Universities Scotland response to SFC's Gender Action Plan consultation

Universities Scotland welcomes the opportunity to contribute to the development of SFC's Gender Action Plan, and to consider the role of universities in addressing gender imbalances.

Universities are committed to ensuring fair access for qualified applicants, irrespective of gender, and are engaged in many activities to support this, including partnership activities which promote opportunities for boys and girls where either gender is underrepresented. Universities undertake a great deal of activity to broaden engagement and underpinning all of their work is a commitment to equality and diversity, and to ensuring that policies and practices serve to treat (prospective) applicants, students and graduates fairly.

In 2014, Universities Scotland undertook research, which it shared with the SFC, which sought to understand the challenges with gender balance in higher education and to propose evidence-based approach to responding to these challenges. This is indicative of the proactive approach the sector takes towards equality and diversity. This research is referred to throughout the response.

One of the key issues about gender imbalance in access to higher education is the lower proportion of boys who attain the qualifications necessary for university entry, and the consequent gender imbalance in the undergraduate population overall. There is evidence of gender imbalances across a number of subjects at undergraduate level and the Universities Scotland research demonstrates that the single strongest determinant of this is a corresponding gender imbalance in subject choices in schools. For example, most applicants to undergraduate programmes in the physical sciences are male (62%), as are most candidates for the Higher Physics exam (71%). Likewise, Higher Biology is more popular among girls than it is among boys (64% female, 36% male), and this is reflected in the undergraduate intake (65% female, 35% male).

Factors which lead to such gender imbalances often emerge at a young age, and are the result of various complex social factors which affect (limit) children's decision-making.[1] The university admissions process is fair and free of gender discrimination – research by Universities Scotland shows a strong correlation between the gender breakdown of applications and acceptances to gender-imbalanced subjects. This suggest that the biggest impact universities can have is likely to come from activities which focus on primary and secondary school pupils (and those who support them), and which aim to raise awareness of opportunities, aspiration and attainment. Work to reduce gender stereotyping and negative social attitudes which, in part, cause gender imbalances is also important and is something universities contribute to in their broader role as drivers of social development, as is work to inspire children to pursue their interests even if that means making 'unconventional' subject choices for their

[1] For example, Male access and success in higher education, HEA 2011: https://www.heacademy.ac.uk/sites/default/files/maleaccess.pdf

gender. However, universities cannot solve the problem alone – this will require action at different levels of society.

The development of the SFC Gender Action Plan is an opportunity to build on cross-sector partnerships to tackle the root causes and impacts of gender imbalance and universities are thoroughly committed to this.

1. Of the work currently being undertaken by Scottish colleges and universities to address gender imbalances at a student level:

a) What do you think is working well? Why do you think this?

Initiatives that work well are likely to involve partnerships which highlight opportunities to children and inspire/encourage them to pursue those that match their interests, even if this means going against the influence of social pressures. Activities which support access more directly, such as taster events and individual guidance through the admissions process, are also likely to be effective, along with activities which effectively use role models, include parents and teachers, and market opportunities/institutions (including in terms of career options) in gender-balanced ways. Successful initiatives, based on wider WP research, tend to be:

- systematic;
- long-term commitments;
- well-funded and otherwise resourced;
- partnership-orientated *and*
- high quality.[2]

Some institutions highlighted to us the importance of promotional materials that do not portray courses/professions as being gender-exclusive, and of staff development to promote and ensure awareness of the impact of gender-specific language, imagery and expectations on how people perceive opportunities. Some institutions highlighted the importance of ensuring equality and diversity in learning and teaching, which includes course content as well as delivery, and the Higher Education Academy, Equality Challenge Unit and Universities Scotland are engaged in a long-term enhancement project on this topic.

b) What do you think is working less well? Why do you think this?

There are different reasons for the historical gender imbalances in different subject areas, which may require different means of influencing and securing positive change. At the same time, there is limited evidence base for what works. A key aspect of this is the ability to track and define the causal link between specific outreach activities of universities and subsequent life decisions. Greater research in this area would allow for more targeted use or resources.

