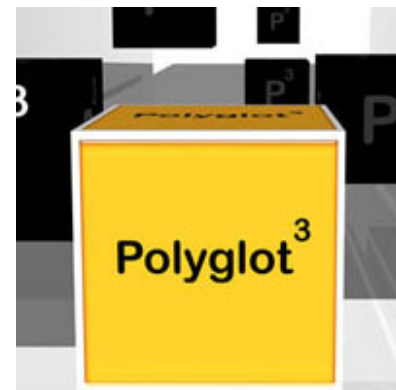# Inside the IGF 2009: Sneak Peek at Polyglot Cubed

By GameCareerGuide.com staff [12.12.08]

The 2009 Independent Games Festival celebrates independent and student-made video games. In this series, GameCareerGuide is sneaking a peek at some of the games submitted to the student competition. Here, MFA student Lindsay Grace from University of Illinois, Chicago, discusses her educational game *Polyglot Cubed*, which facilitates language learning.

Game title: *Polyglot Cubed*

School/Affiliation: University of Illinois, Chicago

Game description: *Polyglot Cubed* is a puzzle game for learning languages. The highly modular system was designed at the University of Illinois, Chicago. It is designed to aid in the retention of listening vocabulary. Polyglot is a user modifiable environment created to facilitate learning a variety of languages with minimal training.

The game is designed around six rooms of floating, cubicle tiles. Each tile is assigned a foreign language word, and a pictographic representation of that word. The cubes are clustered by topic, usage, or form of speech to encourage contextual recognition and aid visual memory. The player must match the spoken word (by selecting the bottom of the screen) with the cube that corresponds to it. Move through various rooms (click and hold the edges or use arrows) to learn specific vocabulary.

Polyglot Cubed versions include a dialect of Portuguese and Mandarin Chinese. The game is meant to be a language game any age would not be embarrassed to play.

Polyglot Cubed is designed for use on a tablet PC, but it may be played with a mouse and keyboard. Add your own images and vocabulary using the mod tool or simply replace the files in the programs installation directory.

Q: Tell us how Polyglot Cubed came to be.

A: *Polyglot* was originally designed as a mission-based adventure game called Bangkok Taxi. I wrote a game design document and prototyped a game where the player drove a taxi and needed to follow the passenger's directions as they were spoken in Thai. The prototype proved that the idea wouldn't work well. I discovered that it is too much stress to require someone to translate a foreign language and drive a car at the same time. I really should have seen that coming.

I was about ready to abandon the project when I realized that casual gameplay was the secret. Even the most committed language learner doesn't want to spend hours in translations, so I designed a game that really emphasized a few minutes of simple gameplay.

After a few iterations, I came upon the idea of breaking the experience into rooms and really compartmentalizing the language goals. The rest of the work, like designing a sign system for the pictographs, just involved lots of good old-fashioned creativity and research.

Q: What was your goal in developing the game?

A: Like most people, I'm extremely busy. The project was my way of blending several goals. I'm a full-time MFA student, so I needed a semester-long independent research project. I also teach games, so I wanted to get in some design and development practice. Lastly, I've been trying to teach myself Mandarin Chinese and Portuguese. The project just blended all of my needs and passions.

Q: What do you think is the game's greatest asset? What sets it apart from other games in the IGF?

A: The game's greatest asset is its design. In my research I found many educational games set their sights on primary and secondary school students. They also tend to focus on one very specific skill, like learning numbers in Spanish.

Despite precedent, I tried to design a game for a wide audience and provide a very general set of language skills. As a matching game, it's pretty easy to understand and could offer that sense of universal appeal that more complicated games may miss.

