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Scottish Teachers Advancing Computing Science

Education is *situated*

- Hence, the STACS viewpoint comes from our own work to develop a *Community of Practice* (CoP) among Scottish CS teachers
- We've been working directly for teachers (By Teachers, For Teachers!) – creating the CoP
 - Creation of materials – secondary & now primary BGE, physical computing
 - Upskilling – PD for both attendees and tutors
 - Half and full days with CS teacher groups by local authority
 - On-line and in-person events
 - Networking
- What have we learned? Heightened awareness of a bunch of issues...
 - Prevailing attitudes towards CS
 - Class sizes / class time in BGE
 - Equipment / DPIAs etc
 - Teacher community time and leadership
- (Leading to Scot Gov supported engagement with LAs and Head Teachers)

Upskilling – starting point for this activity

- Used the annual SQA reports to drive upskilling
- Two responses to these reports
 - a) Use to improve exam technique
 - b) Use as a starting point for discussion where learners are *repeatedly* making the same mistake
- STACS upskilling used (b) primarily
 - Experienced teachers reflecting on their knowledge and practice and then engaging with others to share findings
 - Upskilling for the tutors
 - Upskilling for the attendees
 - Exploring what is going on – a form of *where are we?*
 - This has shed light on curriculum issues – leading to a STACS Body of Knowledge initiative (in-line with the CIC aim to focus on the position of knowledge)

Where are we? Two other observations

- SQA data and discussions suggest very contrasting journeys
 - Some schools do really well with update/outcomes, others not so much
 - Girls can succeed
 - Success is not aligned to rich/poor areas
- No consistency – but what we have *can* be made to work
- Scottish Tech Ecosystem Review
 - *"Put simply, the curriculum is boring. For a subject that is inherently magical (the ability to build almost anything) this is disappointing, and something is wrong. "*

Jigsaw analogy

- We have a pile of pieces and suspect some are missing
 - and no big / box-front picture
 - What is the big picture?
 - What are the missing pieces?

Big picture

Why CS?

- We're in Technologies
- Consider our contribution to the four CfE capacities
- Where does AI/ML sit?

What is CS?

What do we have to say about the pieces...?

- The pieces we have are pretty good!!
- But – because the pieces are not connected to a big picture – they're not taught in an integrated way – pile of pieces
- Vertically
 - BGE is not connected to the NQs
 - Primary BGE is not effectively connected to secondary BGE
 - N5-H-AH express train drains time for deep skills development (Hayward)
- Horizontally
 - Software Dev, Database Dev and Web taught in silos. Specialised NPAs
 - Each NQ has a big picture, but it is not connected to the pieces
- No guidance on how to do this (although some teachers succeeding!)

Missing pieces?

- Lack of real-world problem solving in N5 and H
- Consistent curriculum specification all the way to 18
 - Not stopping at 14/15
 - Needs to address the Body of Knowledge issue
 - Enable SQA docs to be true assessment specifications

