Faculty Perspectives on the Impact of Virtual Office Hours in Engineering Courses

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Abstract
Instructor-student interaction is an important element of the course design, but office hours can be challenging owing to time and space limitations and are underutilized by students. Virtual office hours provide a low stakes environment for learning and yield productive interactions between all enrolled students and the instructor. This study reports on three engineering instructors’ perspectives on the efficacy of virtual office hours compared to the traditional face to face option. These classes ranged from sophomore to junior level covering two classes in mechanical engineering and one in electrical and computer engineering and had a total enrollment of 150 students across all courses. The purpose of this study was to understand how virtual office hours can impact engineering student’s learning, if it is an efficient use of time, and the differences between traditional and virtual office hours. The instructors’ perspectives were gathered via interview after implementing virtual office hours for at least a semester. Analysis of the interviews concluded that the implementation of virtual office hours was mutually beneficial to both the instructors and the students.
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**PRESENTER:** Brooke-Lynn Andrade

**INTRODUCTION**
This study reports on the faculty opinion of holding office hours remotely. Virtual office hours (VOH) possess qualities that make students more likely to attend than face-to-face meetings. Meeting virtually via Zoom with professors provides a low stakes environment, and more productive interactions with several students at a time. With several studies revealing that office hour attendance is often low, it is important to gain an understanding of how this method of interaction is beneficial to student learning.

**METHODS**
1. Interviewed three professors that had used VOH for at least a semester
   1. Heat Transfer
   2. Dynamics (2 Sections)
   3. Circuit Analysis and Design
2. Transcribed interviews and analyzed responses
3. Thematic coding revealed correlations and individual opinions
4. Documented instructor perceptions

**RESULTS**

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<thead>
<tr>
<th>Professor 1</th>
<th>Professor 2</th>
<th>Professor 3</th>
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<tbody>
<tr>
<td>Reasons to offer VOH</td>
<td></td>
<td></td>
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<tr>
<td>Student led</td>
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<tr>
<td>Students work at own pace</td>
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<td>More students can attend</td>
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<tr>
<td>Establish students knowledge of content</td>
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<td>Others benefit from questions</td>
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<td>Review concepts</td>
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<tr>
<td>More questions asked</td>
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</tbody>
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**Instructor quotes**

"We need to offer students more flexibility and offer me more flexibility as the instructor."

"There are people who can now make mistakes in a low stakes environment."

"In this scenario people are more likely to ask questions."

"The students can benefit from the questions of others."

"For many students, that barrier is removed where they are now more comfortable to talk, even in the class."

**CONCLUSIONS**
This study revealed that VOH were mutually beneficial to professors and students. They concurred that there was better student comprehension of material with the aid of this platform. The professors benefitted from less repetition of material, better accommodation, meetings were more productive, and more student participation.