

INTRODUCTION

- Lecturing has been the most utilized method of teaching in higher education for decades
- Recently, studies have shown that pharmacy educators should place a higher emphasis on problem-solving, critical thinking, and self-directed learning to mimic the actual pharmacy work environment and maximize the quality of graduating pharmacists
- This approach is known as active learning whereby students actively engage in the learning material via activities, investigations, discussions and more
- In this study, class of 2024 began the program online, then transitioned to a hybrid model, then transitioned to in-person
- Class of 2025 began the program via a hybrid model then transitioned to in-person
- Class of 2026 was entirely in-person

OBJECTIVE

- To evaluate the differences between students' preferred teaching methods based on perceived effectiveness and enjoyability in a Doctor of Pharmacy Program.

METHODS

- Anonymous survey conducted in the Spring of 2022 among cohorts experiencing different teaching modalities due to the COVID-19 pandemic: online-only, online + in-person, and in-person only
- Likert Scale questions assessed student attitudes toward teaching methods in terms of perceived effectiveness and enjoyability
- Survey questions coded on a scale from 1 to 5, with 1 indicating 'strongly disagree' and 5 indicating 'strongly agree'. Each question's score was reported as the mean \pm standard deviation (SD)
- Effectiveness/enjoyability of different teaching methods were compared across cohorts

RESULTS

Table 1: Average Rating of Teaching Method Effectiveness (1= strongly disagree, 5 = strongly agree)

Teaching Method	Cohort A (n=24)	Cohort B (n=22)	Cohort C (n=15)	P-Value
Audience Response Systems	4	3.6	3.7	0.37
Interactive Web-Based learning	3.7	3.4	3.6	0.78
Patient Simulation	4	4	4.1	0.97
Small Group Activities	3.9	3.8	3.3	0.04
Large Group Discussions	3.5	3.2	2.8	0.22
Lab Experience	4.2	3.8	3.9	0.44
IPPE/APPE	4.1	4.2	4.3	0.67
Standard Lecture	3.9	3.9	3.8	0.84

Figure 1: Effectiveness of Teaching Methods

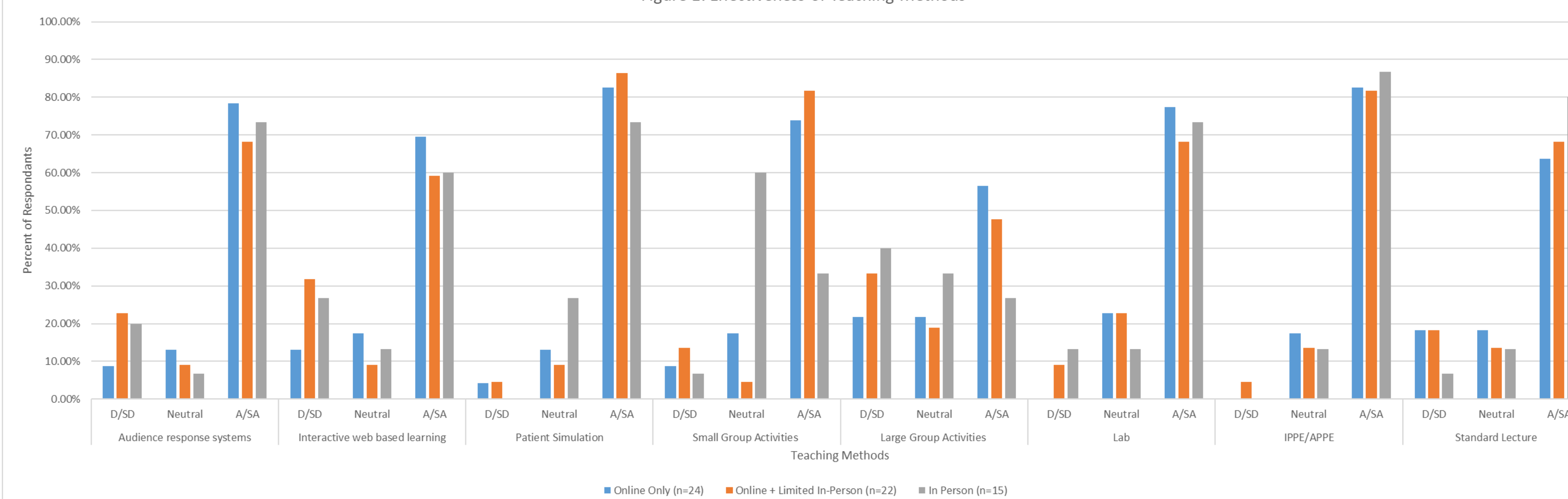


Table 2: Average Rating of Teaching Method Enjoyability (1= strongly disagree, 5= strongly agree)