[2] International Research on the Effectiveness of Widening Participation, Edge Hill University and CFE Research, October 2013: http://www.hefce.ac.uk/media/hefce/content/pubs/indirreports/2013/WP,international,research/2013_WPeffectiveness.pdf

A successful body of initiatives will usually include strong and committed partnerships at both entry and exit stages, with consistent messages from schools, colleges, universities and the professions. Whilst there are targeted activities to try and address gender stereotypes regarding associations with gender and occupations (and therefore programmes that might lead to these occupations) it can take a long time to overcome these stereotypes, and the conversion rates from activities to applications may have to be a longer-term objective than ten years. Simply setting student recruitment targets is unlikely to resolve these long-term challenges. Research shows that gender differences in subject choices, which have not transformed since at least the 1960s, are attributable to multiple causes, including influences in the home, experiences at school and peer pressure[3], so multi-sector approaches will be needed.

c) What could be done to improve this work?

Institutions could develop and share best practice in tackling gender imbalances more systematically, with support from SFC. The systemic issues underpinning gender imbalances are not specific to one sector or to any particular institution, and require holistic approaches. SFC is well-placed to promote positive sector-wide action, working in partnership with organisations such as the Equality Challenge Unit, to share good practice and commission or undertake research to identify what works and how good practice can be scaled up.

d) What could be done to improve this work and what do you think the gaps are, and how can these gaps can be filled – by the sectors, SFC and SDS?

Gender bias is influenced by a range of societal factors from very early in life, before school and across society, and this needs to be a core focus for work. It does not just concern the education sector, and the education sector working alone is unlikely to be able to fix such deep-rooted issues. If SFC and Scottish Government can sponsor or otherwise support programmes which enable universities to work more closely with schools and parents then this might be helpful. Likewise, some career destinations are traditionally associated with one gender or the other, and promoting positive images and examples of where this is changing at an early stage could have impact. Again, it is crucial for a successful outcome for effective cross-sector work to be undertaken between educators and business and industry. Universities have extensive links with employers on a range of activities but support from Skills Development Scotland to facilitate engagement specifically in relation to gender may be beneficial.

2. Much of the work to tackle gender imbalances by the sectors requires close partnership working with schools:

a) How can colleges and universities enhance their work with schools?

Universities can build on the many existing partnerships they have with schools.

[3] See (for example) http://www.iop.org/publications/iop/2013/file_62083.pdf
http://www.iop.org/education/teacher/support/girls_physics/file_58196.pdf
http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/00389-2007BKT-EN.pdf

Research suggests that positive role models are a crucial aspect of breaking down barriers (of whatever form).[4] At a practical level, some members reported that that universities could identify and encourage more staff and students to act as role models in their outreach work, to inspire children to pursue their interests. It is important that this role is not tokenistic and that the additional responsibility this would entail for staff complements their positions as discipline leaders and leaders in their field. Staff and students should receive appropriate support to act as role models and otherwise involve themselves in outreach work, which might come jointly from institutions and SFC. Some institutions may also be in a position to build on existing practice to provide additional opportunities for pupils and teachers to participate in campus-based activities to add more of a focus on broad subject choices to their work on these occasions.

At a strategic level, there may be opportunities for universities to work more with local education departments on strategy and priorities so that education departments can relay these to schools and teachers to embed activities in curricula. Partnership with local education departments may allow the relationships between schools and universities to become more systematised and sustainable. Universities already support in-curricula delivery for varied purposes, and the resources within universities, such as staff and equipment, should be recognised and used to reach out to schools to inspire the next generation and expose them to potentially cutting edge research activity.

Universities could help to promote career opportunities to pupils, teachers and parents in liaison with industry, which would also support good information, advice and guidance in schools, especially around subject choices for university entry.

Universities Scotland and School Leaders Scotland are working in partnership to enable engagement between the two sectors in the near future to tackle challenges below and to enable further progress in effective school/university engagement.

b) What are the current issues in working with schools?

There are opportunities for greater coordination and consistency in institutional activity with schools. This can support the embedding of effective relationships between organisations. For example, partnerships may sometimes be based on personal relationships which are very effective but which are dependent on individuals and are therefore at risk if the respective staff change roles or move on. Due to the quantity of outreach work carried out by universities, schools may be approached on different occasions by different people, which schools can find overwhelming. A more coordinated approach to school liaison would ease pressure on schools in terms of offering in-school and off-campus access to pupils. This may be assisted by greater partnership with local education departments.

Identifying sufficient time, personally and in the curriculum, can be a barrier to effective partnerships. There may be a perception in some schools that the outreach activities on offer from universities are time-consuming and may detract from curriculum time, which means that teachers may not be able to accommodate some events or activities. Extra-curricular activities can rely on teachers giving up their own time, which some may be unable or unwilling to do.

