Computer Games in the Developing World:
The Value of Non-Instrumental Engagement with ICTs, or Taking Play Seriously

Games lead to learning computer skills and that, indeed, games are played by people throughout the world. Games are a pivotal piece of a country's computerization, how its population gains information and communication technology (ICT) related skills, and how ICTs themselves begin to diffuse in developing world contexts.

Methods: Ethnographic methods combined with .... Survey methods

- Fieldwork conducted by the first author during a six-month residence in the region in 2000.

- Fieldwork data collection methods follow standard ethnographic format for participant-observation and include field notes and photography.

- Qualitative data drawn from multiple separate studies conducted in 2005 and 2006 including interviews with Internet users, interviews with mobile phone users, interviews with computer gamers, and a design ethnography

- Yearly survey of four countries in Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan, 2006, 2007, 2008

- 1000 respondents in each of these four countries age 15 and older = total of 12,000 respondents

- Survey sample was based on census information for age, gender, ethnicity, and geographic location as released by each country's government.
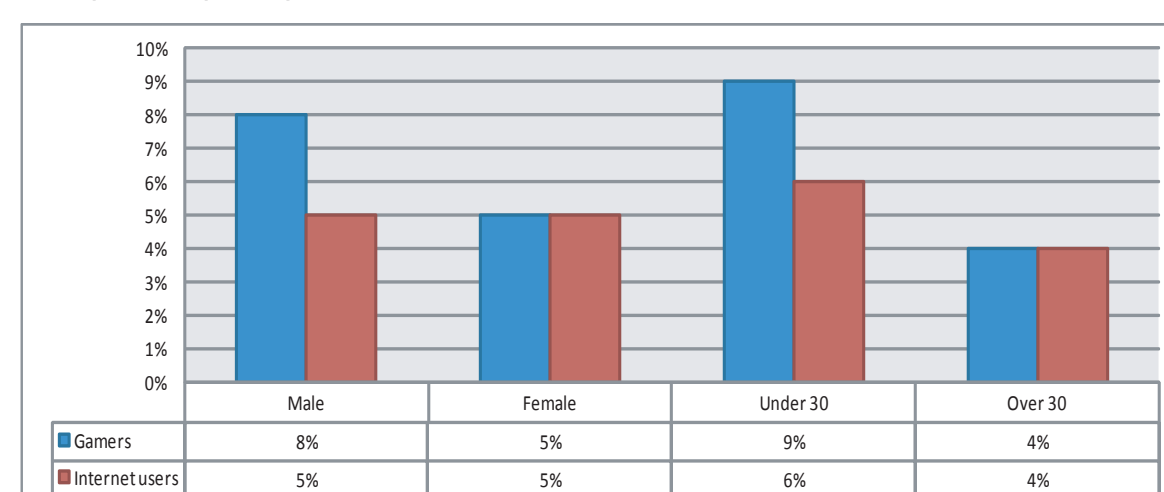
Findings:

Games as a significant part of an ICT ecology and potential site of user's first "touch" of a computer
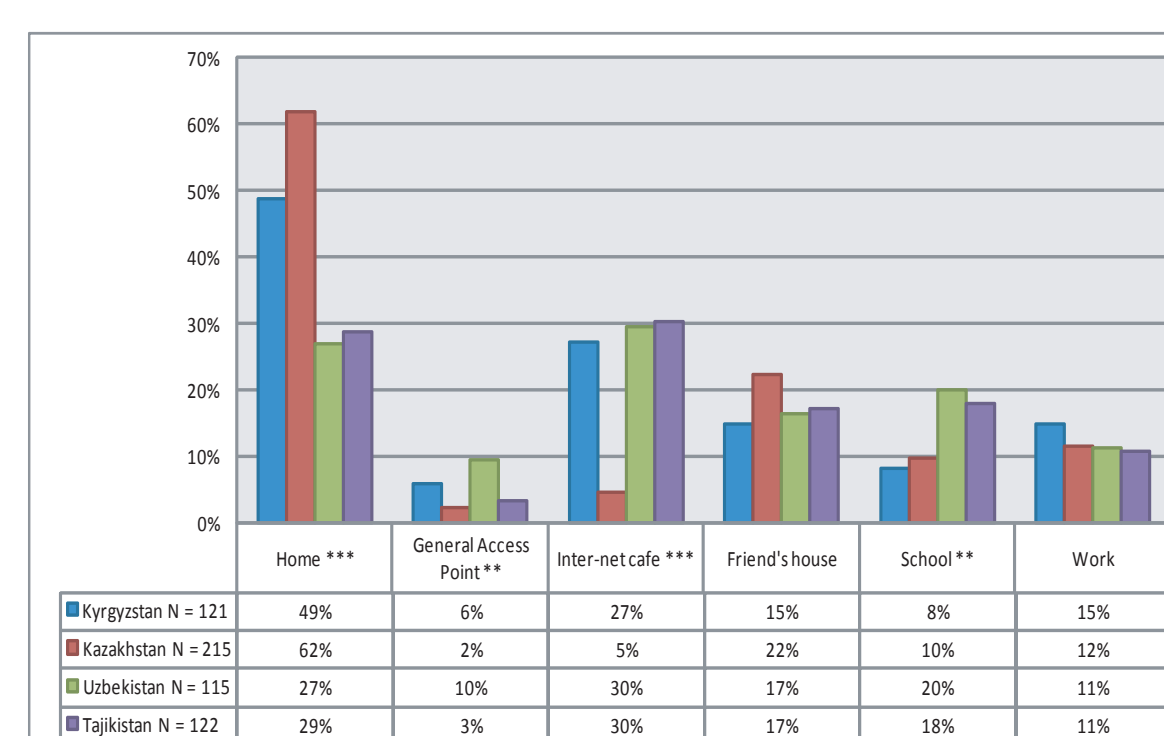
Often dismissed as irrelevant to capacity-building projects, overlooked as a measure of a nation's ICT sophistication, and prey to countless stereotypes about users, games are a largely invisible component of the ICT landscape in developing regions.

Setting the stage
While gamers are still more likely to be male and under 30, in our research population, female respondents and those over 30 were as likely to play games as they were to use the Internet.
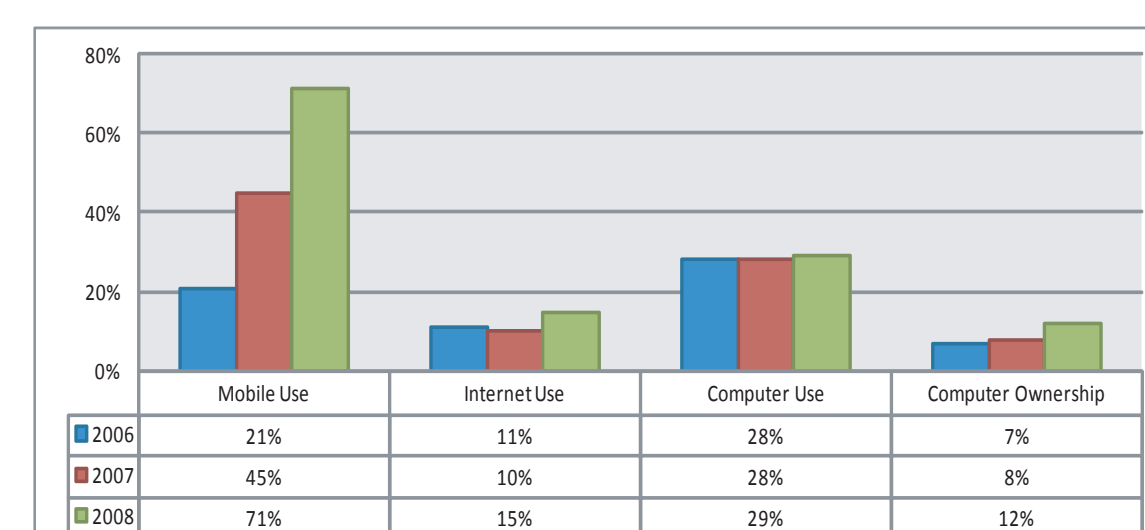

	Male	Female	Under 30	Over 30
Gamers	8%	5%	9%	4%
Internet users	5%	5%	6%	4%

Where people play games is different in each of the four countries:

	Home ***	General Access Point **	Inter-netcafe ***	Friend's house	School **	Work
Kyrgyzstan N = 121	49%	6%	27%	15%	8%	15%
Kazakhstan N = 215	62%	2%	5%	22%	10%	12%
Uzbekistan N = 115	27%	10%	30%	17%	20%	11%
Tajikistan N = 122	29%	3%	30%	17%	18%	11%

*** = p < .001, ** = p < .05

Other ICTs
Games exist in a context of ICT diffusion overall, with Internet growth creeping slowly and mobile use skyrocketing:

	Mobile Use	Internet Use	Computer Use	Computer Ownership
2006	21%	11%	28%	7%
2007	45%	10%	28%	8%
2008	71%	15%	29%	12%

Webmail. Using a basic free webmail application like Yahoo or Hotmail becomes an exercise in patience. To write an email in Yahoo mail, for example, takes about six page loads.

