

Project 1 — Process

Education: *The Great Equalizer*

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INTERACTION DESIGN I

choosing a design theme

» INITIAL DESIGN PROBLEM

Follow a cognitive design process leading to discovery and explanation that will affect future decision-making. Create a structured discussion of what was discovered in the data in which key findings are highlighted and extraneous information is removed.

Follow a general principle of mapping chosen metrics within the data into a visual representation – arranged spatially, with visual parameters – through reduction. Give rise to new meaning by organizing raw data into meaningful schemas.

choosing a design theme

» PROJECT GOALS

For my project, I created a set of interactive visualizations that harness existing data concerning global trends in population growth, lifespan, maternity, and education, in order to draw meaningful correlations.

Specifically, my project explores to what degree increased educational opportunities for women result in later childbearing, fewer children, and longer life expectancies for family members. By providing users with intuitive controls for showing and hiding data, I've allowed users to more easily draw visual comparisons between six developed countries, six developing countries, and six underdeveloped countries.

Given the large amount of data involved, I wanted to design a tool that would allow the user to be **selective** about which countries and indicators are compared at once. My project required a set of **interface controls** through which users could update **dynamically-generated visualizations** powered by the D3 JavaScript visualization library.

I began the project by first defining a **design statement**, and then proceeded to locate and collect relevant and trustworthy data from the Internet to power my visualization.

choosing a design theme

» INITIAL DESIGN STATEMENT

At the Goldman Sachs Technology and Internet Conference in February, 2012, Apple's CEO Tim Cook led a keynote presentation in which he stated the following:

*"We believe that education is the **great equalizer**, and that if people are provided with the skills and knowledge, they can **improve their lives**."*

Today, there are nearly 150 countries* that are still considered to be 'underdeveloped' or 'developing', in which native citizens experience a lower quality of life as a direct result of fewer economic and educational opportunities. Indicators for categorizing such countries include agriculture, manufacturing, technology, education, and healthcare.

In developing (or third world) countries, the prevalence of (a) high birth rates, (b) low age averages for childbearing, and (c) shorter lifespans, can be associated with low living standards, low educational levels and low social status for women.

**According to the International Monetary Fund's 2012 World Economic Outlook Report*

locating project data

» DATA SOURCES

I collected data from publically available datasets provided by the United Nations Department of Economic and Social Affairs (esa.un.org), as well as by the UNESCO Institute for Statistics (uis.unesco.org) Data Centre. This data included indicators in the following development areas:

