Through the Looking Glass: Science Explorer as a Communication Approach in Promoting STEM careers

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Is this cat going up or down?
What do you hear!?!?

YANNY | LAUREL

VOTE
Perception should be considered in STEM career promotion to create maximum impact within the limited time we engage the students.
Most Grade 10 students are interested in biology, followed by physics.

Relevance of Science Education, Talisayon et al., 2006
90% of students want to learn about computers, stars, planets, universe, clean air and water, mobile phones.
TOP RESEARCH TOPICS OF STUDENTS

Stars
Planets
Black holes
Space Travel
Diseases and Medicine Cure
Environmental Research
Inventions
Computers or New Technology
TOP JOB CONSIDERATIONS OF STUDENTS

Creative use of talents and abilities
Getting rich and in control
Working for enjoyment
Working with and for people
Science and Technology
Independence
Interest => Action
Increasing human resource in science and technology from 1990 – 2010
S&T Workers
Disaggregation by Occupation

S&T Occupational Group

- Nursing and midwifery professionals
- Engineers and related professionals
- Health professionals except nursing
- Computer professionals
- Architects and related professionals
- Life sciences professionals
- Physicists, chemists, and related professionals
- Mathematicians, statisticians, and related professionals
More than 50% of S&T Professionals are in the National Capital Region and nearby regions (Region III and IVA).

S&T Professionals working overseas increased from 1990 to 2010.
There is a gap of 179 S&T professionals per million population.
Interest $\Rightarrow Action$
1 of 10 schools in the Philippines has a science laboratory

1, 762 students use a science laboratory
More than 80% of the students had the following out-of-school experiences:

- Using a ruler
- Taking medicine to cure illness
- Watching nature programs on TV
- Reading about nature in magazines
- Using dictionary in a computer
Science Explorer
Interactive Science Activities
Interaction with Real Life Scientists
25,000 students in 12 regions
Research Problem

How effective are the Science Explorer modules as a communication approach in enticing high school students to get into STEM careers

* Source
* Message
Methodology

Cross sectional survey was administered to 360 high school students from Sorsogon National High School in Eastern Philippines who participated in four modules in the Science Explorer.

Data gathered from the participants are their perceptions on the message on science careers they obtained from their experience of the Science Explorer modules.

The study took a look on how the Science Explorer modules as a communication approach affected their course choices, behavior, and reasons behind their choices.
Demographics
Demographics

![Graph showing grade distribution by gender (Female and Male)]
Demographics

![Annual Family Income](image)

- Female
- Male
Demographics

Module Attended

- Astronomy: Female 54, Male 40
- Earthquake: Female 48, Male 34
- Engineering Mechanics: Female 56, Male 29
- Microbiology: Female 48, Male 17

0 10 20 30 40 50 60

As t onomy   Earthquake   Engine e r ing M echanics   Ma l e   Genomics   M cobi ology

Femal e   M al e
Course Choices Before and After the Science Explorer
Course Intention Change Before and After the Science Explorer
Did the Science Explorer module encourage you to get into careers in science in the future?
Student Reading Before and After the Science Explorer

![Bar Chart]

- Before
- After

- Female
  - Not much: 50
  - Little: 30
  - Somewhat: 38
  - Much: 35
  - A great deal: 47

- Male
  - Not much: 47
  - Little: 56
  - Somewhat: 39
  - Much: 41
  - A great deal: 65

- Female
  - Not much: 34
  - Little: 41
  - Somewhat: 59
  - Much: 34
  - A great deal: 29

- Male
  - Not much: 18
  - Little: 18
  - Somewhat: 13
  - Much: 12
  - A great deal: 6

- Female
  - Not much: 10
  - Little: 10
  - Somewhat: 10
  - Much: 10
  - A great deal: 6

- Male
  - Not much: 10
  - Little: 10
  - Somewhat: 10
  - Much: 10
  - A great deal: 10
Students’ Change in Reading Behavior

![Students' Change in Reading Behavior](image_url)
How much did the message you got from the Science Explorer module affect your choice of career?
Would the Science Explorer module you attended affect your reason in the career you would want to pursue in the future?
Would the message you obtained from the Science Explorer affect your reason in the career you would want to pursue in the future?
Conclusions

The Science Explorer succeeds in retaining students who are into science careers and sustaining their interest in science.

The Science Explorer is able to entice students to get into STEM careers with more females encouraged by its modules.

The Science Explorer accomplishes its goal in changing the behavior of students relative to reading habits with more male students looking up STEM careers.

More female students were affected by the Science Explorer module as a message to take on science careers, thus, accomplishing its goal of piquing the interest of the students.

Both sexes showed that the Science Explorer module and message may not affect their decision on their chosen career, thus, further investigation can be conducted to examine what affects their career choices.
IT IS OUR CHOICES, HARRY, THAT SHOW US WHO WE TRULY ARE, FAR MORE THAN OUR ABILITIES.

— ALBUS DUMBLEDORE

HARRY POTTER AND THE CHAMBER OF SECRETS BY J.K. ROWLING