Teaching Method	Online Only (n=24)	Online + Limited In-Person (n=22)	In Person (n=15)	P-Value
Audience Response Systems	4.1	3.8	3.8	0.56
Interactive Web-Based learning	3.3	2.9	3.7	0.2
Patient Simulation	3.5	3.5	4	0.34
Small Group Activities	3.8	3.5	3.1	0.1
Large Group Discussions	3.1	3.3	2.9	0.7
Lab Experience	4	4	3.9	0.99
IPPE/APPE	4	4.1	4.3	0.6
Standard Lecture	3.4	3.7	3.5	0.6

Figure 2: Enjoyability of Teaching Method - Online Only (n=24)

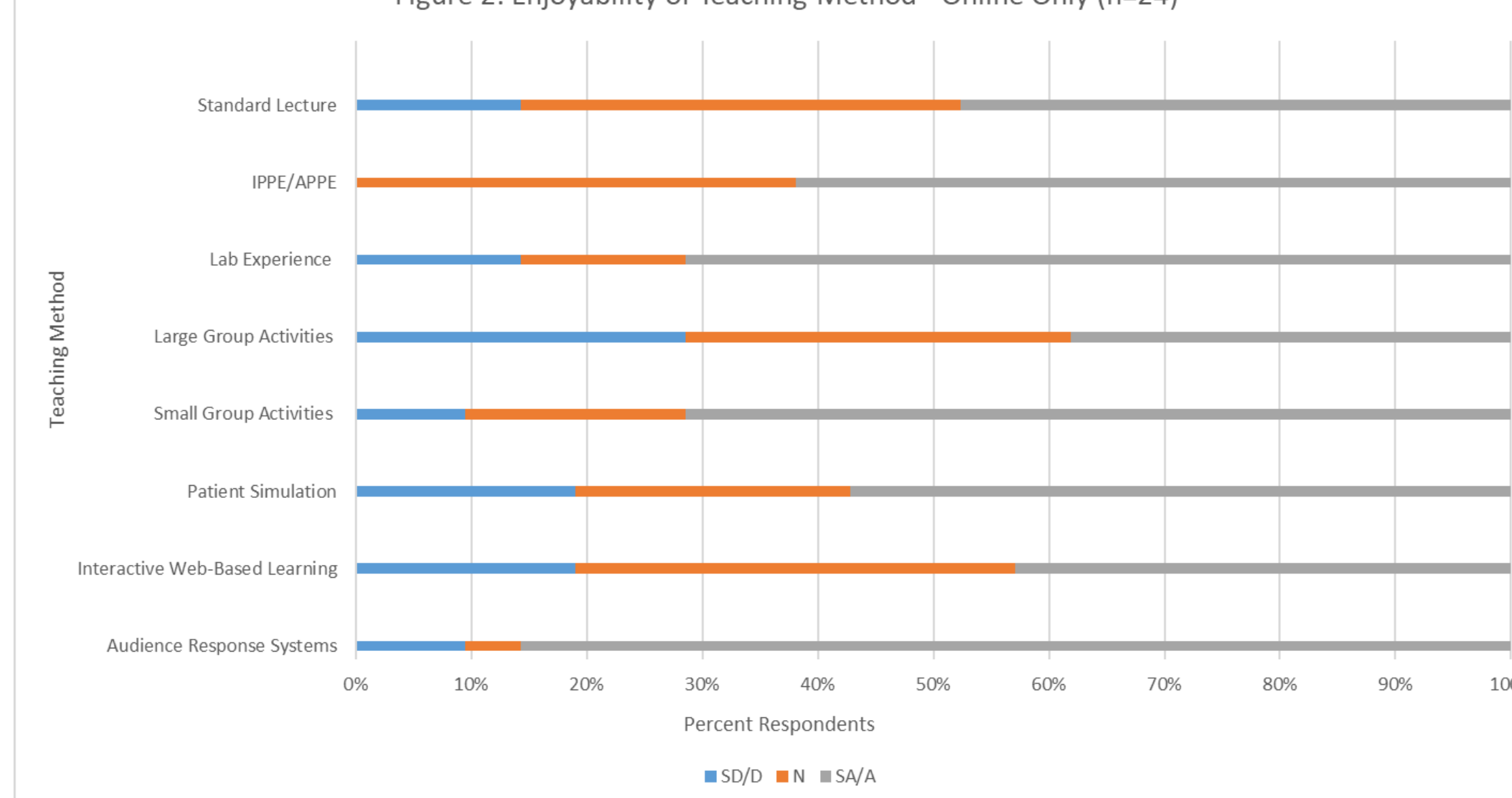


Figure 3: Enjoyability of Teaching Method - Online + Limited In-Person (n=22)

