

# USING COMPETITION TO SUSTAIN MOTIVATION – TOPS EVOLVES

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## ABSTRACT

*Supporting and sustaining the motivation of our most able and experienced first year undergraduates in introductory programming modules is as important as providing a supportive environment for novices who face a greater and more difficult challenge of mastering their first programming language. Designing and integrating additional challenges into the curriculum can be time consuming and onerous for the individual academic tasked with instructing an introductory programming module. This poster reports on the progress of the HEA-ICS funded TOPS initiative which promotes academic collaboration to stage an inter-university competition for first year programming students. Although the organisational and logistical are complex, students have found the activity rewarding both during the competition, and through subsequent reflection.*

## Keywords

*programming, competition, diversity, retention, motivation.*

## 1. THE COMPETITION

The TOPS inter-university programming competition has now been running for three years. Over time the composition has changed a little. The competing institutions have changed and grown in number, sponsorship has come from different sources, and each year a novel programming challenge theme has been identified. The basic structure of the activity has been constant. There are two strands to the competition each offering prizes for the winners. Initially a group of students from each institution create a challenge for pairs of students from other institutions. This is prepared in advance of the competition day, when the university teams, comprising two pairs of students attempt each of the challenges created in the first strand (apart from their own). To accommodate variability in difficulty between challenges marking is normalized. Each university teams comprises five students, four of whom attend the competition event.

## 2. REFLECTIONS

Variability of the academic year across institutions, different educational approaches and choice of languages present challenges to the competition design. Evidence from the students' perceived enjoyment, and their awareness of activities at other institutions is a benefit. HEA-ICS benefit through an opportunity for contact with students across a range of institutions, seeding awareness for future contact. Detractors might argue that competitive activities are exclusive, perhaps being less attractive to female students than to males. Some colleagues in our community believe that this type of activity is a manifestation of elitism; implying superiority in teaching or academic ability. This poster provides the opportunity for colleagues to consider their views and possible contributions to or participation in future activities of this type.

## 3. ACKNOWLEDGEMENTS

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## 4. REFERENCES

[1] Carter J. Efford N, Jamieson S Jenkins T, White S, Taxing our best students, *Italics*. 7,1, 120-127 (2008).

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