Using Fedora in the classroom

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Lebanon Evangelical School





- Founded in 1860
- Roughly 1600 students from 3-18
- Switched to Linux on servers in 2005

Fedora in our school







- Switched workstations to Fedora 8 in 2008
- Using Fedora 23 right now

Why *not* do it?



- Need local expertise

Why do it?











Administrative tools



FreelPA



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- User administration
- Both web and command line interface
- Provides accountability
- Every student and staff member gets a username
- Students are allowed to use school systems before and after school









- All machines boot off the network
- Default is to then boot off the hard drives
- Must be authenticated to access Admin tools
- Authentication is over https
- System imaging options in Admin tools

LESSON



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- Web-based marking system
- Used at our school for over ten years
- Is now central management system for the whole school
- Source on Github under GPL
- Initial configuration *extremely* difficult!

Ansible



ansible@ansible:/etc/ansible/lesbg

File Edit View Search Terminal Help

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TASK: [workstations-school-net | install Fonts] *********************************

- Task-based configuration
- Changes are quick
- Deployment also quick
- Designed to be repeatable

Teaching tools



Libreoffice





- Word processing
- Spreadsheets
- Presentations

The GIMP





- Used to teach photo editing
- Single-window mode makes it usable







Untitled Document 1

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- Text editor
- Has syntax highlighting
- Has automatic indentation
- Used to teach HTML and CSS

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Blender





- Used for 3D modeling
- Steep learning curve
- Incredibly powerful

Scratch





- Graphical programming language
- Easy to understand
- Version 2 not available in Fedora because it requires Adobe AIR
- Spec to build RPM in links
- Version 3 will be HTML5 (hopefully)







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- Programming language
- Fun to teach
- Easy for beginners
- Very powerful

Curriculum



Theory of computer education



Memorization

Comprehension

Software changes



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- Word 95 vs Word 2016
- Many changes
- If students are forced to memorize how to use Word 95, they will struggle to use Word 2016
- If they understand how/why things actually work, then the changes will be less difficult



- Passion A teacher must enjoy teaching their subject
- Knowledge They must have a thorough understanding of what they're teaching
- Compassion Above all else, a teacher must truly care for all of their students, not just the ones that don't cause problems

Curriculum



- Touch typing
- Databases
- Hardware
- Word processing
- Image editing

- Presentations
- Spreadsheets
- HTML
- 3D modeling
- Programming

Word processing



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Updat	es on my life	0
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Filday 10 December, 2015		
School	Ski Camp	
The school I go to is called I chanese	Last year I went to ski camp. It was meant	1
Evangelical School for Boys and Girls. It is a	to be a "ski" camp, but it ended up being more of	
fairly big school, with about 1600 students fro	m a "play ping pong and pool and hang out and run	
nursery to 12 th grade. I am currently in grade 9), around in the snow" camp. I was looking forward	
exciting, yet very chaotic. I have many friends	s in to learn how to ski: however, it was fun. I got to	
my class, and usually I get along with them w	ell. learn how to play pool, and I was proven to be the	
In the school, there are 3 main subjects:	2 nd best ping pong player in classes 6 to 8. I also	
English, Math, and Arabic. There are other	had a snowball fight in the freezing weather.	
There are some unusual subjects such as art a	nd	
drama, and music for the Junior Department		
(Nursery to Grade 5).		
The school is religious. Every week we h	ave a second	
Page 1 of 2 971 words, 5,142 characters Default Style English	(USA) = Section1 D DD CD -	+ 100%

- Columns
- Photos
- Text boxes
- Drawing tools
- Styles
- Giving credit
- Checking licenses

Image editing





- Cropping out the background
- Adding new things to it
- Ethics of changing photos

Spreadsheets



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• Formulas

- How to design invoices
- How to design gradesheets
- Charts

Web page design





- HTML basics
- CSS for a consistent style
- Online privacy

3D modeling







- How to create objects
- How to design materials that look realistic
- Adding textures to make objects look more lifelike
- Animation

Programming







- Basics using Scratch
- Loops and conditionals
- Group project: Make a game
- Advanced programming in Python
- Design a simple AI that can defeat other students' AIs





- Our students leave the school understanding computer theory
- They have a good grasp on how and why computer applications work as they do
- They understand the importance of the ethics involved in creating and working with digital media

Links



- iPXE: http://ipxe.org/
- LES Ansible plays: https://github.com/lesbg/ansible
- LESSON: https://github.com/lesbg/lesson-1.0
- Scratch: https://scratch.mit.edu
- Scratch 2 RPM spec file: http://lesloueizeh.com/jdieter/scratch2
- LES Scratch projects: http://scratch.lesbg.com
- Botwar: https://github.com/lesbg/botwar