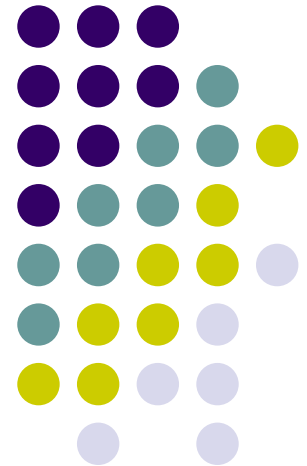
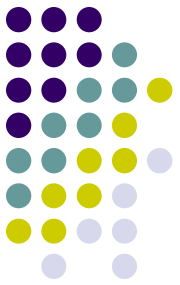


The Internet and Youth: Evaluating the GLAS program in the Philippines

Elizabeth M. King
DECRG

Presented at SIEF Workshop on Impact Evaluation
Manila, December 1-5, 2008

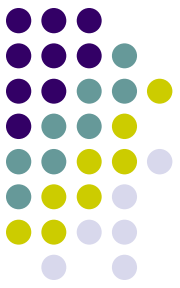




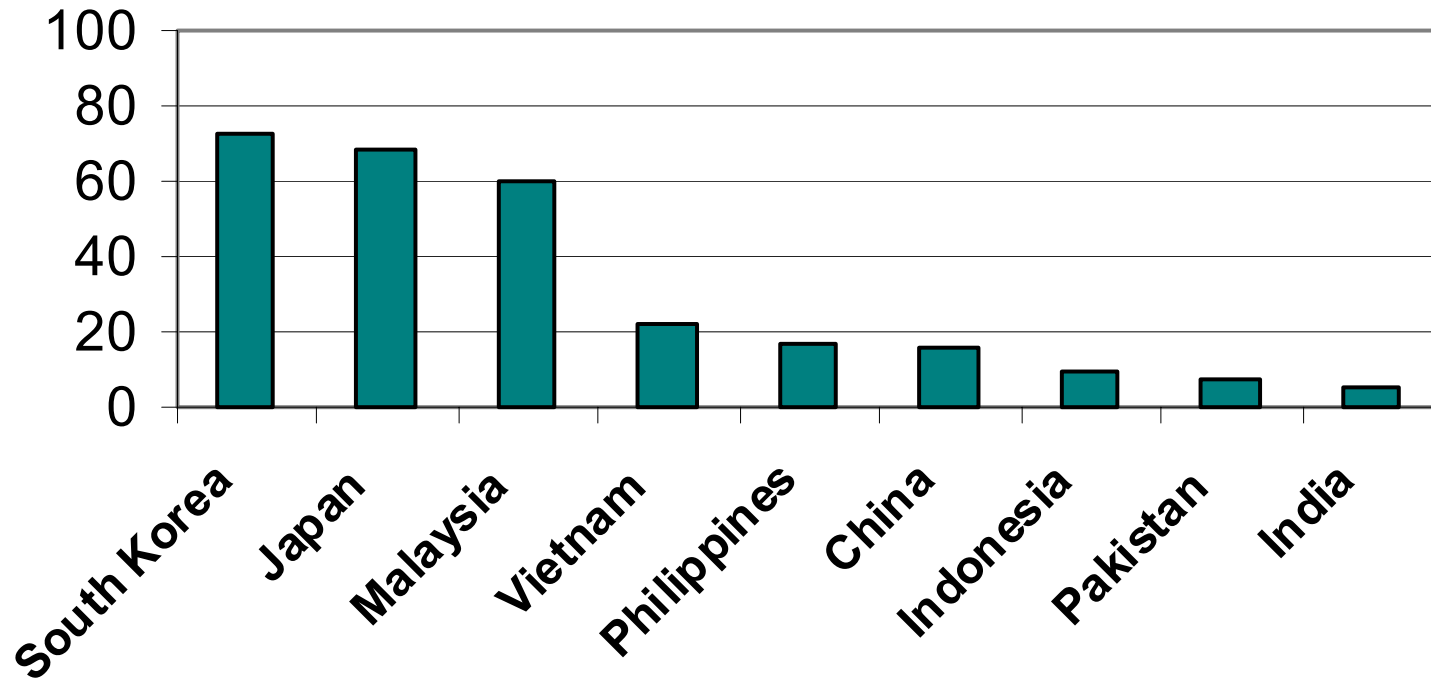
Development rationale for study

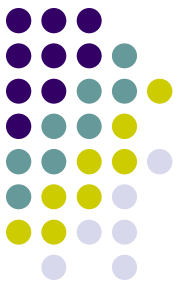
- **Why computers & Internet?** Adoption of computers and Internet as most significant change in the workplace in the past two decades. In developed countries, strong wage premium associated with computer skills and use (e.g., Autor, Katz, and Krueger 1998, Chun 2003)

How prevalent is Internet use in Asia?