Internet surveillance and censorship. Many Internet cafes had signs posted warning that accessing inappropriate content would result in fines or arrest. Inappropriate content was rarely if ever defined. But what constituted inappropriate political content could change; a website with acceptable regional news one day might be overly critical of the president the next and suddenly be on the banned list.

A Tale of Two Tajik Internet Cafes

Plazma is an Internet café located in the center of Dushanbe, the capitol of Tajikistan.

There is a central room with ten computers with Internet access arranged on long tables and – very welcome in the Tajik summer – air conditioning.

On the same floor, but in a separate glass enclosed room is the gaming center with 28 game stations preloaded with games and equipped with high quality headsets.

The sign reads "All Our Life is a Game"

Gigant 2 is located on the edge of Dushanbe in a residential neighborhood.

There are 24 stations in the main room of Gigant. There is also a back room that is attached to the main room and separated only spatially. There are six stations in the back which serves as a VIP room and includes two couches and a large floor fan.

Gigant has a three tiered pricing structure, similar but not identical to Plazma.
- Games and "online" costs one somani per hour
- Internet costs 2.5 somani per hour.

The distinction between online and Internet is something that appears with some regularity in developing regions - downplaying open ended web browsing.

Games can be a gateway to motivation for innovation

Many games encourage users to become active participants in a digital environment, and the enthusiasm many players feel for games can motivate them to learn new technical skills in order to facilitate their playing.

World of Warstan. Blizzard's World of Warcraft (WoW) is a subscription-based game that requires Internet access. It is a massively-multiplayer game that has thousands of players on each server.
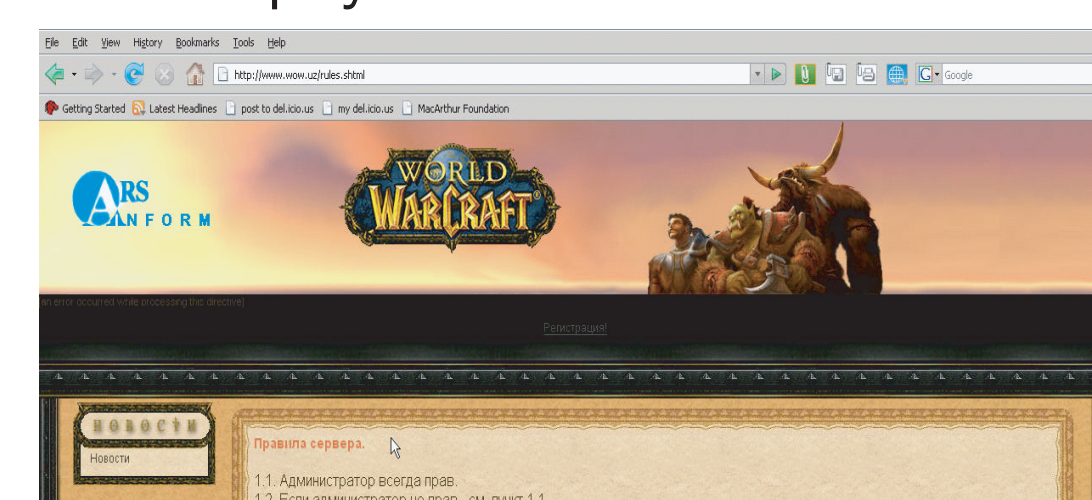
For about UDS$12-13 per month, players get unlimited hours online with both WoW and ICQ. All other Internet activity is metered by kilobyte, and MSN and Yahoo Messenger are metered as well.

Games as motivation to gain technical expertise. In Bishkek, Kyrgyzstan:
A group of, neighbors, residents of the same large apartment building, discovered that they all liked to play the same games, but they preferred to play at home because they saw it as cheaper and they had "more freedom." So they ran a LAN down the outside of their nine story Soviet style flat, connecting eight neighbors together so they could play together.