Rurality may be an issue for some pupils if they have trouble accessing, or being aware of, opportunities of interest to them.

[4] For example, "Someone like me can be successful: Do college students need same-gender role models? Penelope Lockwood, University of Toronto, 2006

c) What can SFC do to support this work?

SFC can have three main roles as researchers, funders and facilitators:

- Support research to better understand the issues and what works, and support the development of more structured guidance on what works for institutions; support the development and sharing of good practice
- Support institutions to develop subject-specific, multi-agency resources aimed at addressing gender imbalances in key target subjects and at key points in pupils' progress through school.
- Continue to fund partnership work with schools. Some outreach programmes may need longer than three years to demonstrate impact.

3. The key aims and subject focus for the gender action plan are outlined in the consultation document:

a) Do you think they are appropriate? Why/Why not?

In 2014, Universities Scotland undertook research into the issue of gender imbalance. In sharing this research with SFC, the SFC and Universities Scotland agreed in October 2014 that an effective gender action plan would:

- acknowledge that improving aspiration and attainment among parts of the male population is a key issue;
- recognise that this issue, and the issue of different gender balances in different subject areas, is one which has its roots in the choices made by individuals at school level; *and*
- embody an holistic approach, part of which is about building on universities' work to promote aspiration and opportunity for learners to make choices which are different from their gender's 'norm', but also understanding how this relates to the work of schools and other influencers to promote the full range of higher education opportunities to both genders.

In light of this, there may be value in reshaping the aims and outcomes of the gender action plan under consultation to reflect the broader perspective and the existing practices in this area. Crucially, the aims and outcomes should be considered with a view to ensuring they are evidence-based and will drive positive policy and practice which will meet the collective goal of the HE sector to reduce gender imbalance.

There will be value in the call for evidence from institutions on institutional practice and the research to be conducted by the HEA to identify existing good practice and to identify schemes or policies which can be built upon for enhanced impact.

In the interests of efficiency and ensuring that SFC and institutional resources are targeted at actions which deliver a real benefit to society, it is worth considering the broader equalities landscape within which the SFC Gender Action Plan will sit. Existing commitments through SFC Outcome Agreements and institutional Equality Duties should be considered to ensure that work from the SFC Gender Action Plan complements, and not duplicates, activity or reporting requirements which are already in place. This is

particularly relevant to aim 1 in relation to setting an outcome of mainstreaming gender which can be evidenced in institutional mainstreaming reports on equality duties.

The setting of sector-wide targets (e.g. 75:25) overlooks the complexity of how such imbalances come about and are unlikely to have a major impact on changing the entrenched social attitudes that perpetuate the problem. Careful thought should be given to whether these aims would drive positive behaviour or if they may have unfortunate, unintended consequences. It would be unacceptable, for instance, if institutional commitments to free and fair admissions processes committed to recruiting based on academic excellence were undermined by the unintentional introduction of gender quotas. A 'targeted approach' should, therefore, mean that underrepresentation should be targeted for action, not that the 75:25 balance is to become a target to be achieved at the expense of equal treatment.

Universities are keen to continue to improve gender balance and are keen to see stretching but realistic targets set at a local, institutional level, which will be able to more closely reflect institutional action rather than sector-wide, absolute aims which, whilst seemingly aspirational, may set unrealistic goals.

b) What outcomes do you think are missing? Why do you think they are important?

The sector should work within a holistic framework of guidance and shared good practice, based on high-level, reliable research and supported across all levels of education by appropriate funding.

SFC should have an up-to-date, evidence-based overview of subjects in the sector in order to compensate for different male/female ratios at different institutions.

Consideration should be given to including performance and progression as outcomes alongside recruitment, engagement and retention (which would include addressing the question of how to measure and understand 'engagement'.

4. What are the key activities colleges and universities should undertake to meet these outcomes?

Key activities are likely to include:

- Enhancing and (where appropriate) growing existing programmes of activity;
- Developing new programmes of activity using existing vehicles;
- Ensuring multi-agency partnership approaches when liaising with schools
- Working with Professional, Statutory and Regulatory Bodies to promote and target different career opportunities to under-represented genders;
- Promoting positive images – e.g. imagery in promotional materials; visual positive role models in the form of other students/teaching staff; real life case studies in teaching and working with representatives of the career destination sectors;
- working with teachers, guidance teachers, parents and significant influencers to develop their abilities to support and encourage children's decision-making;
- HEIs could contribute to research to understand the issue and what works better.

