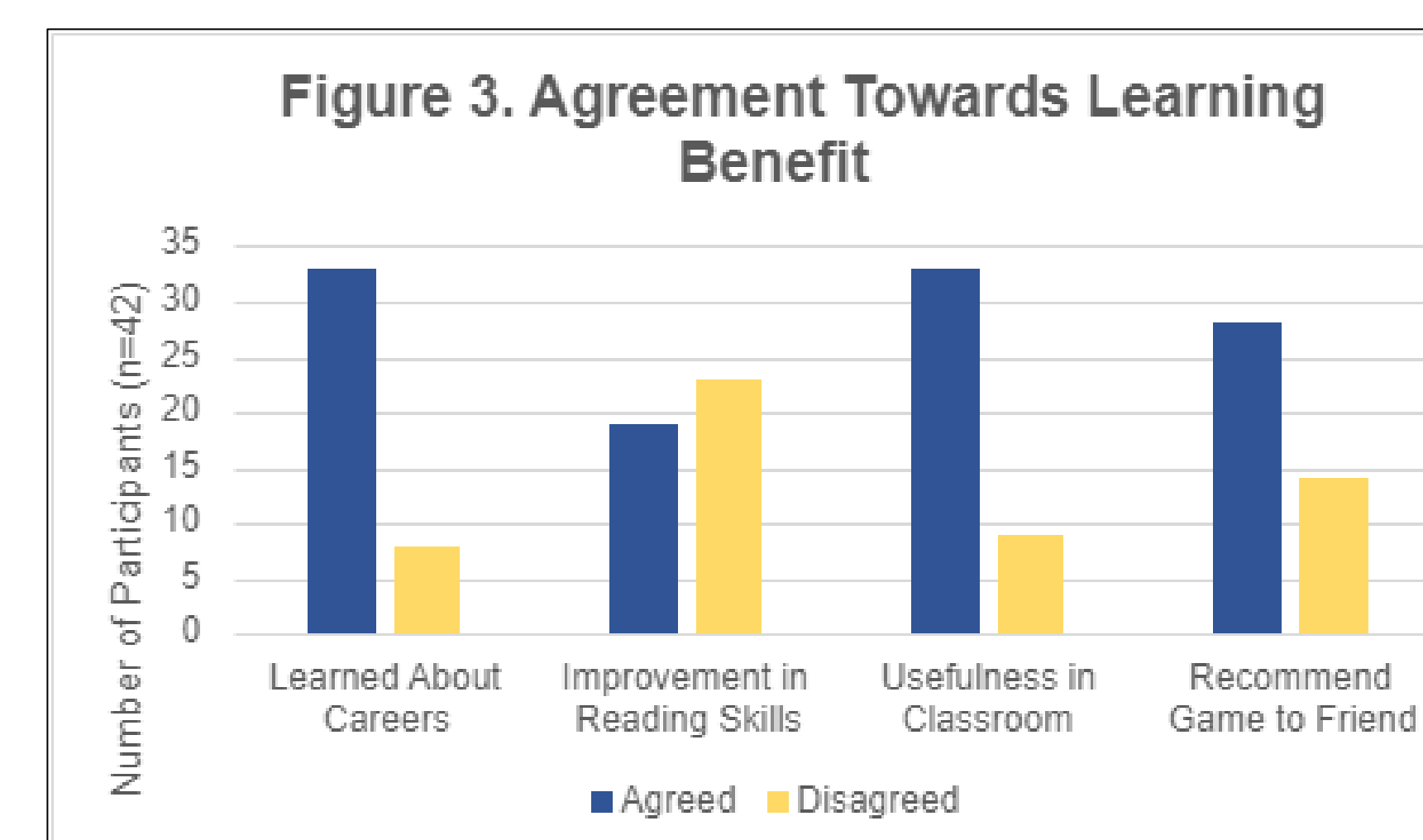
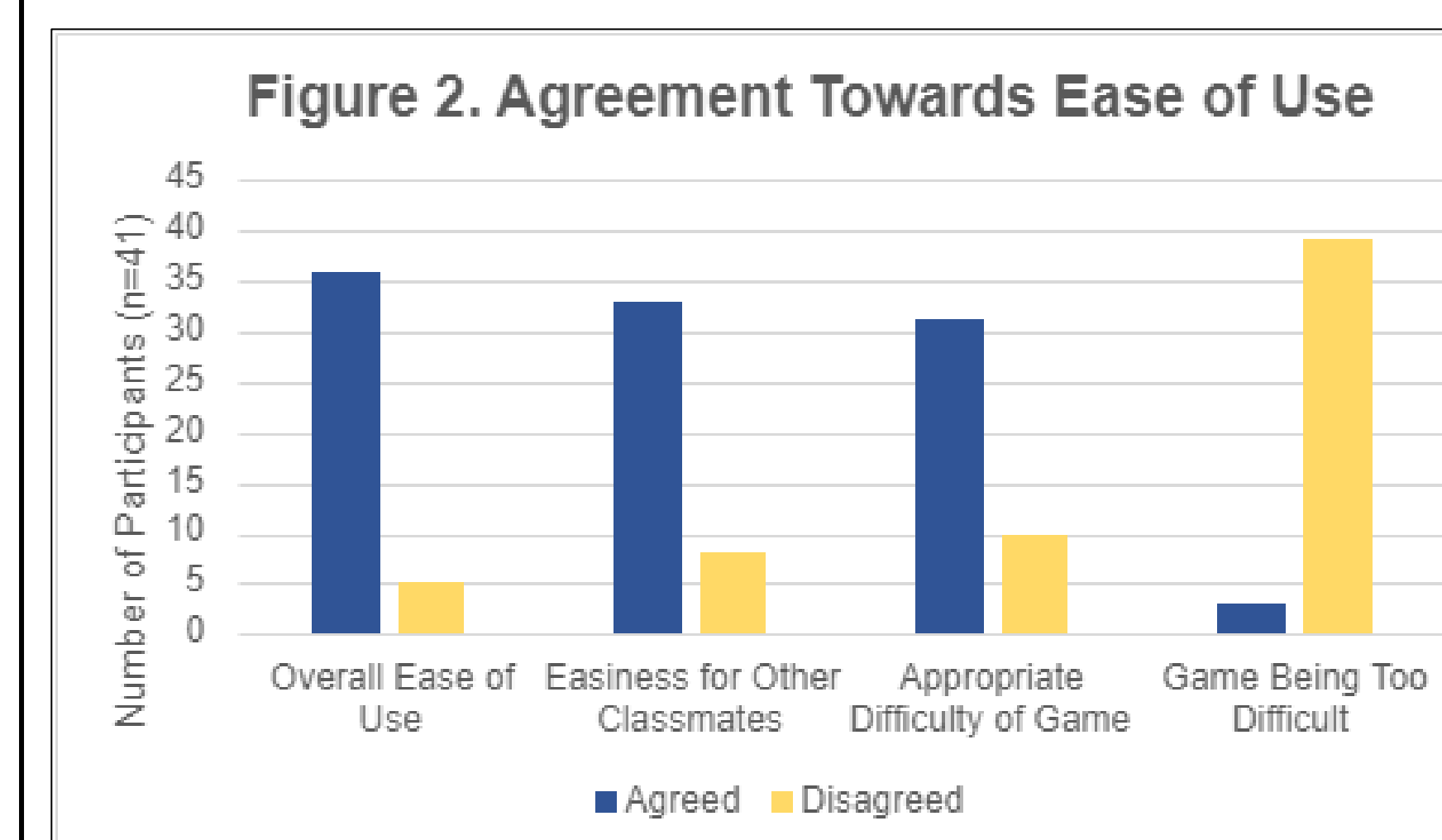
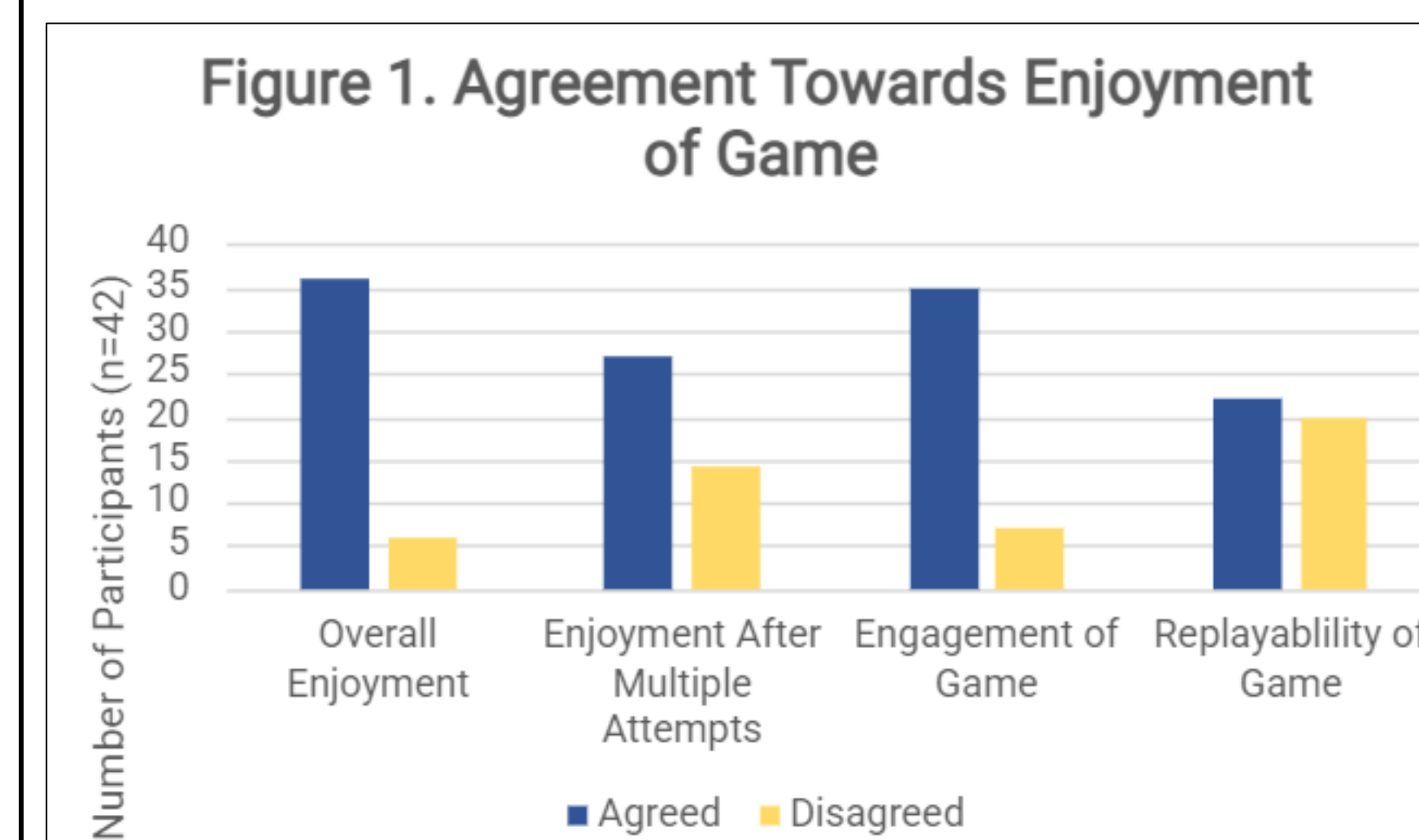
- Survey Creation
 - Pitt Pharmacy partnered with local high school and middle school Pittsburgh Science and Technology Academy located in Pittsburgh, PA in November 2022; 20 middle school students in grades 6th-8th were included in the study
 - Created PowerPoint presentation about general information regarding pharmacy and instructions on accessing the game
 - A short pre- and post-survey for middle school participants with questions evaluating learning from the game with a scale from 1 (Not Very Well) to 5 (Very Well)
 - Open-ended questions were also provided for participants to provide feedback
- Evaluation of Results
 - Results from both survey were collected on a spreadsheet and analyzed to assess if participants showed an increase in knowledge regarding pharmacy
 - Results were de-identified from participants in session