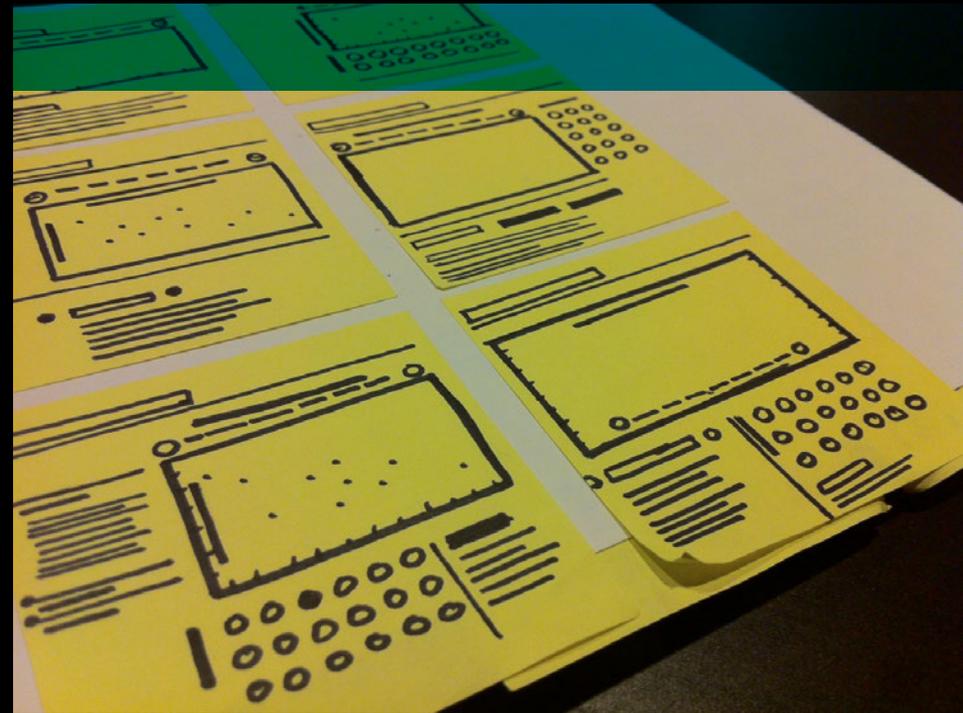
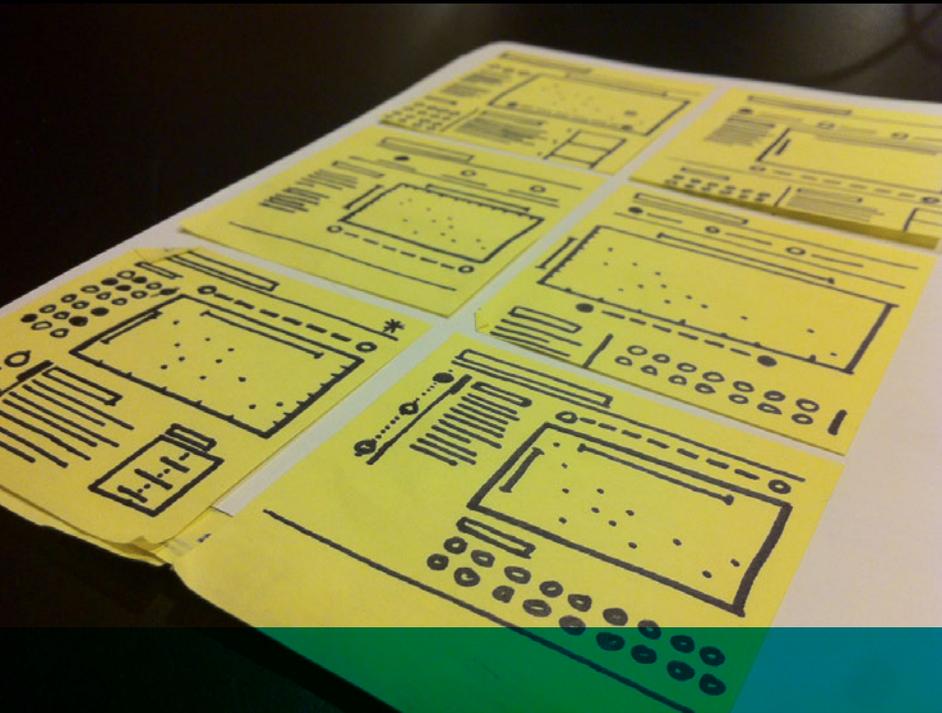
- » Population and Growth Rates
- » Age and Lifespan
- » Births and Fertility
- » Education and Literacy

While most datasets included statistics for the last six decades, I chose to limit my project to only the data collected within the last thirty-five years, in order to maintain focus and accuracy.

Due to the large size of my collective dataset (which included data written in multiple file types), I had to spend a significant amount of time programming scripts to automate the process of collecting and organizing my target data into browser-friendly JSON files. Automation scripts were written in Python.