5. How can SFC best support the sectors to deliver these outcomes?

- Funding to: support proposed expansion of project work; incentivise students into courses where there is gender imbalance; initiatives which encourage school pupils and their teachers to access work experience in sectors with gender imbalance; facilitate partnership working between HEIs, colleges and schools/pre-schools to reduce gender stereotyping from a very early age.
- Support the development and sharing of best practice, highlighting, publishing and rewarding good practice.
- There is a need for research to look at the broader picture, and to provide evidence on the way the sector can influence meaningful change – SFC could do/support this.

6. What level of change can we expect from both sectors in 10 years?

Sustained positive change partly depends on the gender balance of Higher/Advanced Higher candidates in different subjects, as subject choice plays an important role in admissions decision-making. It will also take some years for change to register, as it will rely on subject choices in S3/S4 by pupils looking to enter university 3-5 years later. Universities only have limited scope to influence gender imbalances in subject choice, because these imbalances partly reflect gendered views established at a young age. However, by increasing outreach and community engagement activities, which would hopefully lead to positive feedback from those on programmes with gender minorities, we would expect to see an increase in applications, recruitment, retention, progression and performance in gender minority subjects. The level of success at university level might be expected to reflect the progress of change at school level.

The sector needs clear, realistic, research-based guidance; and any actions and targets need to be supported by funding and underpinned by principles of both academic excellence and fairness.

7. Is there any further evidence you would like to draw to our attention on what works to address gender imbalances?

Universities Scotland conducted research which was presented to and accepted by SFC in October 2014. This research will be shared with SFC again to inform the development of the Gender Action Plan.

The following are a small number of examples of activities already undertaken in the sector to give a flavour of the range of activities across institutions to encourage greater gender balance and in line with institutions existing commitments to equality and diversity.

- Athena Swan

Athena Swan provides an effective framework and process for self-assessment at institutional and departmental level, and enables the identification of priority issues and 'SMART' objectives to address them. At departmental level in particular it includes detailed consideration of the student 'pipeline'. This is why partnership working – with schools but also colleges, local authorities, PSRBs and employer organisations – is so important, and a prominent feature of initiatives that work well.

Scottish institutions have 11 institutional Athena Swan awards and 31 departmental awards.

- Children's University

Four Children's Universities now exist in Scotland in Edinburgh, Glasgow, Dundee and Aberdeen and work with the universities of Aberdeen, Abertay, Dundee, Strathclyde, and Queen Margaret. The Children's University aims to promote social mobility by providing high quality, exciting and innovative learning activities and experiences outside normal school hours to children aged 7-14 (and 5 and 6 year olds with their families) and engage the wider communities as learning partners in the realisation of this. The Children's University works within, and with the support of, local authorities and schools.

The CU can also offer targeted learning experiences aimed at addressing gender imbalance in a variety of subjects. For example, in May and June activities at QMU Children's University were aimed at female pupils with a view to inspiring them into considering a career in Computer Science. There is also a series of activities planned for August/September 2015 which is aimed at addressing the male gender imbalance.

- Broken Bodies

Broken Bodies P5 to S6 (Queen Margaret University) - this programme targets primary and secondary pupils and is aimed at inspiring female pupils to consider a career in science and male pupils a career in nursing/allied health professions. Working with local schools, Broken Bodies offers pupils the opportunity to attend on-campus subject specific hands-on workshops in areas such as Podiatry, Radiography, Occupational Therapy, Food Science and Nutrition. The workshops are delivered by current QMU students, affording them the opportunity to gain experience of working with young people as well as acting as role models to the participants. The programme attracts up to 750 participants each year.

http://www.qmu.ac.uk/marketing/press_releases/Broken_Bodies_2013.htm

- St Andrews Inclusive Curriculum Tool and Unconscious Bias Training

The University of St Andrews introduced an Inclusive Curriculum Tool in 2013 which provides an internal compliance guide signposting staff to good practice in the different stages of curriculum design, delivery and assessment with respect to equality and diversity. Linked to this, the institution launched 'Mapping the Geographies of Teaching and Learning', which explores diversity in teaching at sub-honours in the Faculties of Arts and Divinity. The overall aim of this project was to map the geographies of where authors of sub-honours readings are based (institutional affiliation, country of origin) and to explore whether Black and Minority Ethnic (BME) issues, global South perspectives and gender-related issues are addressed in modules.

