



# Making the Case for Mobile Game Development

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## Abstract

Mobile culture refers to an increasingly important role that mobile communication and mobile media play in our everyday lives. Young people are often viewed as the driving force behind the innovation in mobile technology, since they comprise the majority of early adopters and most avid users of mobile gadgets and applications, especially mobile games. Many contemporary college students grew up surrounded by computer games and electronic gadgets and therefore may better relate to mobile technology than to the desktops dominating current academic environment. We make the case for using mobile game development as a motivational context in computing curriculum, which is supported by the results of a large student survey.

## Can mobile computing help?

In the eyes of current college students, there is a significant gap in the way how they use computing technology and how computers are used in the academic environment. High school and college students are very likely to have had a mobile phone or a game console as their first computing device, which may have some far-reaching effects.



Decreased appeal of computing as a field of study and/or a future career is one of the factors causing low enrollments in CS programs. Many existing students choose to change their major after taking a few core CS courses because they perceive course material as dry and having no relevance to real world applications. In order for CS programs to stay relevant to students' everyday lives, they must see that the academic model is evolving with the rest of the world. Using mobile devices as a part of the coursework may help portray the program and its faculty as more relevant and up to date. Since the vast majority of current students carry mobile phones with them at all times, 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. Using mobile computing and mobile game development can make course material more relevant to students and show a stronger connection with real-world applications and technology.

## Mobile culture

Mobile culture is defined by an increasingly important role that mobile communication and mobile media play in our everyday lives ranging from personal interaction to social networking, from popular culture to politics. Special terms and words have emerged to refer to mobile phones, e.g. *keitai* (something you carry with you, Japanese) and *kännykkä* (an extension of the hand, Finnish). This demonstrates their prominent position in many cultures, especially those with high saturation of mobile technology.

## Mobiles are everywhere

Wide availability of camera phones enables many eyewitnesses of breaking news to upload pictures and videos of events as they happen. In many cases, live footage shot on a mobile phone by a bystander may become the only documental evidence of an important event, which is later broadcast on television, posted on the Internet, and discussed in blogs.



**jkru**  
There's a plane in the Hudson. I'm on the ferry going to pick up the people. Crazy.

January 15, 2009  
US Airways Flight 1549

## Media convergence

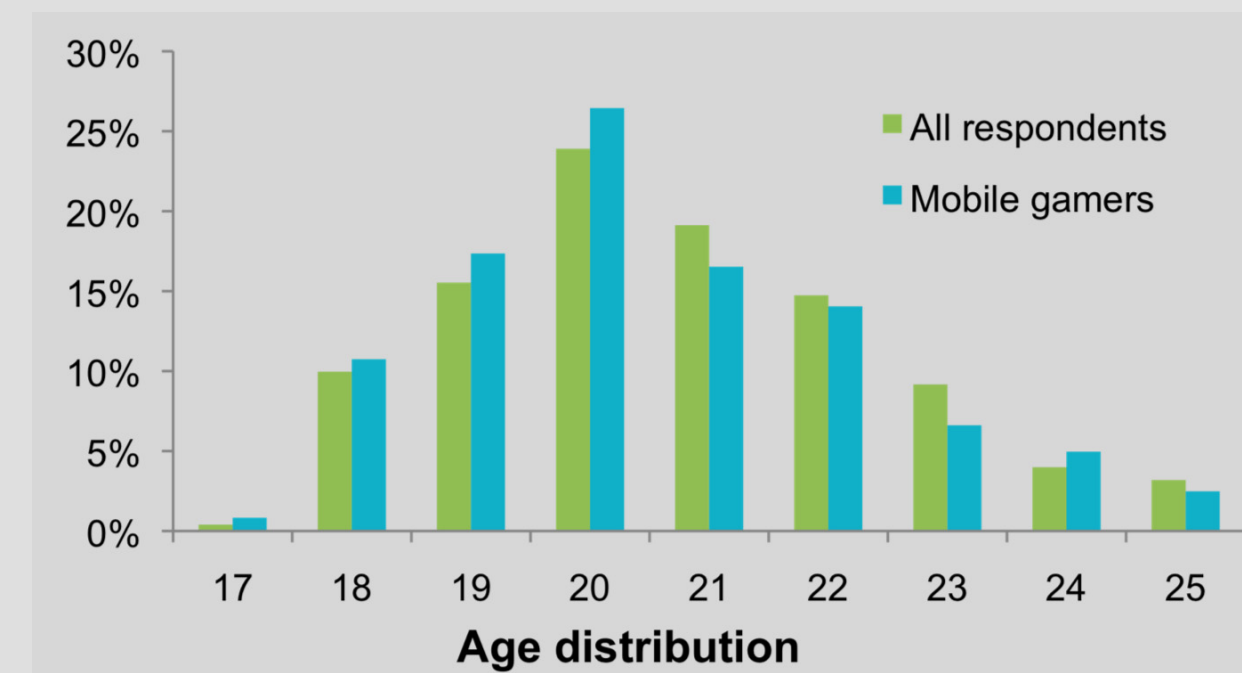
Technical convergence implies that due to its digital nature, the same content may be available and accessible via different types of devices. For example, using a mobile phone or a PC, one can watch TV or read a newspaper.