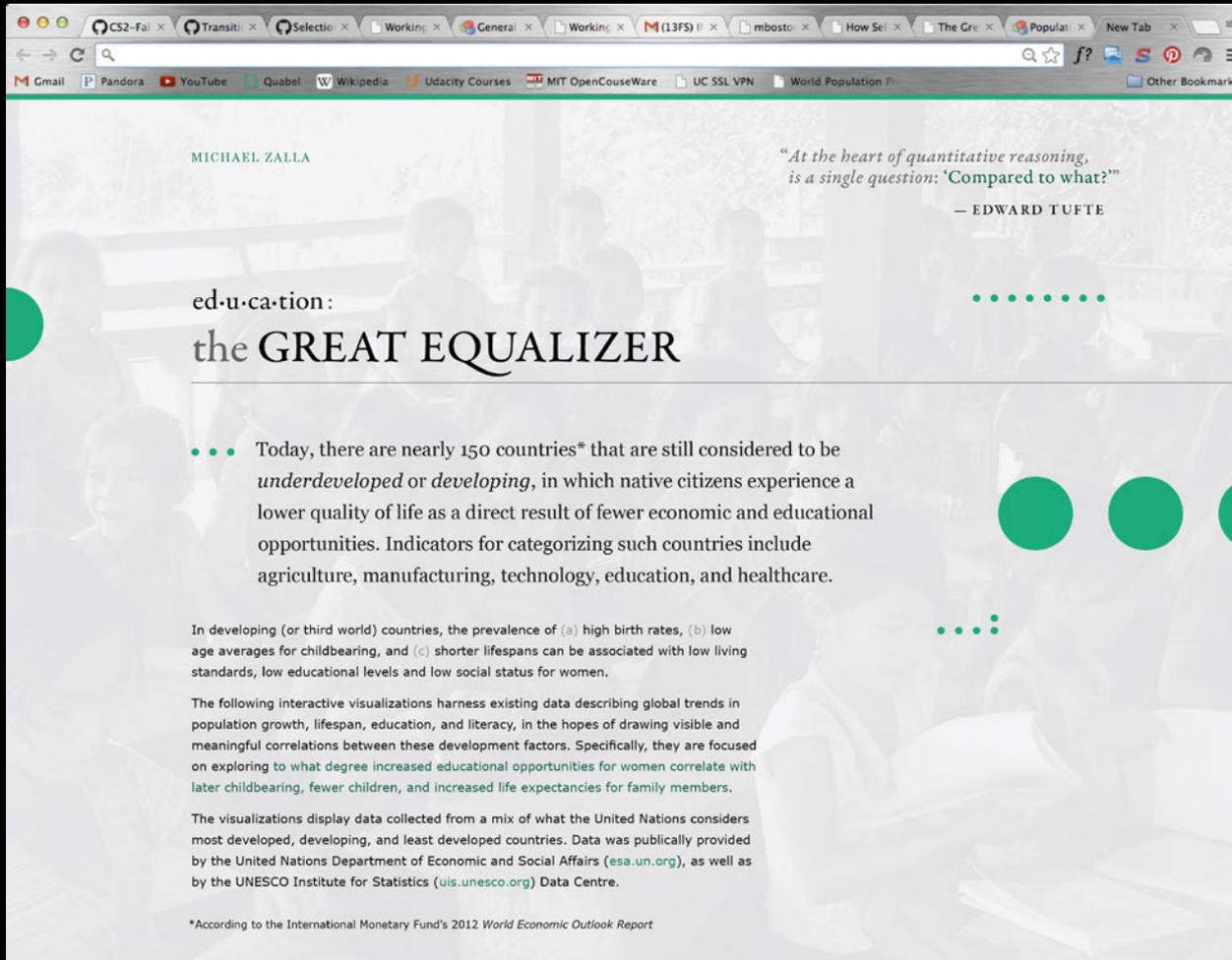
finding a visual direction

» EARLY INTERFACE SKETCHES