In addition to having provided Unconscious Bias training, the University is currently drafting a "Strategy to tackle Unconscious Bias" to launch by Nov 2015. The strategy is possibly the first of its kind to be developed in a UK HEI, and will outline actions endorsed by the Vice-Principal Equality & Diversity Champion to widen the suite of awareness provision to online videos; a bespoke online training module with assessment; and facilitated panel talks by academic experts.

- Educated Pass (University of Edinburgh)

Educated Pass works with local boys' football teams. The programme is delivered over the course of six sessions throughout the year. The project is innovative in that it targets boys - particularly those from

under-represented groups - through their coaches and clubs and builds upon their commitment to sport to generate a similar interest and commitment to education. It uses sports related courses as a hook, but also gives general advice on school, college and university pathways.

The Educated Pass Annual Report showed that over 90% of the boys identified PE as their favourite schools subject but most lacked the awareness to aim for university or the confidence in their skills to do so. By the end of the programme the programme had more than doubled the number of participants aiming for university (39% to 83%) and had vastly increased their confidence in attending university (37% to 88%).

http://www.ed.ac.uk/student-recruitment/widening-participation/projects/educated-pass

- Institute of Physics Ashfield Music Festivals

The University of the Highlands and Islands – working with the Institute of Physics - have held the Ashfield Music Festival to encourage engagement in STEM - Ashfield Music Festival is one day off-timetable activity in which students develop skills in enterprise and learn how physics applies in the context of setting up a music festival by taking on one of six roles: project manager, health and safety advisor, construction manager, electrical engineer, sound engineer or lighting engineer. They are supported by real-life scientists – referred to as "experts" – and must use a mixture of physics-based knowledge, creativity and skills associated with enterprise in order to win the contract to build the main stage.
http://www.iop.org/education/teacher/extra_resources/ashfield/page_39512.html

Universities Scotland
US/SFC/SG Liaison Committee

28 October 2014
Paper Number 2
Agenda Item 5

Gender Balance in Student Intake

Summary

1. Universities Scotland has reflected on the Ministerial Letter of Guidance and discussed gender balance in student intake at Learning and Teaching Committee on 2 October. Learning and Teaching Committee agreed it should provide support and guidance to the Funding Council in contextualising the challenges and identifying meaningful progress on this issue.

2. Universities Scotland would like to agree a practical and evidence-based approach to management of these issues with the Scottish Funding Council.

Background

3. The Ministerial Letter of Guidance to SFC from July 2014 introduces a new strategic objective:
   "to encourage action through outcome agreement dialogue with colleges and universities that addresses the underrepresentation of women on the governing bodies of colleges and universities, at senior levels and gender balance among student intakes for some key subjects."

4. The letter goes on to say:
   "*I also want a renewed focus on reducing gender segregation in participation: too many college and university courses are dominated by either men or women. I refer later in the guidance to the specific Wood Commission recommendation on this for colleges which I support. But I want the SFC to use the outcome agreements negotiations in both colleges and universities to contribute to improvement.*"

5. Universities Scotland is committed to fair access irrespective of gender – and identifies activity already undertaken by institutions to support this. **Annex A** contains illustrative examples. Underpinning this desire for partnership working and progress is the existing commitment of institutions to equality and diversity and to ensuring that processes and practices are free from discrimination and that potential applicants, applicants, students and graduates are treated fairly and equally regardless of gender.

6. Universities Scotland has analysed publicly available data on school attainment, school leavers and UCAS applications to provide further insight into this complex area. A breakdown of evidence is provided in **Annex B**. The evidence and examples identify:

    - One of the key issues of gender imbalance in access to education is the lower proportion of males attaining qualification levels which prepare them for university entry, and the consequent female/male imbalance in the undergraduate population.
    - That some subjects at undergraduate level typically have a majority of one sex or the other – with some typically having a female majority and others a male majority. In general, the evidence shows that this is a replication of the gender balance of corresponding subject choices made at secondary school.
    - Universities have a range of action in hand to promote opportunities to both genders, e.g. to promote STEM subjects to female students.

Action

7. Consideration of the evidence suggests an approach to the Ministerial Letter of Guidance which:
    - Acknowledges that the promotion of aspiration and attainment among parts of the male population is an issue.
    - Recognises that this issue, and the issue of different gender balances in different courses, is one which has its roots in the choices made by individuals at school level.
    - Requires a holistic approach, part of which is about building on universities' work to promote aspiration and opportunity for learners to make choices which are different from their gender's 'norm', but which needs to understand closely how this relates to the work of schools and of other influencers to promote the full range of higher education opportunities to both genders.