Content convergence implies that similar content is offered in different types of media and via different delivery channels. For example, content related to the latest Indiana Jones sequel and its characters may be pushed via many media and non-media channels simultaneously, which may include themed web sites with videos, images, wallpapers, and ringtones, as well as posters, towels, and toys in Burger King happy meals.

Both types of media convergence are most effectively aimed at young consumers and exploit their affinity to mobile devices. As a result, not only popular culture is influenced by consumer mobility, but also that popular culture itself helps reinforce the role of mobile devices in the life of modern young people.

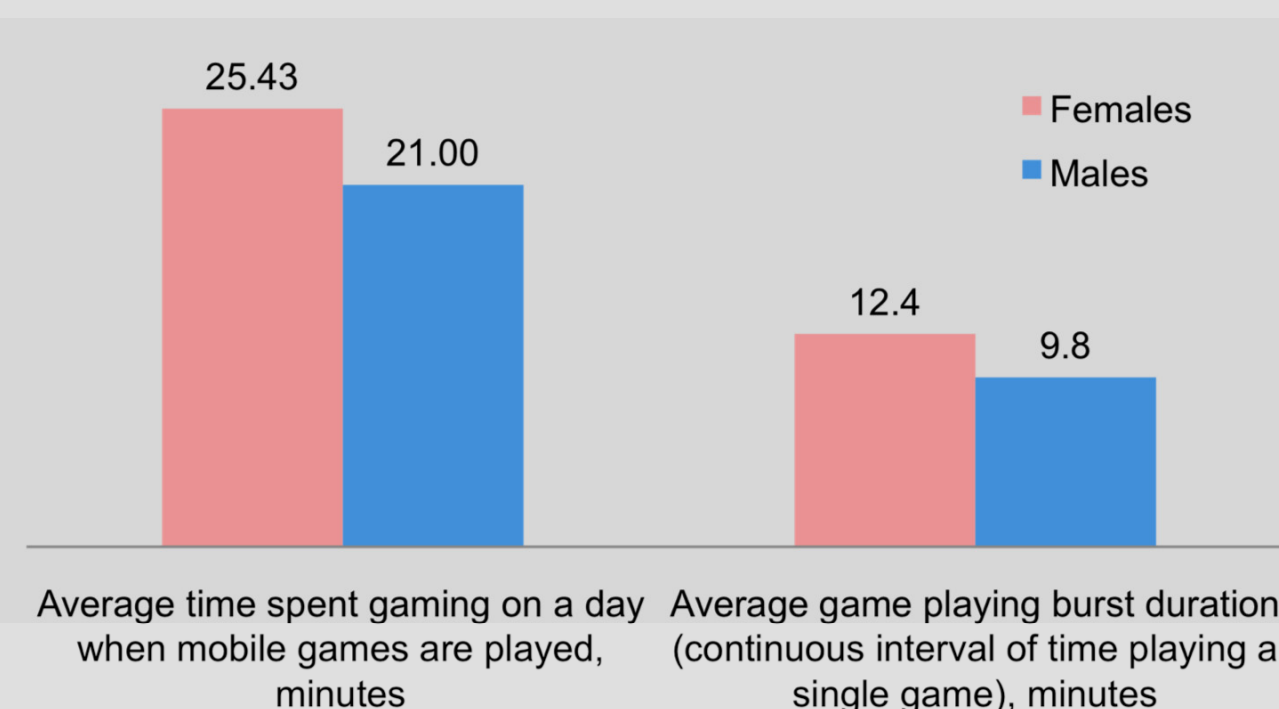
## What do the students say?

Survey of 251 undergraduates  
117 females and 134 males  
November/December 2008