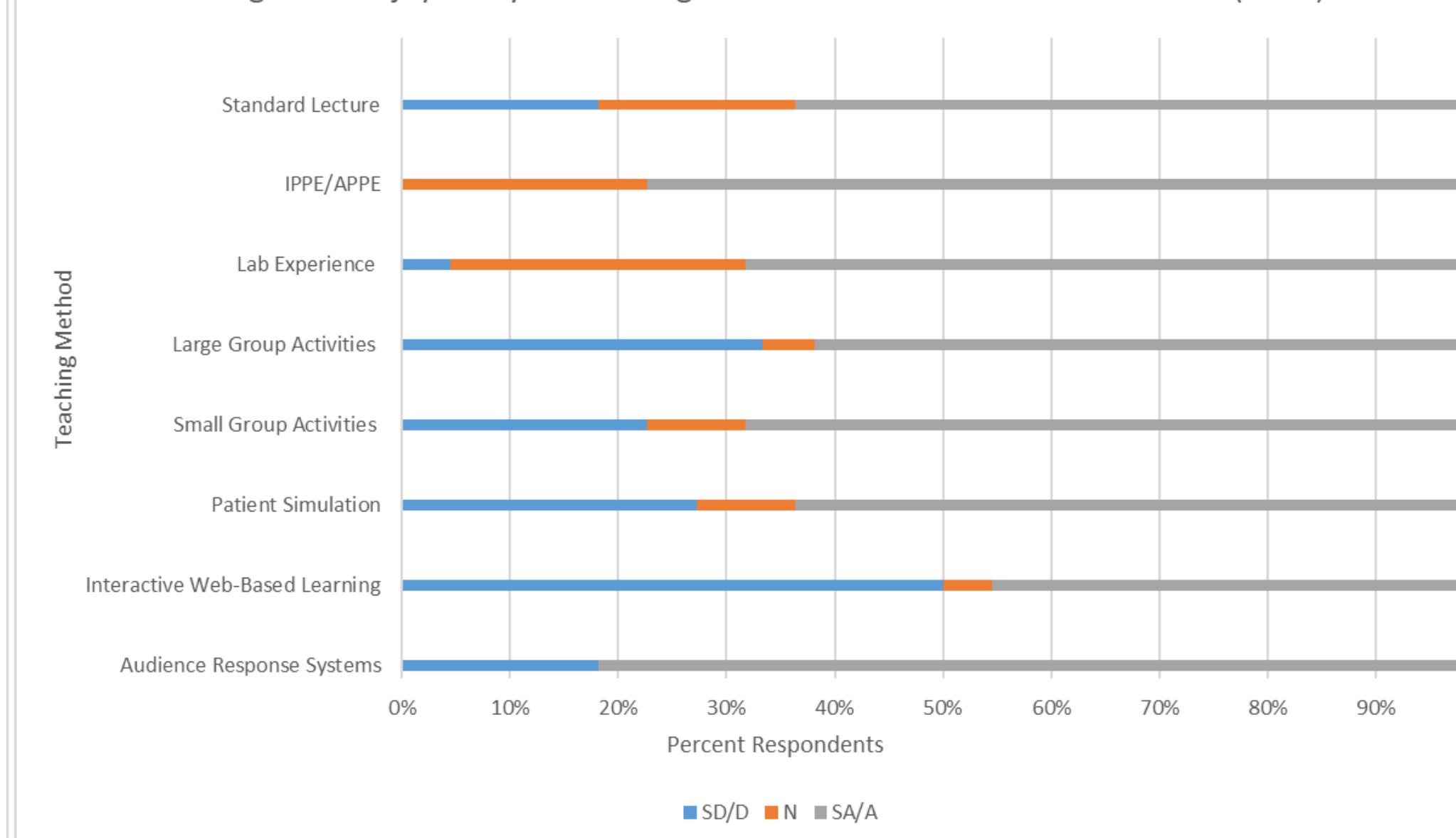
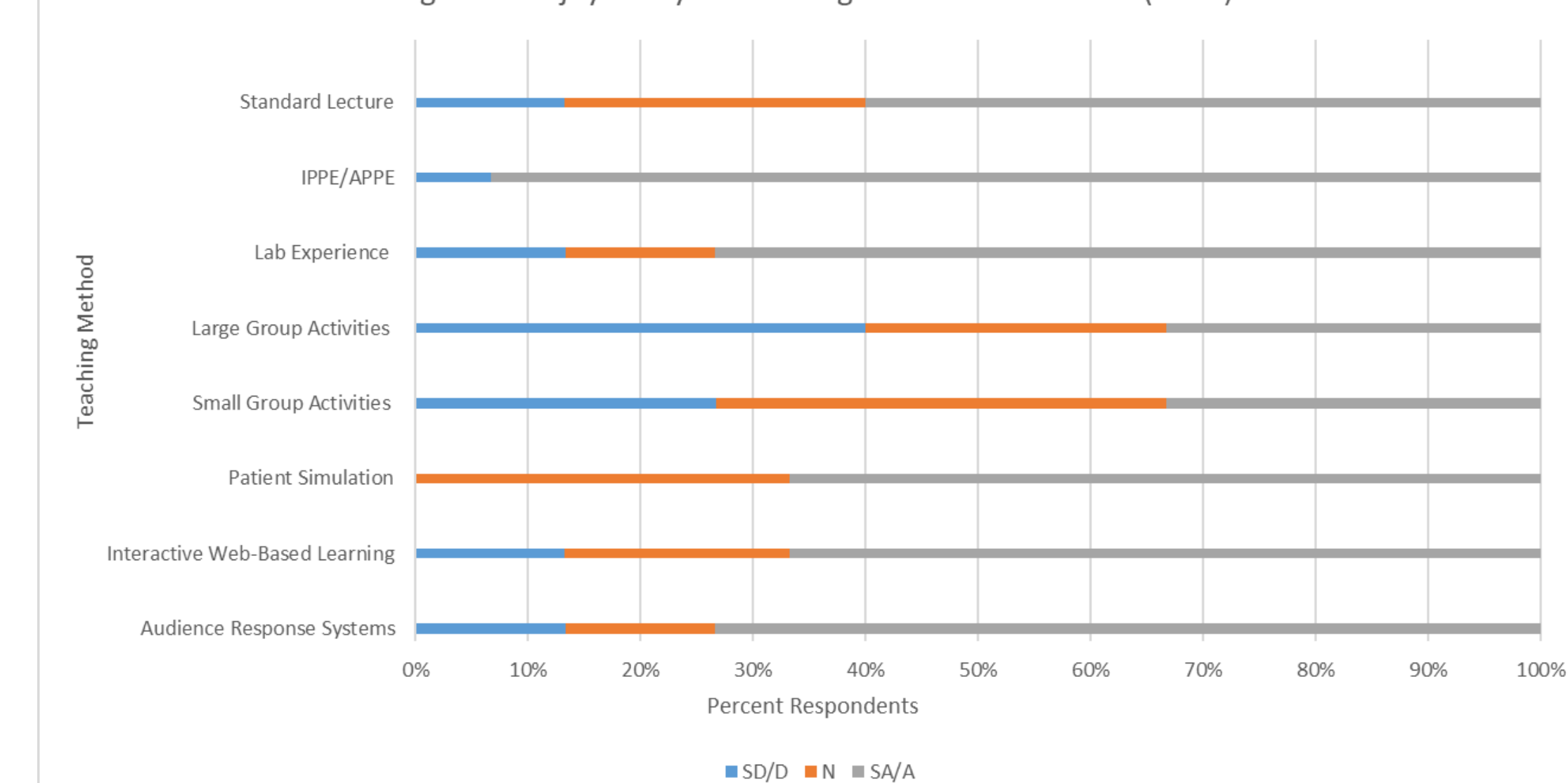