8. SFC are asked if they agree with this approach.

Back to AGENDA

Annex A: Illustrative examples of activity to reduce gender imbalance

9. The following are examples of innovative programmes Scottish universities run to encourage participation in higher education irrespective of gender.

10. **Heriot-Watt University**'s Dragonfly project[2] which seeks to motivate girls to be interested in STEM subjects: HeadStart is a well-established education programme whose aim is to encourage students interested in mathematics or science to consider technology-based careers. It provides an opportunity for those in Year 12/S5 to spend up to a week at university prior to making their UCAS application. Dragonfly Days are specifically designed for females going into Year 13/S6 to develop basic project management skills further by working with others

11. **The University of Edinburgh**'s Educated Pass Project[3] which works with boys' football teams to encourage boys to combine education and sport and to be interested in university. The project is innovative in that it targets boys from under-represented groups through their coaches and clubs and builds upon their commitment to sport to generate a similar interest and commitment to education. It uses sports related courses as a hook, but also gives general advice on school, college and university pathways.

12. The **University of Dundee**'s Women in Science Festival[4] that seeks to celebrate and encourage women in STEM and is open to the public. This festival is organised in conjunction with other partners including the **University of Abertay Dundee** and the **University of St Andrews**.

13. **Royal Conservatoire for Scotland**'s run Entry to the Creative Industries (Production and Performance) Project on behalf of FOCUS West and offers tailored support to S5 and S6 pupils, irrespective of gender, who are interested in progressing in the performing or production arts. This programme works with pupils from the 37 FOCUS West schools with an interest in progressing to college, university or higher education institutions with specific interests in music, drama, dance, film, television, technical and production arts.

14. **The University of St Andrews**, in partnership with Equate Scotland, has developed an Unconscious Bias workshop for staff involved in student recruitment which will be delivered in November 2014.[5] The workshop will reflect on research that shows that unconscious bias can have a dramatic effect on our judgements and will discuss how unconscious bias can have a negative impact on women in the workplace and student admissions. The workshop is part of a broader set of work including the development of the University's 'Inclusive Curriculum Toolkit'[6] which was implemented in 2013

15. Higher education institutions' commitment to overcoming gender imbalances can be demonstrated clearly through the activities undertaken across almost all institutions to achieve institutional and subject recognition for increasing the number of female students in science, technology, engineering and mathematics. In Scotland, sixteen universities have achieved **Athena Swan** accreditation, the **universities of Edinburgh and Glasgow** were accepted as trial participants in the Equality Challenge Unit's Gender Equality Charter Mark and now hold three Bronze awards between them and seven Scottish institutions are recognised through **Project Juno** by the Institute

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[2] www.headstartcourses.org.uk/
[3] http://www.ed.ac.uk/schools-departments/student-recruitment/widening-participation/projects/educated-pass
[4] http://www.dundee.ac.uk/revealingresearch/newsandevents/womeninscience/
[5] https://www.st-andrews.ac.uk/pdms/?CourseID=4546
[6] www.st-andrews.ac.uk/hr/edi/inclusivecurriculum<http://www.st-andrews.ac.uk/hr/edi/inclusivecurriculum>)

of Physics for their demonstrable efforts and achievements in encouraging female students to study physics at university.

Back to AGENDA

Annex B: Background analysis of gender and SQA results, gender and school leaver statistics, and gender and UCAS applications and acceptances

Summary

1. In this annex we undertake some simple analysis of publicly available data relating to gender that is relevant to entrants to university, in order to better understand the gender balance issues in university entrants in some courses.

2. We have examined data on School leavers to look at attainment levels by gender, focusing on levels that could potentially qualify someone to enter university.

3. Finally, we have looked at UCAS data on applications and acceptances by subject and gender.

4. There is much that could be done with this data and our analysis has been relatively superficial, but allowing us to get some idea of the background. Key conclusions at this stage appear to be:

    - fewer male pupils take Highers than Standard Grades (although we are looking at different cohorts);
    - male pupils are less likely to achieve high grades at both Standard Grade and Higher;
    - some subjects at Standard Grade, Higher and HN level are more likely to be taken by one gender than another and this patterns to continue to university applications;
    - a higher percentage of the female S4 role complete S6 than the male S4 role, though this gap has narrowed slightly since 2009-10; and
    - female pupils are more likely to have attained relevant qualifications for university entrance, except at 3+ qualifications at SCQF level 7 (e.g. Advanced Higher), where more male pupils obtain this level (although the numbers are small for both sexes).

