# Teachers Exploring Mobile Device Integration:
# A Case Study of Secondary Teachers' Responses to iPads in the Classroom

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## Abstract

This qualitative study seeks to understand and resolve the difficulties that teachers encounter when integrating mobile devices in classrooms. To address the issue of teacher receptiveness, three undergraduate researchers collaborated with an education professor in spring 2012 to complete a qualitative study with a two-fold purpose: 1) to investigate **how** two secondary teachers in an independent school responded when adopting a class set of iPads throughout one school cycle (six school days); and 2) to elucidate **what** a school could do better to support teachers who are piloting mobile device integration. Although previous studies have commonly focused on the impact of 1:1 programs on student achievement, this study focuses on the role of the instructor when designing and delivering instruction with or without iPads. Qualitative data were collected and recorded after a series of observations and interviews with the teachers and the information technology director. All interviews were roughly transcribed and coded systematically so that patterns could be noted. Results found that both instructors commented about their instructional philosophy, instructional objectives, technology support, teacher efficacy, and classroom. At the conclusion of the experiments, the teachers had favorable impressions of the technology, despite initial misgivings and early technical issues.

## Methodology

- **Qualitative study:** 3 formal interviews with each instructor: 1) a pre-interview assessing technological preconceptions, 2) interviews discussing experiences while teaching with the iPads, and 3) a follow-up interview regarding the return to non-iPad-based instruction; Participant observation with qualitative field notes of classroom instruction, as well as a supplemental interview with the school's Director of Informational Technology.

- **Setting:** Independent school in southern California; one middle school English teacher & one high school history teacher.

- **Materials:** The research team borrowed one class set of first generation iPads from the University and each instructor used the devices with all five sections of their classes for one school cycle, or six school days. Teachers rotated iPads so that each section had several experiences learning with or without the devices.

- **Data Analysis:** All interviews were recorded and roughly transcribed. Data were coded after a constant comparative analysis which yielded patterns that captured the participants' overall perceptions of mobile device integration in classrooms.

## Acknowledgements

| Instructional Philosophy | Instructional Objectives | Technological Support | Teacher Efficacy | Classroom Management |
|---|---|---|---|---|

**Table 1**

| Pre-Study | Mid-Study | Post-Study |
|---|---|---|
| I believe technology is at the forefront of education. It's the way things are going, and you can't fight it. | Getting everyone set up on the network at first was challenging. When I didn't have support I told my students, "I don't know what to tell you." | I definitely think it is worth my time to integrate the iPad into my curriculum. I could change my whole class to be iPad focused. |
| My fear with having iPads is that I would want to see them being used effectively. | It was challenging because they were really excited, and it was difficult to work with their level of excitement. | My students were engaged and wanted to do whatever we were doing. They wanted to get the answers right. They wanted to come to class. They didn't want to leave class. |

Table 1. Middle School Participant.

**Table 2**

| Pre-Study | Mid-Study | Post-Study |
|---|---|---|
| My goal is to be relatively neutral with wanting to see iPad-centered lessons be better than non-iPad teaching. | I was afraid of losing my students quicker than I normally would. The device is a learning tool but it's also a potential distraction. | Technology can be used to improve learning. I think it has to be done intentionally and with a degree of experimentation. |
| There's been significant frustration at our school with SMART products because the school bought everyone SMART boards and people don't know how to use them. | The curriculum itself didn't change— the way I approached it did. Where I could've given a multiple-choice quiz on a hard copy, I could ask that on the iPad. I could get instant results. | Using the iPad has helped me to become a more effective teacher. The device provides instantaneous feedback that you can't achieve by traditional methods. |

Table 2. High School Participant.

## Results

Results indicated a high frequency of responses discussing **instructional philosophy, instructional objectives, technological support, teacher efficacy, and classroom management**. Both the middle school and high school participants showed significant alterations and improvements to their respective pedagogies and efficacy with technology after multiple experiences with and without the devices in their classrooms. Instructors reported initial feelings of caution and reluctance that transformed into confidence and ambition.

## Discussion

| Teachers feel... | | |
|---|---|---|
| **DOUBTFUL** | **FEARFUL** | **HOPEFUL** |
| when technology doesn't work properly. | without proper training. | for the future. |
| *When planning a successful mobile device program, school systems should provide teachers with adequate technological support in addition to a strong wifi network.* | *Each instructor recognized that there is a steep learning curve when adopting appropriate apps and digital tools; Schools must offer intentional professional development and ongoing support so that teachers feel equipped and confident.* | *Both teachers were hopeful that a 1:1 iPad program could be used to improve student learning. Rather than restrict students from using mobile devices in classrooms, schools should embrace these digital tools and educate both teachers and students on how to use technology.* |

## Conclusion

### What is needed?

Schools must address critical steps in the mobile device integration process, which include:
1) building a **strong infrastructure** for seamless Wi-Fi connections and
2) designing strategic and ongoing **teacher trainings** to build a successful 1:1 iPad program.

As technology integration becomes increasingly more popular, teachers must acknowledge that their role in the classroom is changing, and with the adoption of mobile devices, like iPads in schools, teachers cannot remain stagnant and rely simply on textbook-based, direct instruction. Instead, they must revisit and revise their teaching philosophies, expose their vulnerability in the classroom knowing that their students could possess more technical knowledge than they do, and work through the uncomfortable stages of learning new tools to add to their pedagogy. The encouragement that this study offers is that students appreciate and will partner with instructors who expose these vulnerabilities, and student learning, engagement, and motivation can be augmented when these technologies are integrated successfully in classrooms.

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