Percent population using Internet
As of December 2007

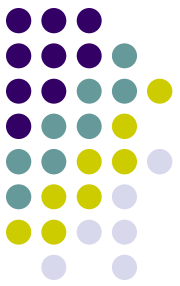




Development rationale for study

- **Why computers & Internet?** Adoption of computers and Internet as most significant change in the workplace in the past two decades. In developed countries, strong wage premium associated with computer skills and use (e.g., Autor, Katz, and Krueger 1998, Chun 2003)
- **Why youth?** At end of secondary school, youth are deemed old enough to work, to vote, to drive, to take alcohol, to marry without their parental consent, to join the military, etc. Better access to information at this age can be critical to these decisions.

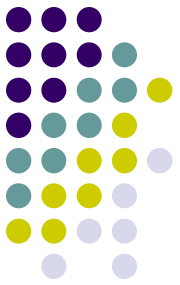
Youth's life transitions, Philippines



Transitions, 17-19 year-olds	Total	Males	Females
% High school graduates	60%	51%	71%
Among high school graduates:			
% Married	3%	2%	5%
% Employed	23%	29%	17%
% Looking for work	5%	6%	5%
% Continuing in school	58%	55%	60%

Data sources: YAFS3 (2002), APIS (2002)

Youth's risky behaviors

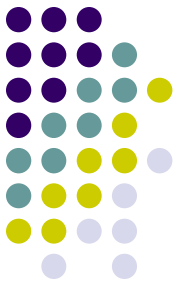


Risky health behaviors, 15-19 year-olds

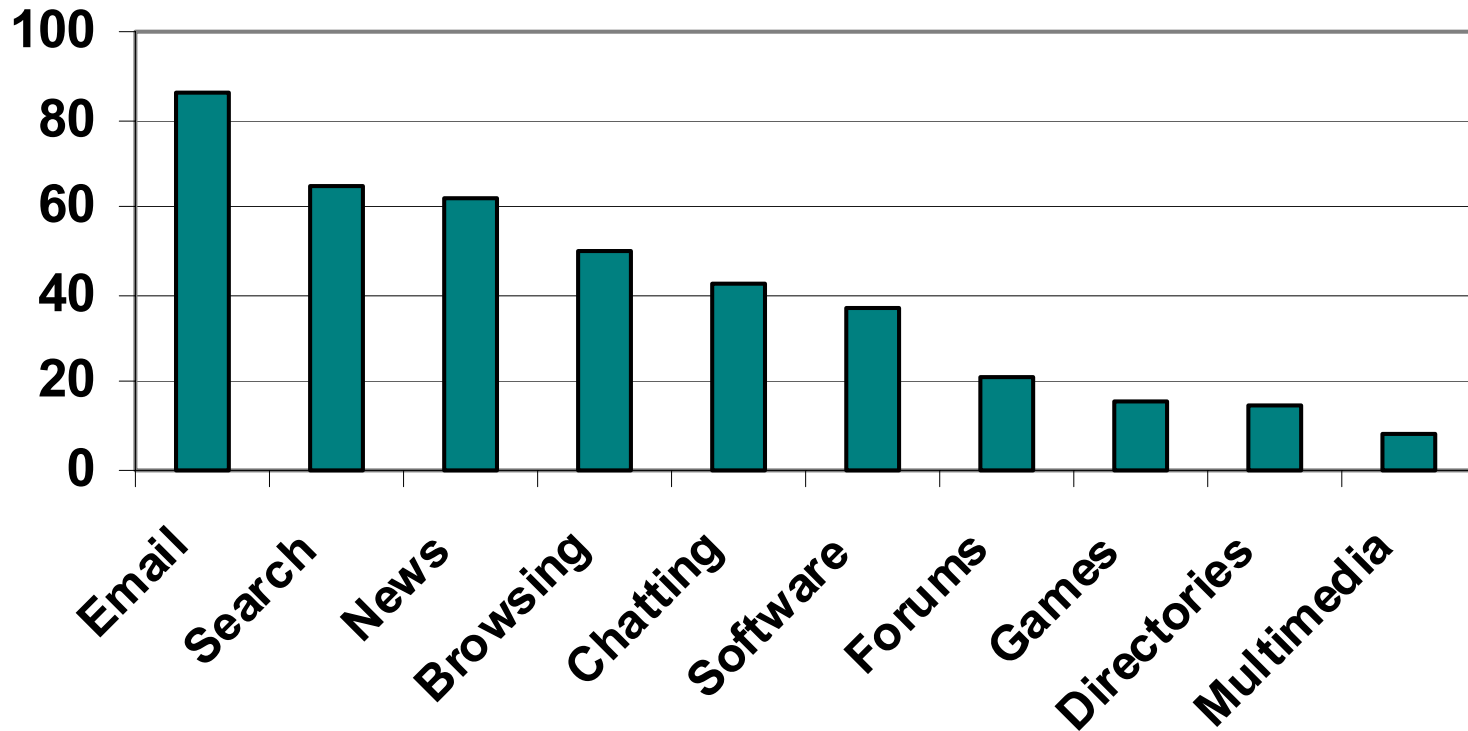
	Total	Males	Females
% Ever smoked	41%	57%	26%
% Currently smoking	17%	30%	5%
% Ever drank alcoholic drinks	63%	73%	52%
% Currently drinking	35%	51%	20%
% Ever used drugs	6%	11%	2%
% Currently using drugs	2%	4%	1%

