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SIGITE'23 Poster and Extended Abstract: The Proof of Gold is Fire: Measuring Stress to Show Impact of Gender Based Initiatives in Computing Education

Alina Berry

Technological University Dublin, alina.berry@mytudublin.ie

Sarah Jane Delany

Technological University Dublin, sarahjane.delany@tudublin.ie

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Alina - PhD candidate @TU Dublin



to connect on LinkedIn

The Proof of Gold Is Fire: Measuring Stress to Show Impact of Gender Based Initiatives in Computing Education

Alina Berry
TU Dublin

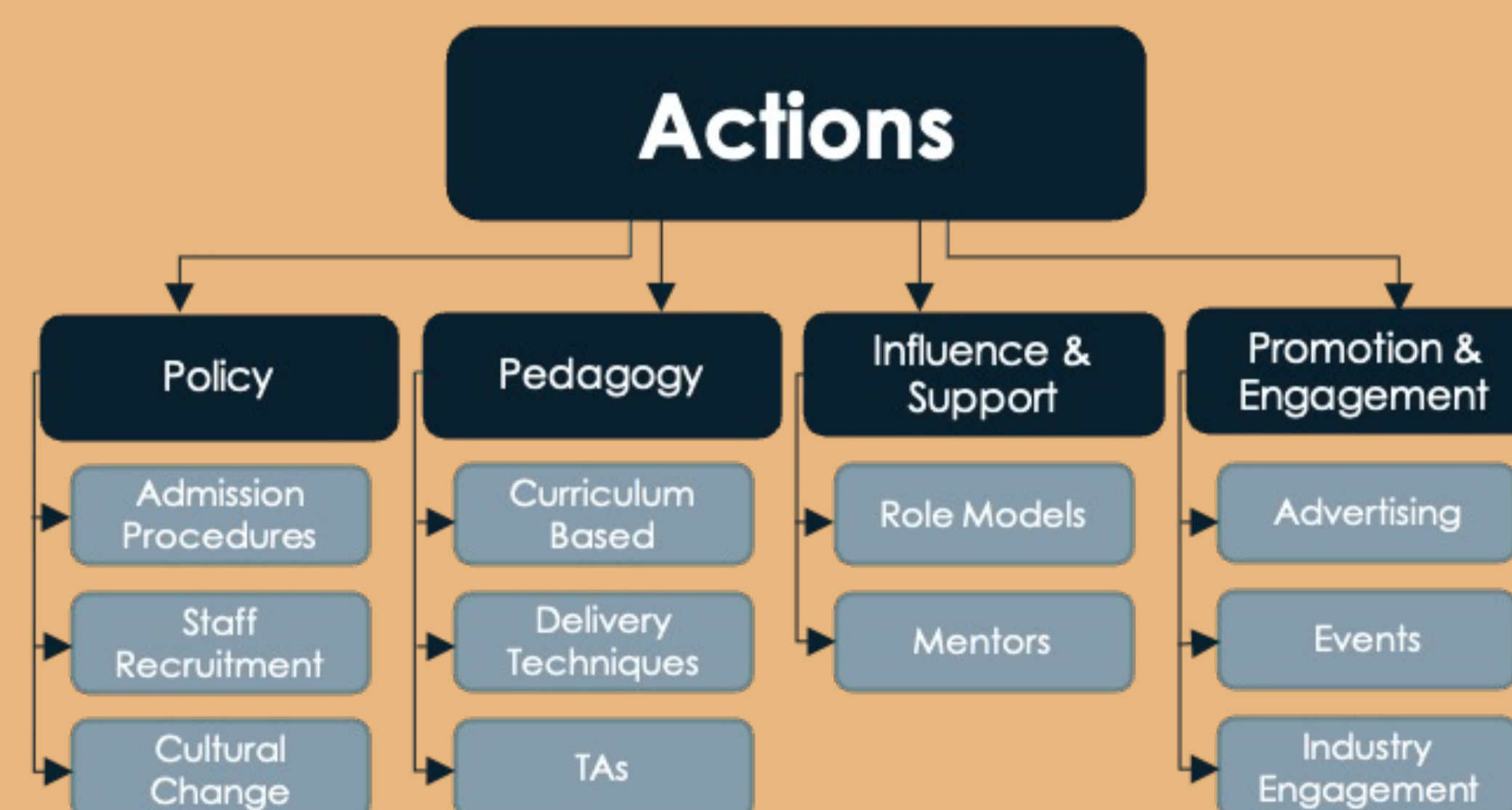
Sarah Jane Delany
TU Dublin

What is the problem?

- Gender inequality in computing education
- Only 21% of Irish introductory computing students are women [1]
- Leaky pipeline: half of women drop from tech fields by the age of 35 [2]
- Many gender initiatives in computing use recruitment or retention numbers [3]
- Enrolment/retention numbers take time to obtain [3]
- Other work uses feedback as form of impact [4]
- Need of a reliable short term evaluation

What did we do to address it?

- Previous work categorised initiatives (actions) [5]



- Current work categorised the evaluation approaches used and mapped them to relevant actions

What did we find?

1. 70+ publications, 3 types of evaluation:
 - Statistical Data:** recruitment, retention/student performance numbers. Used in all actions categories.
 - Feedback:** survey, measuring confidence, perception of computing, intention to persist, satisfaction. Very popular in curriculum based actions, delivery techniques and events.
 - Instruments:** frameworks, with calculations of e.g. sense of belonging [6] or probability of dropout [7]. Few instruments used.
2. No reliable short term evaluation measures.

What are we proposing?

- Perceived Stress Scale (PSS) [8] as a short term evaluation measure
- Stress has a relationship with retention [9] and self-efficacy in female students [10]
- Short adopted version of PSS – PSS-4 is proposed
- Impact is to be assessed before and after action
- Proposed version of PSS-4 is relevant for retention-based actions, for example mentoring programs, personalised emails, pair programming etc. [11]
- PSS will be evaluated in TU Dublin

Proposed PSS-4 Questionnaire:

1. How often have you felt that things were going your way?
2. How often have you found that you could not cope with all the things that you had to do?
3. How often have you felt that you were on top of things?
4. How often have you felt difficulties were piling up so high that you could not overcome them?

Students are asked to choose from the following alternatives:

0 - never 1 - almost never 2 - sometimes 3 - fairly often 4 - very often.

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Supervisors on this PhD project: **Prof. Sarah Jane Delany** (TU Dublin), **Dr. Susan McKeever** (TU Dublin), **Prof. Brenda Murphy** (University of Malta).

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