RESULTS

JHCE Session

In the first launch of the pharmacy video game in November of 2021, a total of 42 middle school students participated in the game session. Of the questions asked in the post-survey, 42 of the participants responded to the questions, with 5 questions only having 41 responses. "After Effects" responses omitted from results due to questions as their scope was centered on overall reading skills.



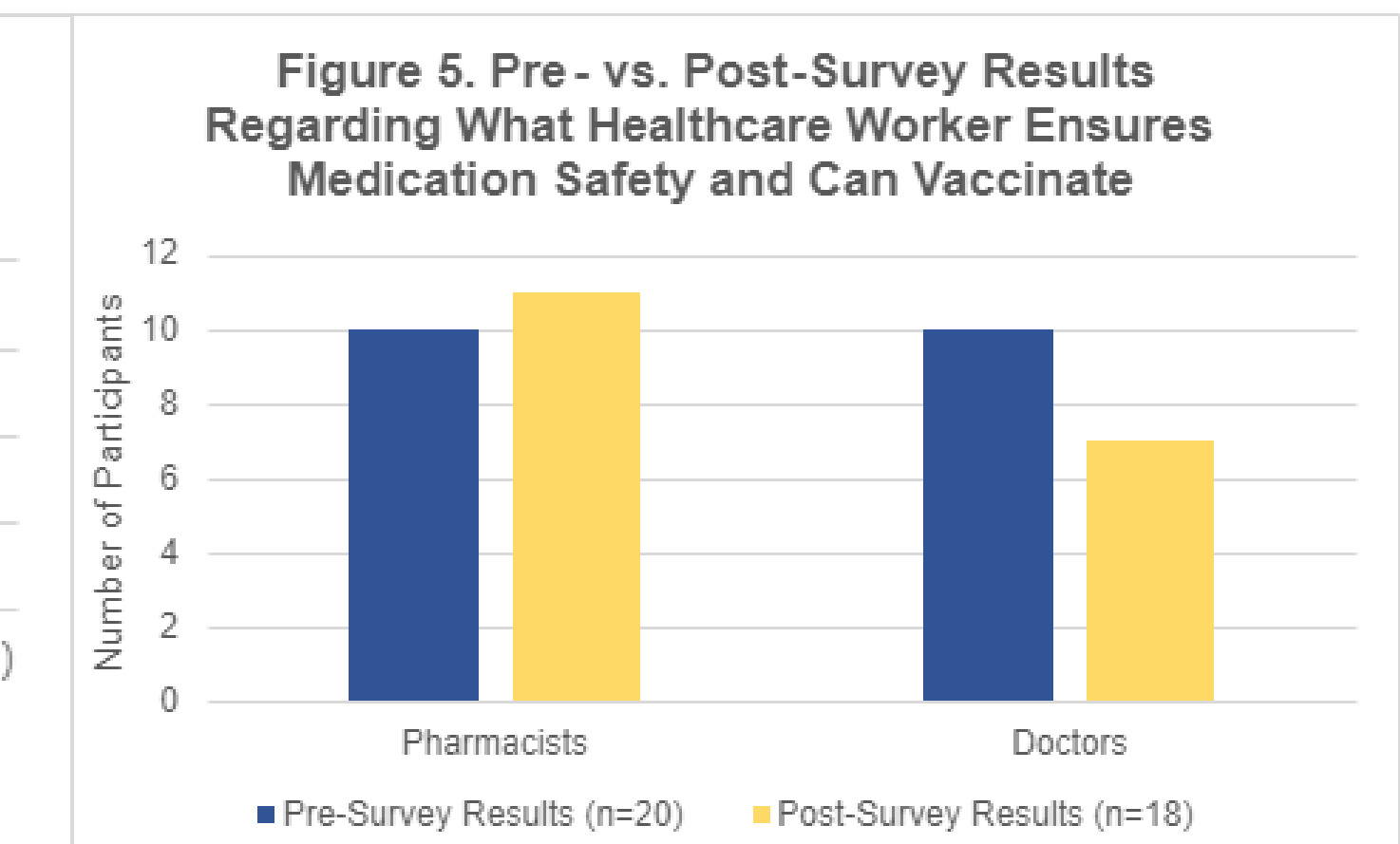
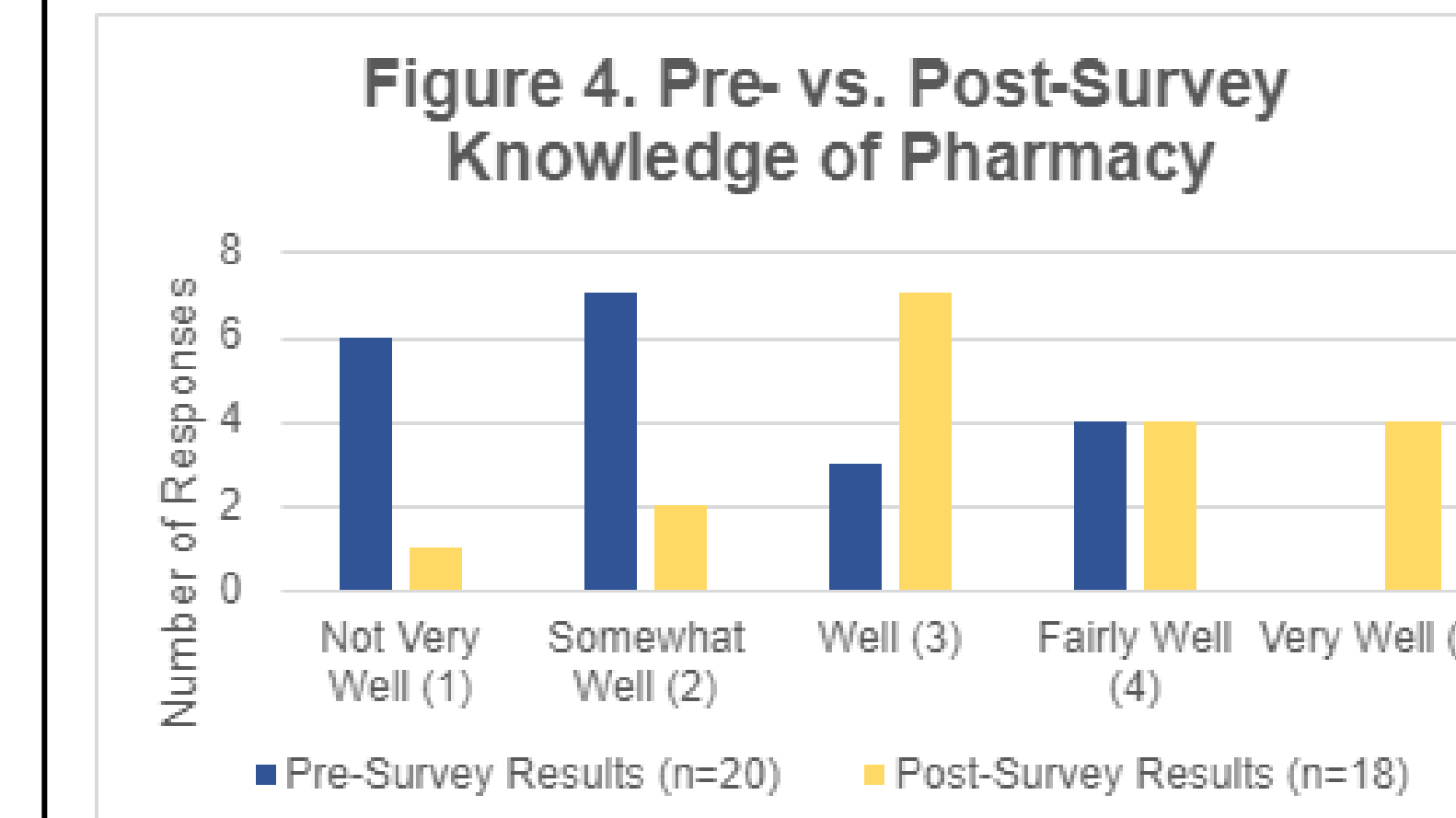
RESULTS (cont.)