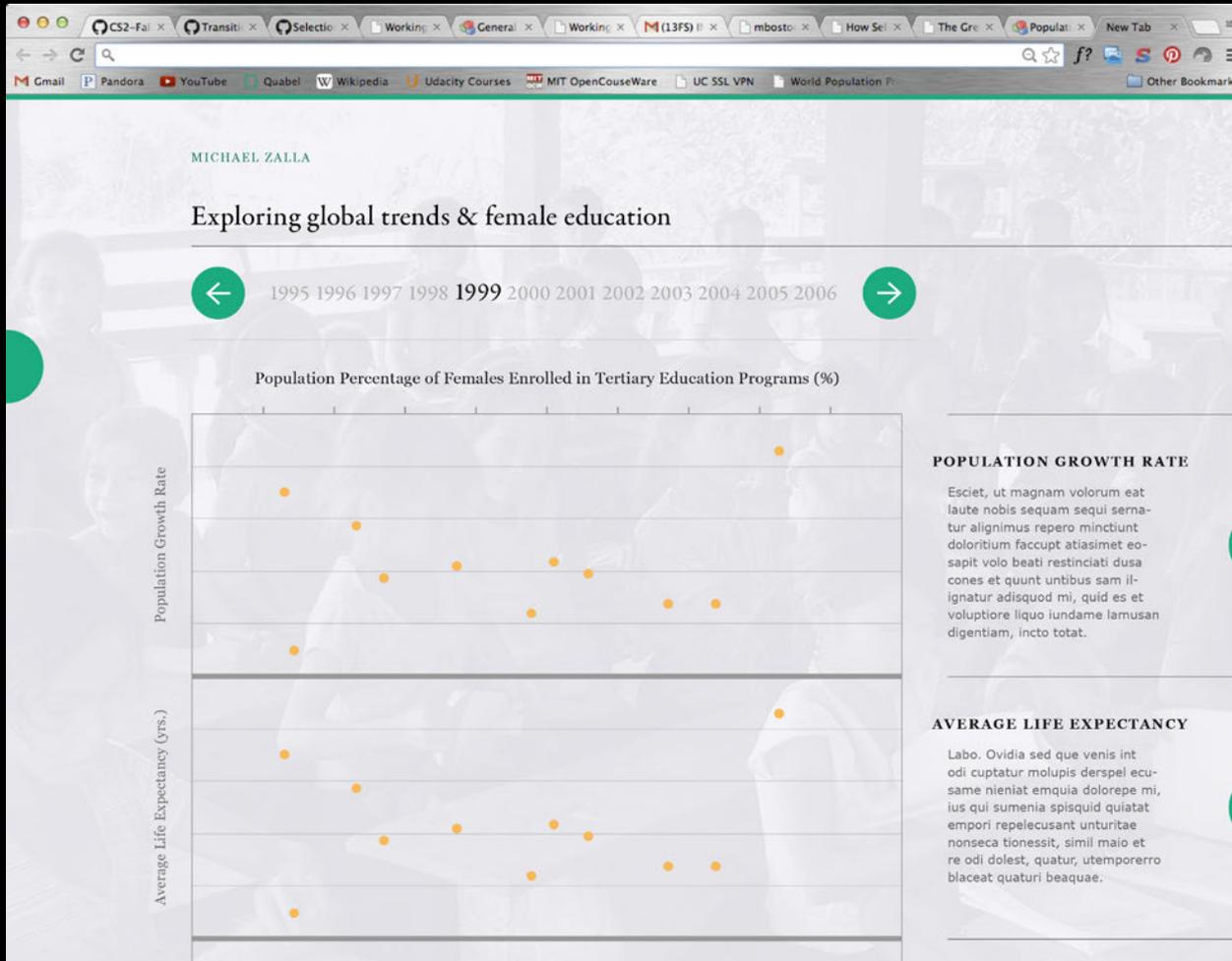
finding a visual direction

» ADVANCED DIGITAL MOCKUPS



