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**Tapping All Our Talents Review 2018: Women in STEM
Further & Higher Education Roundtable
25 April 2018, 10.00 – 12.00**

Note of Meeting

Roundtable Participants:

Tuleen Boutaleb, Senior Lecturer, School of Engineering and the Built Environment, Glasgow Caledonian University
Ruth Falconer, Head of Division of Computing and Maths, University of Abertay
David Gourley, Curriculum and Business Engagement Director, Perth College UHI
Stephanie Graham, Vice-Principal, West College Scotland
David Innes, Assistant Principal, Engineering, Computing and the Built Environment, Glasgow Clyde College
Alex MacLaren, Senior Director of Studies for Architectural Engineering, Heriot-Watt University
Ruth Meyer, Senior Policy Officer (Research and Innovation), Universities Scotland
Sandy Murray, Head of Curriculum and Teaching, College Development Network
Douglas Philp, Dean of the Faculty of Science, University of St Andrews
Niamh Shortt, Dean of Diversity and Inclusion, College of Science & Engineering, University of Edinburgh
Andy Witty, Director of Sector Policy, Colleges Scotland
Paul Zealey, Regional Skills Planning Lead, Skills Development Scotland

Working Group Members:

Professor Alice Brown CBE FRSE, former Chair, Scottish Funding Council; Emeritus Professor of Politics, University of Edinburgh.
Douglas Morrison, STEM and Innovation Lead, City of Glasgow College; Director, Scottish Institute of Innovation and Knowledge Exchange.
Professor Lesley Yellowlees CBE FRSE, Review Group Chair; former Vice Principal and Head of College of Science and Engineering, University of Edinburgh; former President, Royal Society of Chemistry.

Secretariat

Morven Chisholm, RSE Fellowship Manager

Resources / Reports mentioned:

Attracting Diversity: <https://www.ecu.ac.uk/guidance-resources/student-recruitment-retention-attainment/student-recruitment/attracting-and-increasing-student-diversity/>
(This is an ECU research project)

Addressing gender imbalances at subject level:

<https://www.heacademy.ac.uk/knowledge-hub/whose-job-it-anyway>

Accenture research on girls, their parents and STEM:

<https://newsroom.accenture.com/news/accenture-finds-more-than-half-of-12-year-old-girls-in-the-uk-and-ireland-believe-stem-subjects-are-too-difficult-to-learn.htm>

Discussion Topics

1. Has equality become a more visible central focus within FE and HE over the past five years e.g. better monitoring of data; establishment of equity committees; mandated equality training?

- This has been driven by Athena SWAN because of their requirement for data. Equality is now a priority at school-level, rather than just at university-level. All line managers undertake unconscious bias training.
- Equalities has always been important. Gender has become a higher priority. Data analysis has become more important and there is now a wider awareness of the data.
- Gender Action Plan has focused Curriculum Managers to gather views of what is actually happening. Positive that conversations are taking place and questions are being asked.
- Situation is completely different compared to 10 years ago.
- Important to contextualise the data and follow up with qualitative information as there is a danger of making assumptions from the data.
- Looking at the data and qualitative information, we need to ensure that choices are freely made and are informed.

2. How does the influence of parents, peers and careers advisers impact young people's choices and how can they be encouraged/supported to champion STEM to both genders?

- Parents make a huge impact.
- Out of date or incorrect information can be a real problem. Lack of connection and knowledge sharing with Careers Advisers. There is also a disconnect between what universities want and what schools think universities want.
- Careers Advisers now focus on enabling learners to develop a portfolio of skills rather than directing pupils to a specific career. Gender bias starts young (early in secondary education) so careers advice starts earlier to tackle this.
- Digital Ambassadors Network works to keep up to date on digital technology and disseminate this among colleagues.
- Linkages in the learner journey are important.
- Careers advice is often from teachers, and it can be conflicting/inaccurate.
- There is a lack of awareness of the range of roles within an industry.
- Social/economic background is also an issue. Not all parents will have the knowledge to support their children and guide them to make the right subject and career choices. Teachers also generally have not worked in industry, so they do not have an understanding of this.
- We need to be more proactive with regards to curriculum design and prepare pupils for jobs that do not exist yet. Need to develop flexible and adaptable pupils.
- Should we be asking younger people for their views? They will have plenty to say.

3. What initiatives have colleges and universities put in place to attract more young women to study STEM? Are these being evaluated and, if so, what lessons have been learned to date?

- Recognition that City of Glasgow College has been running women-only programmes to increase participation in construction and engineering. This is an example of a proportionate positive action measure. Ultimately, the focus is towards mainstreaming.
- Noted that such programmes are additional, so there is no detriment to anyone else, or to existing programmes.
- Positive action creates a safe environment for women, but it is not necessarily realistic once they are in industry if attitudes there have not changed. Need to be realistic regarding the situation in the labour market.
- Positive action programmes need to be part of a basket of measures that move towards mainstreaming.
- Need to distinguish between success of enrolment verses continuation, graduation etc.
- Primary schools are now engaging with colleges. STEM ambassadors play an important role working in primaries, developing materials and working with teachers.
- Curriculum review has moved the focus to interdisciplinary work and how to improve life/society. As a result, there has been an increase in uptake from a different type of person, and increasingly more women.
- Involved in hands-on workshops for teachers. Influencing the influencers. Also bringing 500 P6-S2 girls into university for a day to change their perceptions of engineering and universities.