## They play mobile games!

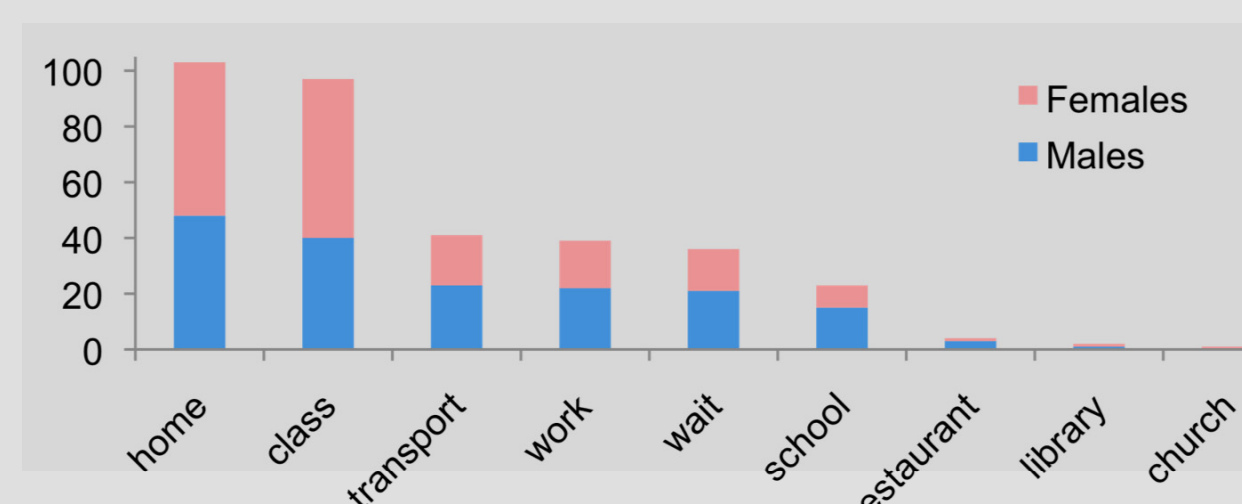
Nearly the same percentage of males and females regularly play mobile games: 66 (49%) males and 55 (47%) females. Both males and females play mobile games on average 3.3 days a week, but females spend more time doing so.



## Where do they play mobile games?

Respondents were asked to name three different places where they are most likely to play a mobile game. A total of ten types of places were mentioned. These include:

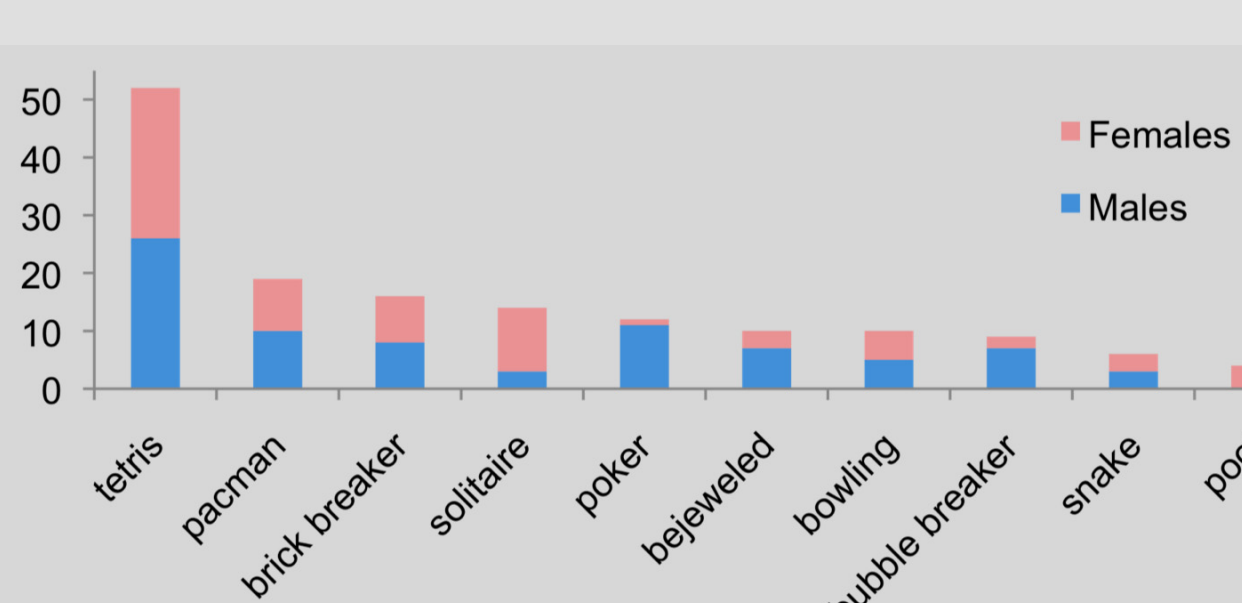
- at *home* with nothing else to do;
- in *class* during a lecture or another boring activity;
- in some form of *transport* (riding a bus or a train, at the airport or on a plane);
- at *work* (and apparently not working);
- while *waiting* for an appointment (e.g. at a doctor's office);
- at *school* between classes;
- others.



## What mobile games do they play?

Respondents were asked to name three games that they play most frequently on their mobile phones.

- 72 games were mentioned;
- over 40 games were named only once;
- all top 10 games are *casual* games.



## How to take advantage of mobile games?

ACM Computing Curriculum recognizes the role of mobile computing in today's world as well as in the CS discipline.

Mobile computing and game development can provide a relevant and a personally meaningful learning context which allows students to use their mobile gadgets.