Figure 4: Enjoyability of Teaching Method - In-Person (n=15)



- Online-only students favored lab experiences (Mean: 4.2, SD:0.8) and IPPE/APPE (Mean: 4.1, SD: 0.7)
- Online + in-person students rated IPPE/APPE (Mean: 4.2 , SD: 0.9) and patient simulation (Mean: 4.0, SD: 0.8) highly, but web-based learning was less favored (Mean: 3.4, SD: 1.4)
- In-person students highly valued IPPE/APPE (Mean: 4.3, SD: 0.7) and patient simulations (Mean: 4.1, SD: 0.8)
- Large group discussions were consistently rated least effective and enjoyable amongst the three cohorts

DISCUSSION

- Results demonstrates nuanced perspectives within pharmacy education, particularly concerning the effectiveness and enjoyability of various instructional methods across different cohorts that received varying teaching modalities
- Despite receiving the same curriculum, students' preferences aligned with the mode of instruction they were initially exposed to at the beginning of the program – students tended to prefer what they started with
- Online only cohort had a high enjoyability rating for audience response systems (4.1/5), where 85.7% of this cohort somewhat agree/agree that audience response systems are enjoyable – possibly attributed to the fact that a large amount of interactive engagement during remote learning was via audience response
- For the online + in-person cohort the introduction of interventional web-based learning systems received a lower effectiveness rating (3.4/5) with 31.8% expressing least effective and 50% rating as least enjoyable. Acquiring a balance between web-based and in-person teaching can pose a challenge especially regarding engagement of students
- Small sample size is a limitation of this study

CONCLUSIONS

- There was a consistent trend across all groups, with students expressing a preference for practical, hands-on experiences and displaying a disinterest in large group settings
- Doctor of Pharmacy curricula should prioritize experiential and teaching strategies that promote student engagement, critical thinking, and problem-solving skills