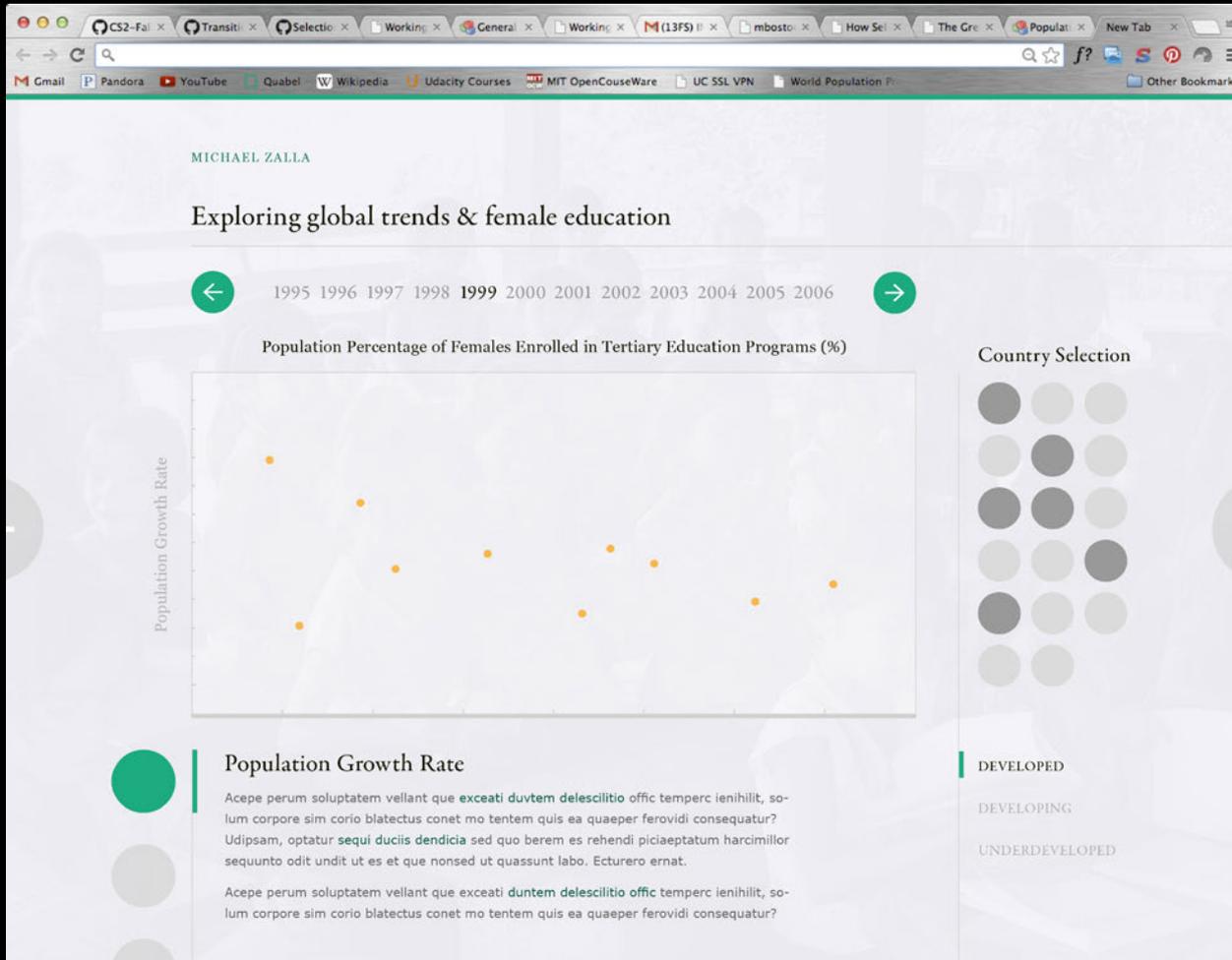
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» ADVANCED DIGITAL MOCKUPS



