

The odd one out: Revisiting and investigating the gender imbalance in ICT study choices

ABSTRACT

For the past two decades there has been an imbalance between male and female students entering higher qualifications from high schools. Only one in six students entering higher education to study computer related degrees are female. Occupational stereotyping can be linked to the decline in the number of females entering computing degree courses.

INTRODUCTION

The past two decades have seen an exponential growth of employment opportunities within the ICT industry [1]. Despite the availability of employment opportunities, there has been a downturn in the number of females entering the industry. This decline has been steady over the past two decades to the point where there is a real risk that females will be almost entirely absent from the ICT industry [4].

The popular stereotype of people working in ICT is that they are 'geeks', hiding in darkened rooms, staring at computer screens all day [2, p.128]. This image is promulgated in popular media in TV shows such as Criminal Minds, which portray a negative stereotype of females within the ICT industry.



Image one. Criminal minds, Penelope Garcia, Tech guru [8]

QUESTION

What perceptions of IT related jobs and role models do females get from family, friends, teachers and guidance counsellors?
How do Social media and traditional media (TV, film, etc.) influence female's perception of IT?
Does this impact in their decision-making when it comes to taking ICT at high school and or as a viable career choice?
Have ICT interventions started to change perception of the ICT industry for girls?

PARADIGM

Design Science Research approach (DSR) [6], incorporates mixed method design. DSR has been described as an evaluation cycle methodology [3] which can benefit from the strengths of mixed methods.

DSR is to facilitate the different research questions within a single study. Neither quantitative nor qualitative methods can be used to answer all strands of the questions, so the use of DSR should prove a way to answer the research questions. See figure one for an overview of the process.

NOTE # The term ICT, has been used to define any related jobs within the technology field and also for the technology high school qualifications used within New Zealand. It is assumed that computer relates to any device used by the students that can connect to the internet such as tablets, games machines, desktops, phones and laptops

data collection

Collecting quantitative data through a self-developed questionnaire

Collecting qualitative data through semi-structured interviews.

Secondary collection carried out through the web if primary data does not give enough evidence.

Final collection of data, longitudinal data to analyses interventions [7].

data analysis procedures

1 Collect all quantitative data from the participants.

2 Look for significant results that match the research questions and try to eliminate non-significant data that could skew the outcomes.

3 Collect qualitative data from semi structured interviews.

4 Collate data from both step one and three and summarise what has been found.

CONCLUSIONS

Expected contributions from this EID are:

Systematic literature review of investigating the gender imbalance in ICT study choices of female students.

A tool that helps students decide and understand career choices on-line.

Do interventions help gain the interest of female student to undertake further education or pursue ICT jobs.

Have female perceptions changed in the last ten years regards ICT and the industry.

artifact

With the results of the data from both qualitative and quantitative data gathering it will allow the artifact to be constructed from the findings of the data. The artifact will consist of a web space that will be used as a portal for students to find information regarding ICT careers and educational pathways. This is initially the concept of the site, which could change after the data has been examined.

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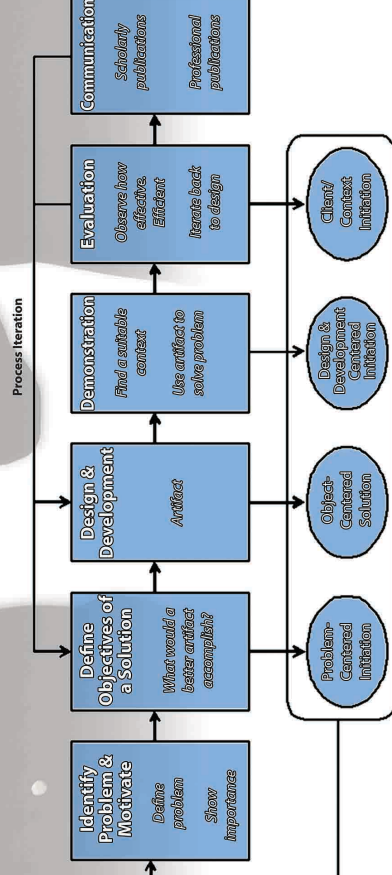


Figure one. Design Science Research Methodology Process Model (Peppers, et al., 2008).