In technical terms, the game is also extensible. If you want to use the *Polyglot* game mechanic to learn medical terms or even Klingon, you can just build your own game. I provide a program for modifying the game with your own content.
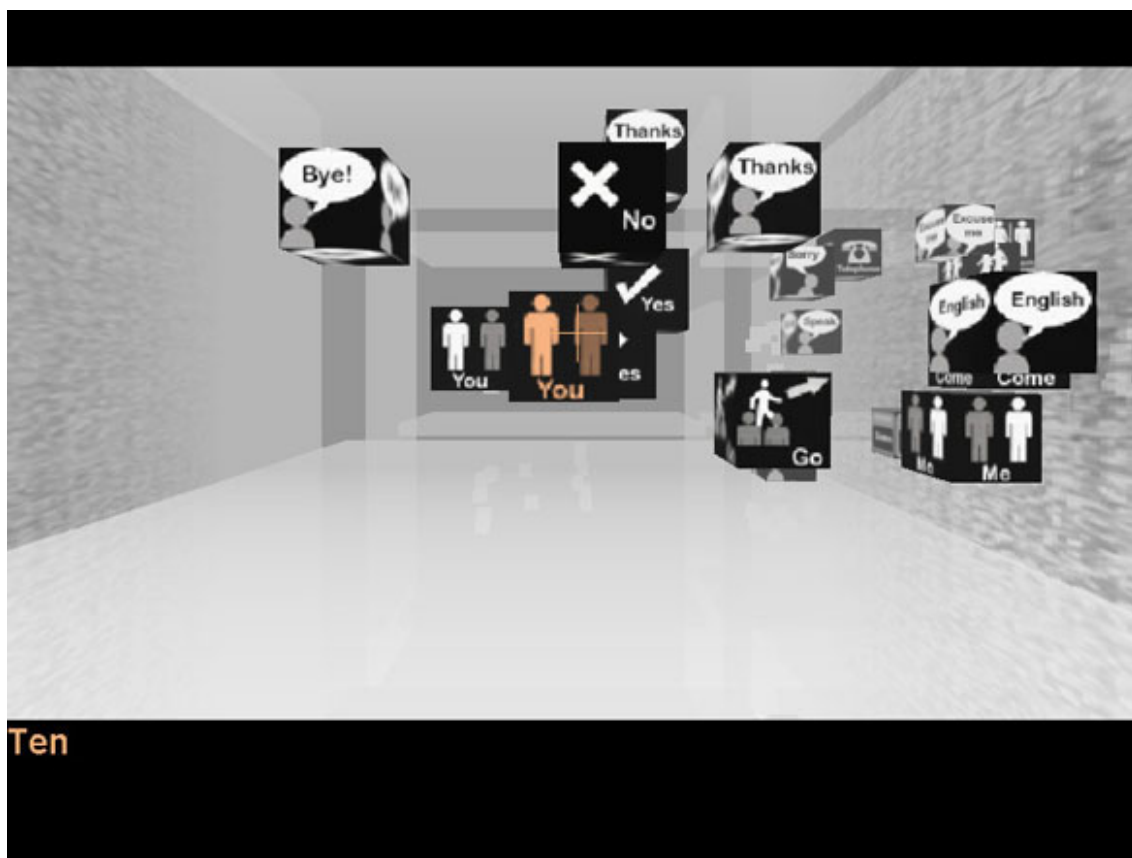
I've been following the IGF for years and I just feel there aren't enough attempts at education. It seems like such a missed

opportunity. When I was younger I spent more time learning about the world of *Zelda* than I did on homework. Interestingly I was still reading, but I was reading game guides, because they helped me get better at something I wanted to do: succeed in game.

IGF is such a great resource. Whenever I run into someone who says they don't like playing games, I say, "But wait!" and bring out a gem from past competitions. The best games of the IGF set themselves apart by critically challenging gameplay standards. *Polyglot Cubed* tries to pursue a challenge to educational game design by shedding some of the standard assumptions about meaningful play.

Polyglot Cubed also endeavors for simplicity. That's one of the reasons it's designed for touch displays. In its next iteration, I really want to put it on an iPhone or Google Android. That suits the design best. I also really like the idea of having multiple people in front of one large multi-touch screen, competing to get the next Polyglot word.

I haven't seen many IGF games that are designed to be modded either. I like the idea of a kind of open source game environment.

Q: What drew you to use a game to teach language acquisition?

A: Honestly, I learned my first (and only) German word from *Wolfenstein 3D*: *Achtung*!

I believe that games are tremendous teaching tools. It's amazing how much people know about the fictive worlds of some games. In complex games we learn about the geography of the game world, the characters, their backstories, and a whole set of fictions. I realized that in some ways, as a game player, you are routinely acquiring new words just to maintain efficacy in the game world.

I figured, why not put all that learning to a use.

Q: What games (or non-game things) influenced this game? How or why?

A: Funny. Originally it was supposed to be a *Grand Theft Auto II* for language learning. It's a good thing that didn't last; I really could have wrecked a classic (see Bangkok Taxi above).

Instead, the game is a response to tools like Rosetta Stone, Chinese Pod and the study tools that come with college textbooks. I also poured through a bunch of "learn language X in 30 days" books and thumbed through linguistics resources to determine the ideal set of 250 words an English speaker would want to say. The goal was to create something that was more interesting than each of those resources on its own.

The older I get, the more I move toward casual play. Games I can start and stop on flights or squeeze in at lunch just fit my life better. Games with rhythmic gameplay and a little brain power, like *Crayon Physics*, are probably the biggest influence.

I'd also say all those little puzzles buried in games like *Onimusha* influenced the design.

Q: What was the most difficult part of developing Polyglot Cubed?

A: I was surprised to find that the programming was the easy part. Achieving a balance between educational content and entertainment value was tough. It's also not easy trying to come up with a 200 word sign system when you hit words like take, how, use, and was.

Q: Tell us one interesting thing that you learned in developing the game.

A: I can't stress how hard it is to balance the meaningful with the fun. Every new idea that would offer some cool fun feature then got in the way of some educational goal.

I spoke with people who offered perspectives from fine art, education, linguistics, psychology, and game design. As soon as I met the fine art needs, I destroyed the psychology needs; as soon as I got the educational structure I demolished the fun.

I really appreciate how many little decisions have to be met when taking on a wide audience. The game, for example, doesn't use much color to facilitate universal accessibility and limit the amount of distraction. Color, on the other hand, is one of the few key elements of visual design.

I learned that sometimes the wider the audience, the narrower the design.

Q: Since making Polyglot Cubed, have your opinions or assumptions about game development changed in any way? If so, how and what were they before?

A: I didn't think it before, but simplicity is sometimes born from a lot of hard work by the developer. There are so many little decisions about content, size, shape, color, movement, extensibility, etc., that go into the development of a game.

Polyglot Cubed Development Team
Lindsay Grace, game designer, developer and artist

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