# ALICE: Attracting Learners to ITP's for a Computing Education

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## Abstract

A major challenge for tertiary institutions, both national and international, is finding a way to attract young women into Information and Communications Technology (ICT) programmes. Traditionally, the ratio of females to males participating in these programmes has remained static at about 20:80, in spite of numerous global initiatives to try and address this imbalance. Strategies aimed at addressing this problem in New Zealand have focused mainly on girls at secondary school in years 10 to 12.

This poster illustrates one approach, based on an initiative started over 20 years ago by Margot Phillipps, an international board member for the Computer Science Teachers Association (CSTA).

## Keywords

PC4G, ALICE, challenge, Year 10

## Introduction

In 1988 a Young Women's Programming Contest (YWPC), based on the use of an artificial assembler language called Simple Programming language Auckland Tech (SPLAT) was held over a weekend at the Auckland Institute of Technology, now the Auckland University of Technology (AUT). Over the years the contest and the programming languages used were refined and redeveloped.

In 2008 a proof-of-concept challenge was held at AUT. This used ALICE, a programming tool developed by Carnegie Melon University in the USA, designed to introduce young

people to the world of programming in a fun way. The success of this challenge resulted in the establishment of the Programming Challenge for Year 10 Girls (PC4G) with a focus on team-based problem solving.

In 2010 the Waikato Institute of Technology (Wintec), School of Information Technology, volunteered to host the first PC4G to be held in the greater Waikato region.

The poster focuses on the successful outcomes of the PC4G hosted by the Wintec School of IT.

## Content

Hosting an event for the first time, whether it is for a conference or for a programming competition, always presents a challenge to the organisers. However, organising the PC4G was relatively straight forward. This was due to the exceptional skills of the PC4G national director, Margot Phillipps, and her organising committee and the resources that they provided, which included;

- The challenge day schedule of activities (for both students 9the challenge) and teachers (Professional Development)
- Web-based team registration
- Challenge practice task and challenge problem
- Judging methodology, including a marking scheme
- Gold, silver and bronze medals for prizes
- Student and Teacher evaluation forms

The certificate of achievement (fig1), designed by the Wintec marketing department, included acknowledgement of the sponsors who generously provided cash and product for prizes. Wintec sponsored lunch, which was held between the practice session (1½ hours) and the challenge (2½ hours).

A total of 28 girls from 6 schools were entered, 2 per team. Schools included Matamata College, Tauranga Girls College, Paeroa College, Sacred Heart Girls' College Hamilton, and Te

Awamutu College. The seating in the computer lab available on the day was a limiting factor on numbers, with late applications having to be declined.

Wintec School of IT tutors, Susan Bennett and Lesley Gousmett, neither of whom had used ALICE before, teamed up to conduct the practice and challenge sessions.



**Figure 1: PC4G Certificate of Achievement**

## Conclusion

Comments by students and teachers in their completed evaluation forms were very complimentary about the event, with the teachers very keen to enter teams again in 2011. From an organisational perspective the challenge ran very smoothly with only minor glitches and Wintec looks forward to hosting the PC4G in 2011.

## References

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