4. What central policies are guiding increased effort in attracting more girls and women into STEM (e.g. SFC Gender Action Plan) and are they appropriate?

- Focuses people's minds. Would be interesting to know what is happening at Primary and Secondary level to start off the pathway.
- Political climate for gender equality has never been better. But we are tackling a very wide societal issue and we cannot deliver change in isolation.
- We have seen growth in apprenticeships, but focus on higher-level ones. There are targets around eliminating gender imbalances. They are not achievable in the time given, but we are moving towards them.
- We have a lot of female undergraduates, but problems translating that into careers and senior management. New policies regarding board diversity will make a difference at all levels of decision making.
- There have been initiatives going back over the last 30 years. Opportunities are available, but we need to make use of them and ensure joined up actions and policies.
- Professional institutions (particularly in the construction industry) are starting to ask questions regarding equality.
- A focus on internationalisation means meetings can be held outwith core hours. This is likely to have a bigger impact on women with caring responsibilities.

- Can see why there may be barriers in some industries (e.g. construction), but there should be fewer barriers (perceived or otherwise) for subjects such as ICT. We should focus on bringing (or highlighting the existence of) STEM elements in other disciplines (e.g. chemistry in relation to the beauty industry).

5. Has the experience of girls and women studying STEM improved in recent years? E.g. is there more support in the form of networks/mentoring?

- The creative industries (computing and gaming) have created networks and regional hubs to connect universities with industry and promote careers in the creative industries. Equate Scotland networks are also useful.
- Huge shift in attitude to sexual harassment. Reporting channels have become clearer, and prominent campaigns.
- Physical environment can make a difference. At the early stages of looking at this to ensure there are not physical barriers to studying certain subjects.
- Subtle modifications can be useful. E.g. ensuring overalls, boots etc are available in smaller sizes, lowering bench heights, challenging the existence of 'men at work' signs. These changes can be good for everyone, not just women.
- Have to be careful that we do not change the nature of the job just for women.
- Aware that some building sites have not taken females for work placements because they would then need female toilets.

6. What actions are being taken to make modern apprenticeships in STEM industries more attractive to young women? What are the barriers?

- High-level apprenticeships in partnership with industry changes the perception of apprenticeships. Apprenticeship champions and role models, including females, are important. We are tackling unconscious bias, developing best practice guides with Equate. Requirement and targets to increase number of women. Working with Girl Guides to develop STEM badges. Providing support for extracurricular clubs (e.g. coding clubs).
- Digital World Campaign has really driven engagement. But still an issue with a lack of appetite in industry to employ women. Would welcome a conversation around incentives to employ women.
- Apprenticeship levy funding is ringfenced by the Scottish Government, and they specify how the money is spent. Companies are aware that they pay it, so this raises some interest.
- The education sector can support SMEs, for example by providing advice and guidance to develop inclusive practices, flexible working policies etc.
- Do women who go in to apprenticeships stick with them? Similarly, women in FE?
- FE retention is good. Generally, we see women who are motivated pushing the boundaries etc. However, what we really want to see is a mainstreaming of this in order to achieve true equality.

7. Has there been any tangible/intangible culture shift over the past five years that has led to better (or worse?) experiences for women in FE & HE? If so, what have been the drivers of this?

- We are seeing equality and diversity talked about, but the translation into visible change takes time.
- Board is 50/50, but within departments it can be entirely one gender. Also, some women can be unsupportive of other women, because they did not get a 'leg-up' (as they see it).
- Women can definitely be obstacles to other women progressing.
- However, you do not want to feel that you succeeded only because of positive action measures.
- Still a long way to go. We need a shift in attitudes of women as well as men. We have a responsibility to nurture others, not kick the ladder away behind us.
- Change needs to be sustained, not just evidence of one person succeeding.
- Sustainability goes across everything we are doing.
- There is a love/hate relationship with Athena SWAN. It has had a positive effect, but had much more of an impact on women in terms of workload. More time spent on form-filling than action.

8. What are the biggest challenges that are yet to be tackled? What are the barriers to tackling these?

- Employers need to understand that diversity of workforce is a positive thing and for their benefit (diversity brings with it strength, adaptability etc). Need an attitude change. Need to engage with employers on this.
- Need more creative solutions.
- Need to make the case that it is not about 'better', but 'different' experience, which women can bring.
- There are issues recruiting into lecturing roles, we cannot therefore present positive female role models for students. Need a teaching qualification programme for women to move from industry into colleges, and to tackle imposter syndrome.
- Current teaching restrictions are unhelpful, as can only teach if the degree (rather than the career/expertise) is in the same subject as what they wish to teach.
- Developing a course to teach computing as a second subject.
- Need more awareness of supportive behaviour, and what everyone can do to help (it is everyone's responsibility).
- Need to keep the curriculum flexible and not narrow it down too much, so students are prepared for future employability.
- Need to move from fixing the women (by providing mentoring etc) to fixing the system/culture/attitudes.