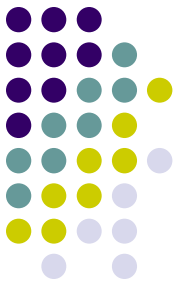
Source of data: YAFS3, 2002

Varied uses of the Internet



Type of Internet Use, U.S.

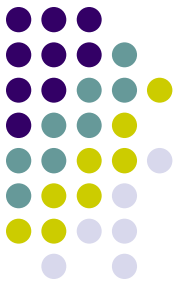




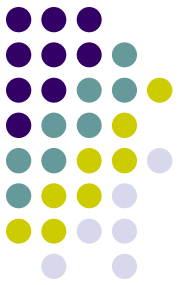
Varied uses of the Internet

- Internet is widely used for health information by teens; appeal lies in ease and anonymity
 - In US, 75% of teens use Internet to look up health information; 44% of whom look up sexual health information (Kanuga & Rosenfeld 2004)
 - Survey of 10th graders indicate teens' most researched topics as sexual health, fitness & exercise, STIs

Promise of impact: Findings from past studies



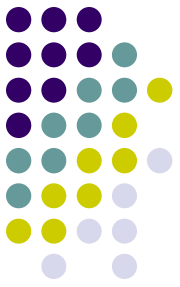
- World Links, an ICT program in Africa and Latin America, prepares students and teachers on technology literacy, information management, communication, working in teams, entrepreneurship, global awareness, civic engagement, and problem solving. Through self-reported surveys, a positive impact for both students and teachers (Kozma, et. al, 2004, Kozma and McGhee, 1999)
- Large majority of studies are based on correlation analysis and unable to measure a causal effect of computers on educational achievement.
- Those with careful evaluation approach have found mixed results.



The GILAS Program

- *Gearing up Internet Literacy and Access for Students (GILAS)* is a private consortium that provides computers to public secondary schools; connects them to the Internet; gives free Internet access for one year, complete Internet laboratory with software, hardware and basic computer, and basic Internet training for one teacher/lab monitor
- As of October 2008, GILAS had connected about 2,000 public high schools.

Prevalence of computers in the Philippines



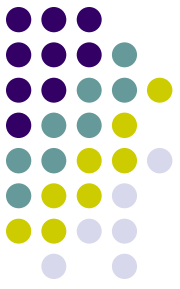
- 42% of public high schools do not have computers; 41% have computers but no Internet access; 17% have computers with Internet connection
- Only a small proportion of households have computers (5.1% in 2003, 3.5% in 2000); less than 20% even in the most educated households

Households with computers

Philippines, 2000 and 2003 (%)