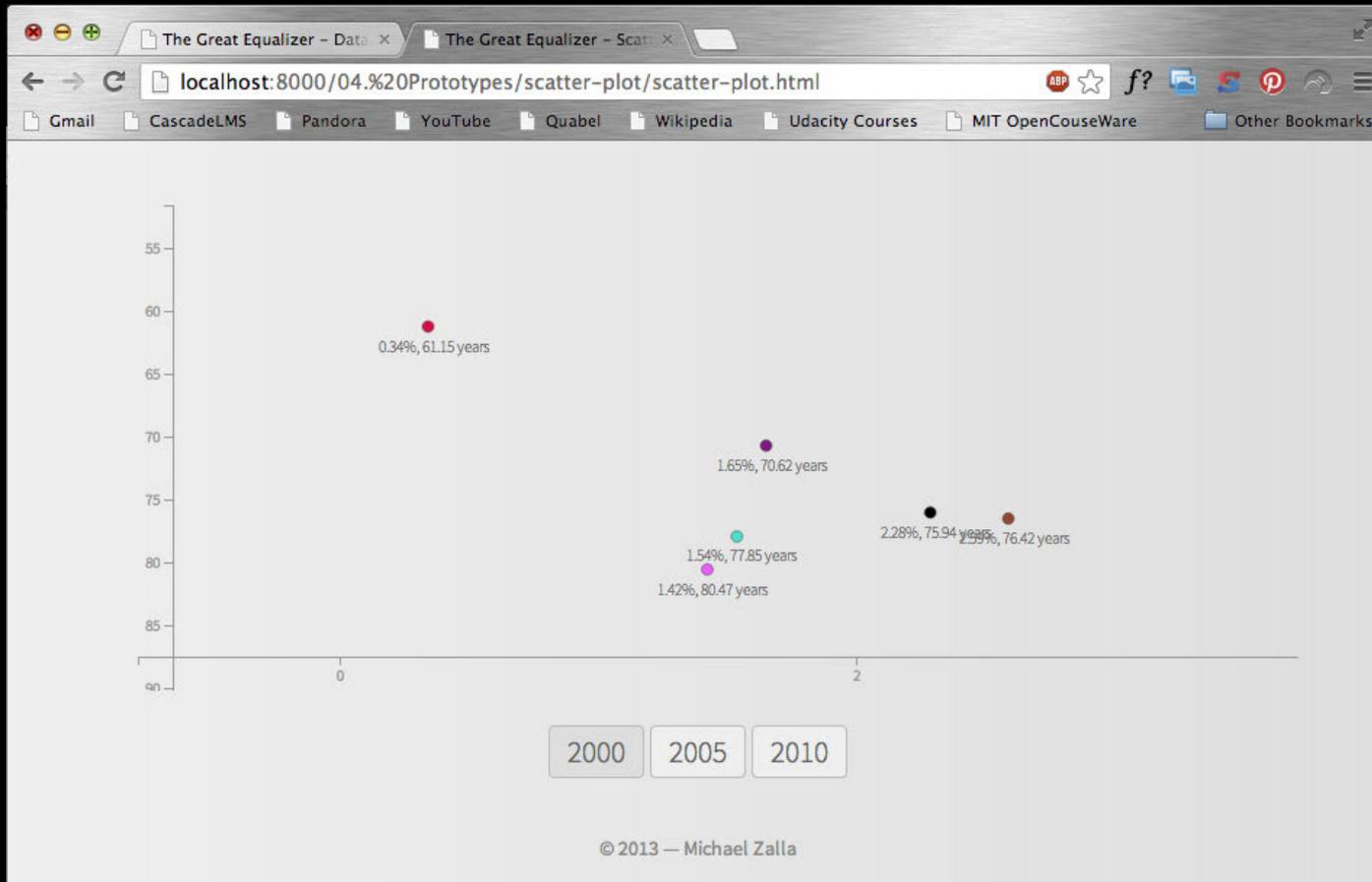
finding a visual direction

» ADVANCED DIGITAL MOCKUPS (REVISION)



building the visualization

» EARLY VISUALIZATION PROTOTYPE



building the visualization

» WEB TYPOGRAPHY PROTOTYPE

GREAT BIG TITLE

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"This could be an inspiring quote from somebody famous. Maybe it talks about how, when women have access to higher education, it ultimately results in them having fewer children, at an older age."

