

# Visions of Science Network for Learning

## STEM Programs: Initiatives to Engage Underrepresented Groups

Dr. Eugenia Duodu



# Understanding the delivery of a Canadian-based after-school STEM program: a case study

Duodu et al. *International Journal of STEM Education* (2017) 4:20  
DOI 10.1186/s40594-017-0083-2


International Journal of  
STEM Education

SHORT REPORT

Open Access

## Understanding the delivery of a Canadian-based after-school STEM program: a case study



Eugenia Duodu<sup>2</sup>, Jessica Noble<sup>1</sup>, Yusuf Yusuf<sup>2</sup>, Camilo Garay<sup>2</sup> and Corliss Bean<sup>1\*</sup> 

### Abstract

**Background:** Due to the rising demands for a Canadian workforce with science, technology, engineering, and math (STEM)-related education, there is a need to increase youth engagement in STEM education and programming. Research, however, has shown that youth residing in low-income communities are disproportionately affected by psychosocial barriers, which often inhibit meaningful engagement in STEM programming. Visions of Science Network for Learning (VoSNL) was designed and implemented to address these existing barriers. VoSNL is a charitable organization in Southern Ontario, Canada, that provides weekly community-based STEM programming to low-income and marginalized youth during out-of-school time. VoSNL programming is delivered directly within the community and is free-of-charge for all youth in order to minimize barriers of physical and financial accessibility. The purpose of this report was to provide a detailed description of a core program within VoSNL—Community Science Clubs—and summarize the findings of a process evaluation, specifically

# #STEM



**70 %** of Canada's top jobs of the future will require STEM based learning, literacy and skills.

# #STEM



**39%** of incoming grade 9 students completed grade 12 math & only **29%** completed grade 12 science  
[HEQCO, 2016]

# #STEM



- Start Early
- Foster Interest
- Enhance Awareness

**Demographics of young people are  
left out.**

# #STEM

Youth from **low-income & marginalized** communities often face multiple barriers to meaningful engagement in **STEM**

# The Barriers



**Limited  
financial  
capacity**



**How do we bridge the opportunity  
gap?**

# Informal Learning Environments

- Free
- Hand's -on
- Student Directed
- Collaborative
- Community-based



Visions of Science Network for Learning Inc. (VoSNL) is a charitable organization that aims to advance the educational achievements and career aspirations of youth from low-income and marginalized communities through meaningful engagement in science, technology, engineering and mathematics (STEM) fields and research.



We provide youth from low-income communities with **free & consistent** opportunities to access **fun**, hands-on STEM learning directly within their **community**.

# Community STEM Clubs (grades 3 to 8)

## Bringing STEM learning to the community



Consistent and caring staff & volunteers



VOS curriculum & experiments



Network of partners

- 2 hour workshops
- 24 weeks
- In 24 communities



Increased interest and engagement in STEM learning, and improved positive youth development

## Successes

- Community context
- Consistent engagement
- Positive youth-staff relationships

## Challenges

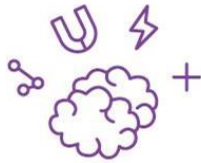
- Community-based issues
- Limited resources
- Outreach and Promotion
- Wide-age range

# STEM Community Leaders (grades 8 to 12)

Community STEM Clubs



STEM Community Leaders



Experiential  
STEM  
Learning



Leadership  
training & skills  
development



Community  
engagement



**STEM  
Community Leaders**

# Thank You

 **@EugeniaDuodu**

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