Student Satisfaction with Computer Versus Manually Generated Schedules for Advanced Pharmacy Practice Experiences

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BACKGROUND

Scheduling students for Advanced Pharmacy Practice Experiences (APPE's) is an extremely challenging and time consuming process. Developing schedules that meet both student interests as well as college needs and requirements can often times directly conflict or have the perception of favoritism.

Manually scheduling APPE rotations is a time consuming process which can encompass days and run the risk of manual data entry error. However, it allows the scheduler to use their personal interpretation of student interest, ability, goals, expectations for rotations, etc. to help develop a more desirable schedule. Computer based scheduling programs can complete an entire APPE schedule in a matter of minutes or hours; however, lack the ability to customize a schedule that involves the personal understanding of a student and rotation or preceptor.

The University of Cincinnati James L. Winkle College of Pharmacy has a history of manually scheduling APPE rotations. While the APPE program has consistently been recognized during accreditation for its quality and evaluated very positively by students, there have also been comments by students that there is a perception of scheduling favoritism towards some students.

Objective

To compare student satisfaction between an experiential scheduling platform (PharmAcademic) and traditional manual scheduling for APPE's.

METHODS

Three APPE schedules were created using the students' rotation preference list. Schedules were created using traditional manual scheduling (Traditional), PharmAcademic using rules that mirrored the Traditional method (Mirrored), and PharmAcademic giving priority to scheduling the students' most desired rotations without the use of rules (Student Preferred). APPE schedules were blinded, randomized, and provided individually to the students for review. Students completed a survey after reviewing each schedule rating their satisfaction as it pertained to required APPE's, rotation sequence, ability to assist with career decision making, and achieve learning goals, and rank their preference for each schedule.

Students were informed in advance, that regardless of their preference of schedule, they would receive the Traditional schedule as their actual rotation schedule. This project was approved by the IRB at the University of Cincinnati.

Students were asked to answer the following questions regarding their level of satisfaction with each APPE schedule						
1. What is your level of satisfaction with the following:	1	2	3	4	5	6
A. Medical/Surgical Specialty Rotation (s)	Very Dissatisfied					Very Satisfied
B. General Medicine Rotation (s)						
C. Ambulatory Care-Community Pharmacy Rotation (s)						
D. Ambulatory Care-Organized Health Care Practice Rotation (s)						
E. Direct Patient Care Selective Rotation (s)						
F. Non Patient Care Elective (s)						
2. What is your level of satisfaction with your rotations as it pertains to your career decision making?	1	2	3	4	5	6
	Very Dissatisfied					Very Satisfied
3. What is your level of satisfaction with your rotations as it pertains to your individual learning goals?	1	2	3	4	5	6
	Very Dissatisfied					Very Satisfied
4. What is your level of satisfaction with being assigned to the rotations you ranked?	1	2	3	4	5	6
	Very Dissatisfied					Very Satisfied
5. How many rotations are you satisfied with?						
6. How many rotations are you dissatisfied with?						
7. Of the rotations you are dissatisfied with, to what extent is your dissatisfaction?	1	2	3	4	5	6
	Very Dissatisfied					Very Satisfied
8. What is your overall level of satisfaction with this schedule?	1	2	3	4	5	6
	Very Dissatisfied					Very Satisfied
9. Please rank the schedules in order of preference						
10. Which schedule do you think was created manually?						

RESULTS

- All 99 students completed the survey.
- There was no statistically significant difference for any survey item between the schedules.
- Significantly more students were very satisfied with the overall Mirrored schedule compared to the Student Preferred schedule ($\chi 2$ [1, n = 196] = 4.3, p = 0.04, phi =0.2)—Figure 1.
- The mean number of rotations students were satisfied with (range 6.5-7.1; F [2, 291] = 0.88, p = 0.4) and the mean number of rotations students were dissatisfied with (1.6 for all 3 schedules; F [2, 291] = 0.055, p = 0.9) did not differ between groups.

Figure 1. Satisfaction with Rotation Schedule
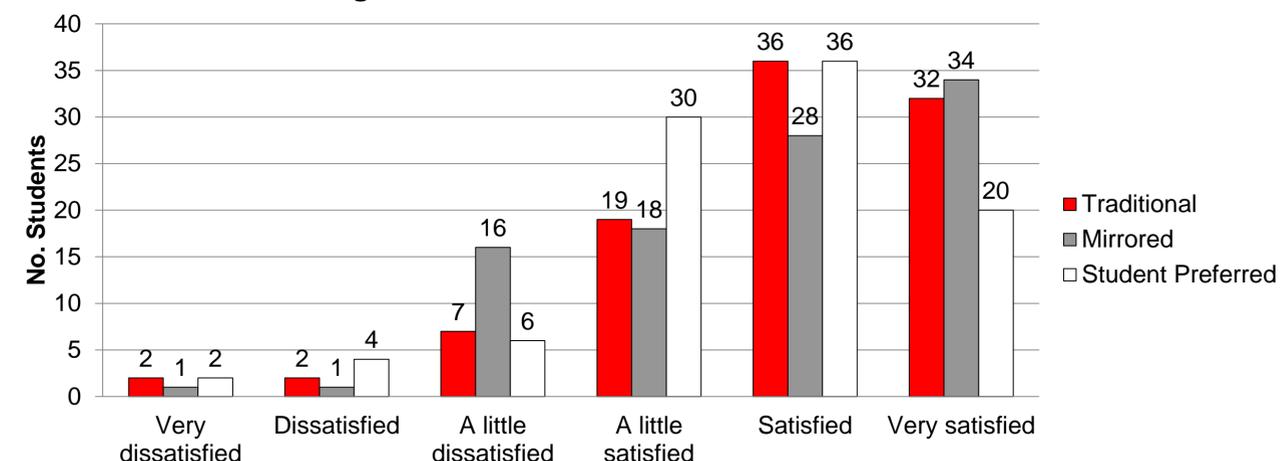
- More students felt that the Mirrored Schedule (38.1%) was created manually compared with Traditional (31.9%) and Student Preferred (29.9%).
- More students preferred the Mirrored Schedule (41.4%) as their first choice compared with Traditional (35.4%) and Student Preferred (23.2%).
- More students preferred the Student Preferred Schedule (41.4%) as their second choice compared with Mirrored (31.3%) and Traditional (27.2%).

Conclusion

- Students were equally satisfied with an experiential scheduling platform as traditional manual scheduling method.
- Satisfaction decreased when schedules were computer generated based on students' most desired preference.
- Computer generated schedules give a greater perception of fairness and are associated with decreased administrative time.