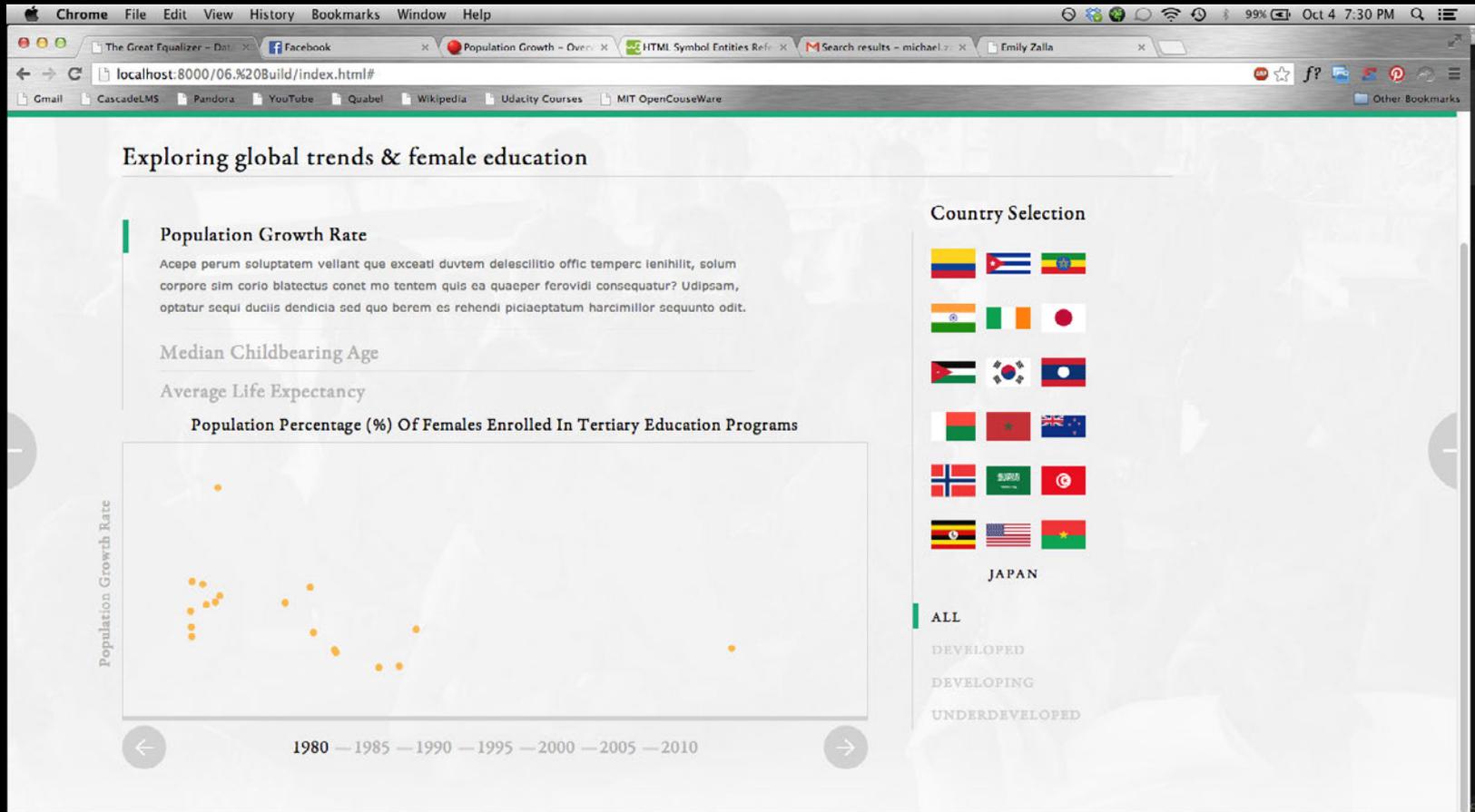
— Somebody Famous (*From A Very Famous Book*)

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building the visualization

» PRE-CRITIQUE PROJECT BUILD



building the visualization

» FINAL PROJECT BUILD

ed·u·ca·tion:

GREAT EQUALIZER

Today, there are nearly 150 countries* that are still considered to be *underdeveloped* or *developing*, in which citizens experience a lower quality of life as a direct result of fewer economic and educational opportunities. Indicators for categorizing such countries include agriculture, technology, education, and healthcare.

In developing (or third world) countries, the prevalence of (a) high birth rates, (b) low age averages for childbearing, and (c) shorter lifespans can be associated with low living standards, low educational levels and low social status for women.

The following interactive visualization harnesses existing data describing global trends in population growth, lifespan, education, and literacy, in the hopes of drawing visible and meaningful correlations between these development factors. Specifically, they are focused on exploring to *what degree increased educational opportunities for women correlate with later childbearing, fewer children, and increased life expectancies for family members.*

The visualizations display data collected from a mix of what the United Nations considers most developed, developing, and least developed countries. Data was publically provided by the United Nations Department of Economic and Social Affairs (esa.un.org), as well as by the UNESCO Institute for Statistics (uis.unesco.org) Data Centre.

*According to the International Monetary Fund's 2012 World Economic Outlook Report

building the visualization

» FINAL PROJECT BUILD

Exploring global trends & female education

Population Growth Rate

Percentage Of Early Births

Average Life Expectancy

Expected average lifetime of a citizen born in that year. Countries that suffer from famine, war, or poor health exhibit lower expectancies.



Country Selection



MADAGASCAR

ALL

DEVELOPED

DEVELOPING

UNDERDEVELOPED

1980 — 1985 — 1990 — 1995 — 2000 — 2005 — 2010