## Benefits of mobile game development

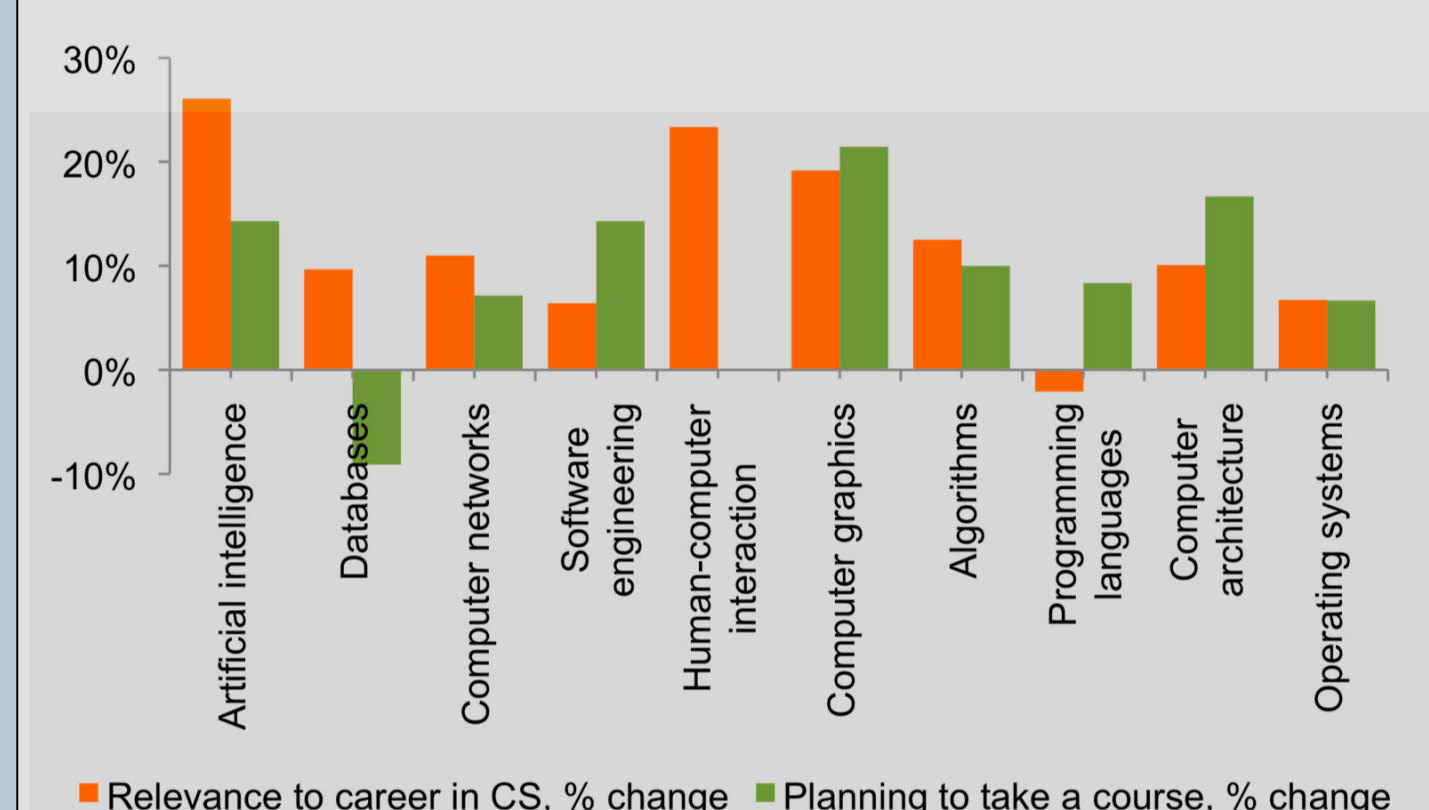
Compared to traditional computer games, introduction of mobile game development into the curriculum received relatively little attention. Compared to desktop or console game development, mobile games are significantly less complex due to their simplified gameplay, smaller scale, simpler graphics, and other factors. In many ways, it may be easier to adopt mobile game development in the CS curriculum than traditional game development while offering additional motivational benefits for students:

- instant gratification;
- low learning curve;
- relevance to the real world;
- cost effectiveness;
- cross-gender appeal;
- appeal of mobile gadgetry;
- neutralization of disruptiveness.

## Real results of mobile game development

Latest offering of freshman Mobile Game development course to 18 students in Spring 2009. Using several projects, students were gently introduced to several advanced CS topics.

A survey of student opinions was administered at the beginning and at the conclusion of the course. Both times students were asked to use the scale of 1 to 10 to rate the degree to which different CS areas are relevant to a successful career in computing. Each time, students were also asked about their plans to take a course in the corresponding area.



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