

# Experiments in Connecting the One Laptop per Child (OLPC) Computer to the Internet

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## Abstract

*We characterized various methods of connecting the One Laptop Per Child (OLPC) to the Internet and explored the development of a local health network server. With open source software, we successfully connected to the Internet via local wireless/wired networks, dialup analog modem and mobile phone. Since the mobile phone is used by almost half of the world's population and the OLPC available in developing countries, an opportunity opens for accessing healthcare information for many.*

## Introduction

Physicians worldwide use MEDLINE for research and clinical decision-making. However, access to online medical information is still challenging especially in Asia and Africa where Internet coverage is sparse. However, most of Asia and increasingly Africa have mobile phone coverage. The mobile phone, then, can turn into a convenient access to health information and a conduit for telemedicine that may improve patient care and health provider training.

The OLP or XO and other subnotebook computers are becoming more popular because of their relatively low cost and portability. Enabling Internet connections for these devices provide a gateway to health information on the Internet. Remote health education and telemedicine might also be feasible.

## Method

We used a US Robotics 56K analog dialup modem and "wvdial" package to configure the OLPC. A slightly modified wvdial configuration was used with the Sony Ericsson (W580i) GSM mobile phone (Figure 1). The OLPC can connect automatically to any wireless network and other wireless computers in the neighborhood. However, connecting to hidden secured networks needed a script to override default settings. We also configured the XO as a Web server using Drupal and Lighttpd. The OLPC XS 0.4 school

server software was installed on a Dell computer and configured as a local server with health-related content and as a gateway to the Internet for other OLPCs.



**Figure 1. OLPC, mobile phone and analog dialup modem.**

## Result and Discussion

Using a mobile phone as a modem is probably the most realistic model for connecting the OLPC and similar devices to the Internet in developing countries. Once online, the OLPC functioned just like any other networked computer in a wireless or wired environment. We simulated a local health server by developing a portal for other OLPCs and creating health-related material. The XO server was quite fast.

## Conclusion

The XO was successfully connected to the Internet using an analog modem, a GSM mobile phone, and wired and wireless local area networks. These configurations provide an opportunity to use the OLPC, netbooks, subnotebook and other wireless devices for use in health education and other health applications like telemedicine.

## Reference

1. [http://www.linuxcommand.org/man\\_pages/wvdial1.html](http://www.linuxcommand.org/man_pages/wvdial1.html)