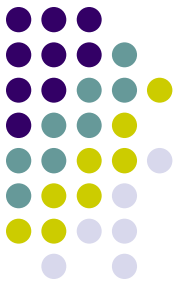


Characteristics of HH Head	2003	2000
Philippines	5.13	3.53
Sex of HH head		
Male	4.84	3.31
Female	7.17	5.03
Education		
Elementary below	0.56	0.47
Highschool	2.50	1.28
College above	14.97	10.84
Occupation		
Professional, Technical and Related Workers	18.57	11.50
Administrative, Executive and Managerial Workers	13.61	17.58
Clerical and Related Workers	10.04	9.00
Service and Sales Workers	4.75	3.56
Agricultural, Animal Husbandry and Forestry Workers	1.35	0.62
Production and Related Workers	1.91	1.26



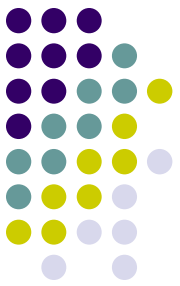
Policy relevance of program

- Benefits, costs and risks
 - Social benefits: Better education? Better life choices by youth?
 - Business benefits: increased demand for ICT services
 - Costs and risks: Costs to private consortium; cost of training teachers & students; risk of diverting curriculum; risks associated with Internet use
- Program effectively puts policy pressure on government in a new area
 - How to train teachers and students in ICT use?
 - How to incorporate ICT into curriculum?
 - How to regulate or guide ICT use by students?



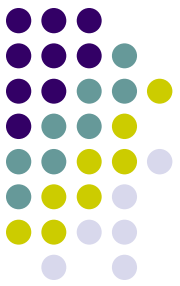
Evaluation questions

- How and how much do high school students use computers and the Internet?
- Can school guidance on Internet use ensure safe and productive use?
- Can access to information on the Internet improve:
 - Students' probability of completing high school and doing well in school? Their decision about higher education?
 - Students' knowledge, attitudes and expectations about health-related behaviors, sexuality and family formation, work, and citizenship?
 - Quality of students' decision-making, such as the sources of information and advice they rely on?
 - Youth choices and behaviors regarding life transitions?



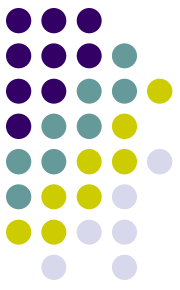
Factors affecting evaluation design

- Explored randomized expansion of Internet connection but ran into infrastructure constraints
 - Program expansion influenced by the availability of the telecom infrastructure (business considerations external to schools) and of donor funds to areas
- Key information obtained through pre-evaluation field visits
 - Often computer labs open only during class hours; students stay in classrooms during class hours, so little exposure
 - Computer lab teacher/monitor often not trained adequately, private tech support not readily available, so many problems with connection
 - Some schools too poor to continue Internet subscription



Randomized evaluation design

Control GILAS-basic	Treatment 1 GILAS-plus 1	Treatment 2 GILAS-plus 2
School computers & free Internet connection (DSL or DSL-like)	School computers & Internet connection (DSL & DSL-like) Financial incentive (cash subsidy?) for school computer lab to stay open	School computers & Internet connection (DSL) Financial incentive (cash subsidy?) for school computer lab to stay open Student Internet training plus printed guides to websites



