

# Making the Case for Mobile Game Development

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## ABSTRACT

The term “mobile culture” reflects a phenomenal role that mobile devices play in our everyday lives. Accordingly, in the eyes of many current students, computing technology is associated with their mobile phones and gadgets instead of larger desktops that are commonly used in the academic environment. Most of them carry mobile phones with them at all times, and being able to develop and immediately run an application on their phone may offer an experience that is as practical and as close to the real world as it gets. By using mobile computing and, in particular, mobile game development, it may be possible to make course material more relevant to students; this also may show a stronger connection to real-world applications and technology that surround our students.

To better understand the role of mobile culture and mobile phones in the life of contemporary students, we surveyed a group of 251 undergraduates, which included 117 females and 134 males, between 18 and 25 years of age. 100% of respondents said that they have a mobile phone. 49% of males and 47% of females said that they regularly play mobile games; on average they did that on 3.3 days each week. Students were asked to name three different places where they are most likely to play a mobile game. Answers included being at home (41%) with nothing else to do, in class (39%) during a lecture or another boring activity, in some form of transport (16%), at the airport or on a plane, at work (15%) and apparently not working, while waiting (14%) for an appointment (e.g. at a doctor’s office), at school (9%) between classes, and others. We also asked to name three games that students play most frequently on their mobile phones. Out of 72 games that were mentioned, Tetris, Pacman and Solitaire were the three most popular, while over 40 other games were named only once. There was an approximately equal ratio between males and females who play the top three games. All of the top ten mobile games played by our respondents belong to the class of casual games. Such games are typically played in short bursts of time; their rules are simple, and unlike many desktop or console games, they do not require any major time commitment or any special skills. Most notably, many studies indicate that the demographics of mobile gamers are split equally between the two sexes.

Compared to traditional computer games, introduction of mobile game development into Computer Science curricula received relatively little attention. There are very few reports about leveraging the appeal and relative simplicity of mobile game

development to increase student interest in pursuing a degree in computing. Compared to desktop or console game development, mobile games are significantly less complex due to their simplified gameplay, smaller scale, simpler graphics, and other factors. In many ways, it may be easier to adopt mobile game development in the Computer Science curriculum than traditional game development while offering additional motivational benefits for students.

Traditional game development has become a popular motivational tool; however, it is most effective for students who have already advanced down the course pipeline. In contrast, a playable mobile game could be successfully developed even in an introductory Computer Science course and thus provide a satisfying result to students eager to see tangible outcomes of their projects. Mobile computing can give students a sense of instant gratification – they can quickly compile a working graphical application and play the resulting game on their own mobile device and proudly show it off to their friends.

Mobile game development is well positioned to address the challenges of its adoption to the curriculum. Because of a relative simplicity and a smaller scale, a playable mobile game can be developed within reasonable time by many CS students even with limited programming skills. Challenges of developing user interfaces for mobile devices can be a good topic for an in-depth discussion in a human-computer interactions course; overcoming connectivity and security issues could provide a good study framework in a computer networks course; while mobile-specific development issues are a good topic for a software engineering course. Mobile games can help broaden the horizons and motivate many students in introductory computing courses by exposing them to a variety of advanced topics early in the curriculum.

As our survey shows, whether we like it or not, students do play games on their mobile phones and mobile gaming is here to stay. It is up to us, however, to use this situation for the benefit of Computer Science education and turn mobile gaming from a disruptive technology into a motivational tool.

## Categories and Subject Descriptors

K.3.2 [Computers and Education]: Computers and Information Science Education – *Curriculum*; K.8.0 [Personal Computing]: General – *Games*

## General Terms

Design, Experimentation, Human Factors

## Keywords

Mobile games, mobile culture, curriculum, motivation.