Pittsburgh Sci-Tech Session

A total of 20 responses were collected from the middle school students that participated in the video game session. Two of the participants did not complete the post-survey; therefore, the total number of participants is higher in the pre-survey results (n=20) compared to the post-survey results (n=18).

Pre-Survey Responses Towards "What is something you know about pharmacy?"

"Pharmacies develop medicine that help people"	"They give prescriptions that doctors prescribe"
"It can go from chewable pills for allergies to syringes to IV's for days"	"It's the making and studying of medicine"
"A pharmacy is where you get medicine"	"I don't know what it is yet, I just know the store"



When asked pre-gameplay "Have you ever gone to pick up medicine at a pharmacy?", 100% of the students selected yes; additionally, participants were asked post-gameplay about their overall experience playing the game, 83% indicated their enjoyment about the learning experience.

CONCLUSIONS

The data collected from the surveys in both sessions suggests that students had more knowledge about pharmacy and the role of a pharmacist after playing the game. The students also agreed that the game was an enjoyable experience, easy to use, and provided learning benefits. Future follow-up surveys involving the same participants in several years would be beneficial and demonstrate if the video game session was an effective tool to convince students to become pharmacists in the future.

The University of Pittsburgh School of Pharmacy works closely with the RxAmbassadors at Pitt Pharmacy, which is a group of student pharmacists dedicated to showcasing and expanding the interest of pharmacy. The goal is to further expand the deployment of the video game to multiple middle schools around the Pittsburgh area at first, aiming to branch out from Western Pennsylvania to other regions of the country.

1. Pavuluri, N., Aparasu, R. R., Boje, K. M. K., et al. (2019). Consideration of Aggressive and Strategic Approaches to Address Declining Enrollment in US Pharmacy Schools. *American Journal of Pharmaceutical Education* August 2019, 83 (6) 6959.
2. Hisashima, J., Johnson, B., Schmidt, M., Patel, R. "Student-Driven Development and Deployment of a Pharmacy-Focused Game for Middle School Students" Presented at Pennsylvania Pharmacists Association Annual, 2021.