Implementing evaluation design

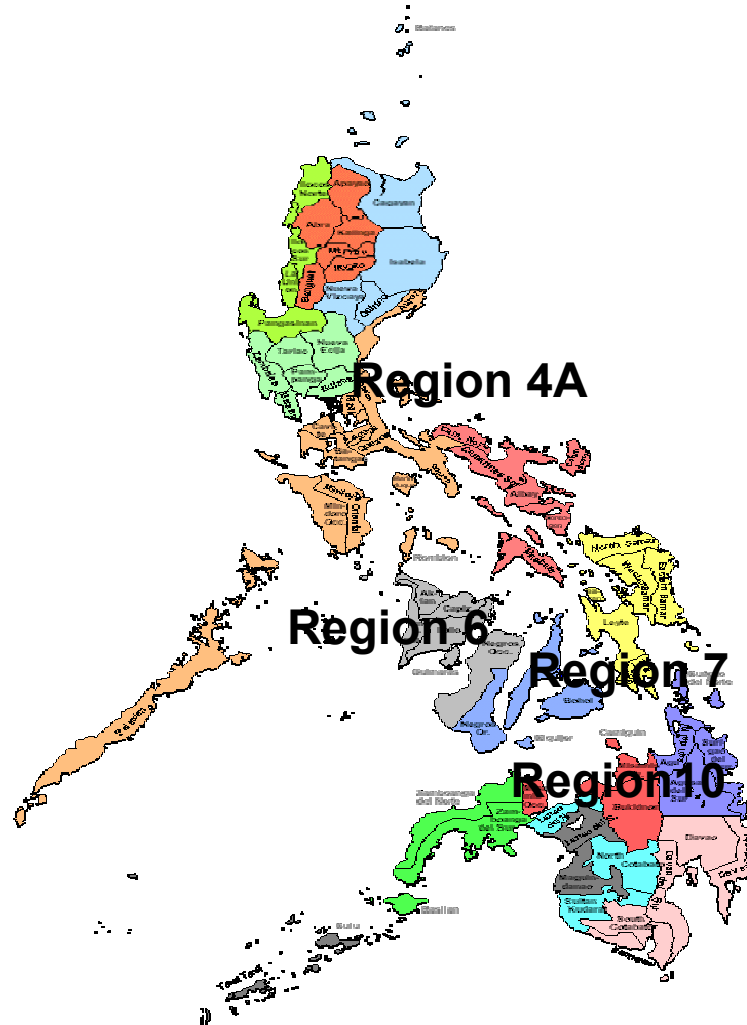
- Select only GILAS schools with DSL or DSL-like connection and have been connected for at least 6 months at baseline (July-August 2008) => About 250 schools in four regions with heaviest concentration of program schools
 - Program data on schools not always accurate or up-to-date
- Match schools on the basis of enrollment size, urban/rural location, 2005 NAT test scores
- Form triads of schools on basis of nearest matches
- For each triad, randomly allocate schools to control and two treatment regimes
- Baseline survey; at least one follow-up survey; monitoring of school computers; exit surveys at Internet cafe

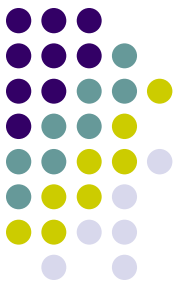
Study regions



Study areas:

- Regions 4A
- Regions 6, 7
- Region 10

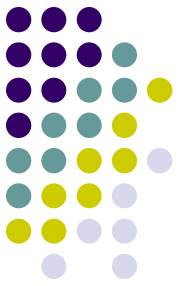




Some output & outcome indicators

Table 1. Internet use, knowledge and attitudes: Some outcome indicators

Domains	Indicators
Computer and Internet use (students & teachers)	Knowledge about computers and Internet Quantity and nature of computer and Internet use (frequency, intensity, sites visited) Nature of information accessed (range, accuracy and speed)
Social interactions (students)	Nature and frequency of interaction with teachers and peers; influences on decision-making
Academic performance (students)	Daily attendance and performance Assessment of self as a student High school completion and graduation NAT test scores
Knowledge, attitudes, perceptions (KAP) (students)	KAP pertaining to education, health, work, migration, sexuality and family formation, civic participation
Expectations for self	Plans pertaining to health behavior, work, migration, sexuality and family formation, civic participation
Behavioral change (students)	Risky behaviors; post-school education; school-to-work transition; membership in civic/social organizations



Update on implementation

- Designed student, teacher and school questionnaires after meetings with program administrative unit, telecoms, and school visits
- Baseline survey: field work started on 3rd week of June, completed after one month
- Covered 235 schools
- Self-completed questionnaires in the classroom, with monitors
- Distributed computer lab logbooks
- Data encoding and analysis ongoing

Findings from site visits & baseline survey



- **Are the GILAS schools still connected?**
 - One-tenth to one-half in some provinces, schools no longer connected (verified, not just self-reported)
 - Reasons: Inability to pay for connection fees and electricity; technical problems from ISP side (weak or no signal, no tech support given to schools with connection problem); technical problems in school (outmoded hardware, no maintenance capacity by lab teacher)
- **Is the Internet connection being used by students?**
 - Network problem: network hub out of order and no capacity to restore network connection; connecting schools does not ensure access for students
 - Lab hours limited
 - Too few computers for number of students, so no student use even in computer class
 - Inability of students to pay for computer fee



Challenges for implementation

- Timely and faithful implementation of randomized design
- Flexibility of evaluation design (where is plan B?)
- Ability to follow-up high proportion of students in subsequent surveys
- Patience of school personnel and program administration with evaluation
- Holding back the tide of other related programs in evaluation schools – or obtaining sufficient information about them