One of eight Kyrgyz gamers interviewed in 2006:

Yuri echoed the pattern of games as a motivator for learning more about technology.

He started playing games in the 4th grade, and was introduced to games by playing Flight Sim at a friend's house, long before computers had been introduced to his public school.

After Flight Sim, he began going to computer clubs where he fell into the world of Counter-strike. Now 19, he plays games over a LAN only in the clubs because, as he says, Internet is too expensive.

After playing for years, he gained a variety of computer-related skills and now works as an administrator at a game café.

Less advantaged users more likely to gain introduction to ICTS through games

Games offer tangible assistance in overcoming barriers to entry for novice users by allowing users with less education and English language skill to gain experience with ICTs.

How do Internet users and gamers differ?
Two direct logistic regression analyses were performed using SPSS to predict gaming and Internet use outcome from eight predictors:
(1) age
(2) gender
(3) years of schooling
(4) living in a rural or urban environment
(5) mobile phone use
(6) ability to speak and read English
(7) ability to speak and read Russian
(8) socio-economic status reported on a scale of one to three
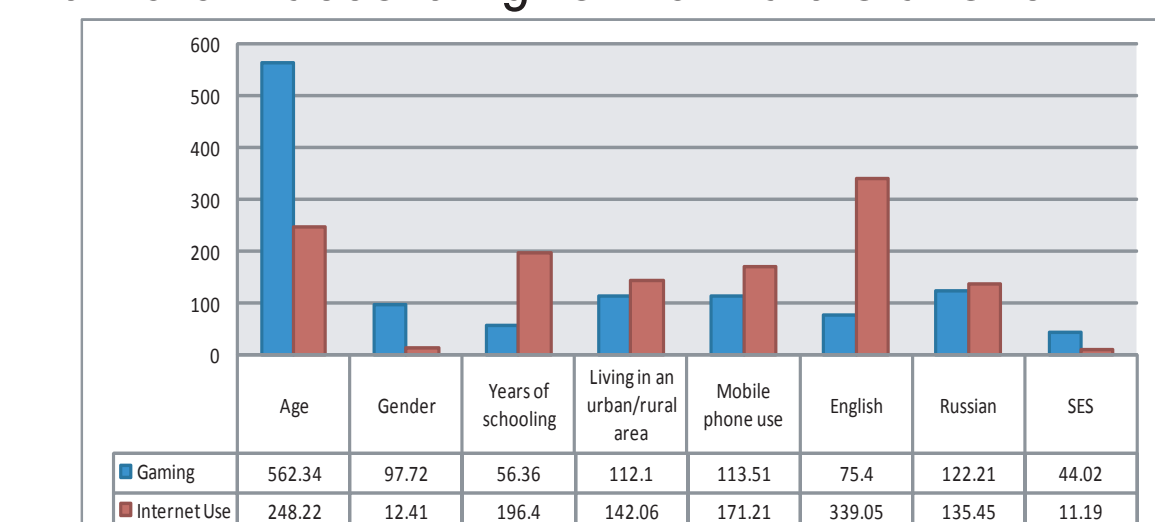
Gamers: the set of predictors reliably distinguishes between individuals who play games and those who do not. The approximate variance in predicting game playing accounted for by the set of predictors is **32%.**

Internet users: the set of predictors reliably distinguishes between individuals who use the Internet and those who do not. Internet use accounted for by the set of predictors is a striking **45%.**

While the sets of predictors are the same, there are notable differences:

- The set of variables does a much better job at predicting Internet use than game players, indicating there is more homogeneity in the Internet using population

- The importance of individual variables is different according to the Wald statistic:

	Age	Gender	Years of schooling	Living in an urban/rural area	Mobile phone use	English	Russian	SES
Gaming	562.34	97.72	56.36	112.1	113.51	75.4	122.21	44.02
Internet Use	248.22	12.41	196.4	142.06	171.21	339.05	135.45	11.19

- Whereas the ability to speak English is very important to predicting Internet use, it was less influential on game playing.

- Education level is very important to predicting Internet use, but not as much for computer gaming.

- Age is a stronger predictor of gaming

Together, these items suggest that entry into the game playing realm is more accessible to a different segment of the population.

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