SQA data

5. We have looked at SQA attainment data by subject and gender on Highers (since they are the most common entrance qualification for Scottish domiciled applicants), Standard Grades (to see how early any trends start) and Higher National Qualifications, recognising that many students enter university via college. Given the small numbers of students taking Advanced Highers, we have not analysed this data at this stage. We have used data from 2013.

<u>Highers</u>

6. Table 1 shows entries to Highers by subject, sorted by the female entries. Given that there were over 60 subjects offered at Higher level in 2013, ranging from English with over 30,000 entries to Classical Greek with just 8 entries, we have focused on subjects with more than 2,000 entries (this includes all subjects with at least 1 per cent of total Higher entries).

Number of entries and attainment level

7. Overall, female students account for 56 per cent of entries to Higher and are more likely to get an 'A' grade than male students (30% will get an 'A' compared to 26 per cent of male students) and have a higher pass rate (81 per cent as opposed to 77 per cent for male students).

8. Table 1 shows that for these subjects a higher percentage of female entrants get an 'A' in all but two cases, and in all but one case the pass rate is higher than for male students (and in one instance there is no difference in the pass rate).

Subject choices

9. In addition, Table 2 also indicates that there are discrepancies in terms of the subject choices of male and female candidates. We have chosen to highlight subjects where there are 35 per cent or less of one gender, but this is arbitrary. In the following subjects, less than 35 per cent of entrants are female:
   - Computing;
   - Physical Education;
   - Physics; and
   - Graphic Communication.

   It is interesting to note that female entrants are slightly more likely to get an 'A' grade than male entrants in all these subjects.

10. Similarly, less than 35 per cent of entries are from male pupils in the following subjects:
    - Art and Design;
    - Administration;
    - French;
    - Psychology;
    - Drama;
    - Human Biology; and
    - Religious, Moral and Philosophical Studies.

    However, only in Human Biology are male entrants more likely to get a grade 'A'.

11. In some subjects like Chemistry and Maths, participation is more even, but given that there are more female entries than male entries for Highers overall, we are still seeing fewer women than you would expect if participation was equal.

Table 1: Higher entries sorted by percentage of female entries

Title	Total entries	Percentage of entries		Percentage of Grade A		% difference female to male Grade A	Percentage pass rate		% difference female to male pass rate
		Male	Female	Male	Female		Male	Female	
Art and Design	6,494	19	81	22	29	6	82	89	7
Administration	2,403	24	76	24	29	5	76	82	6
French	4,239	24	76	42	43	1	82	83	1
Psychology	3,370	26	74	30	40	10	70	79	9
Drama	2,638	27	73	18	22	4	85	88	3
Human Biology	4,126	29	71	23	21	-2	74	70	-4
Religious, Moral and Philosophical Studies	4,144	31	69	25	32	7	76	82	6
Biology	9,971	36	64	27	27	0	70	71	1
Modern Studies	8,038	39	61	25	34	8	83	87	5
English	30,436	41	59	18	23	5	72	78	6
Business Management	7,306	42	58	25	33	8	74	81	6
History	10,344	43	57	31	39	7	87	90	2

Music	5,093	46	54	55	52	-2	93	94	0
Geography	7,787	49	51	31	40	10	77	84	7
Chemistry	10,004	49	51	31	31	0	78	78	0
Mathematics	20,665	52	48	25	25	1	72	74	2
Product Design	2,387	64	36	10	19	9	69	82	13
Graphic Communication	4,066	69	31	31	36	5	81	86	5
Physics	8,793	71	29	26	31	5	75	81	5
Physical Education	6,890	71	29	23	30	6	90	91	1
Computing	3,989	78	22	23	27	4	70	75	5
Total	**183,489**	**44**	**56**	**26**	**30**	**4**	**77**	**81**	**4**

Standard Grade results

12. In Table 2, we have looked at Standard Grade subjects by subject and gender of entries. Again, in order to make this manageable, we have focused on a subset of subjects, in this case all those with more than 3,000 entries (which includes all subjects with at least 1 per cent of total entries).

Entries and attainment levels

13. Interestingly, 51 per cent entries overall are from male students, in contrast to Higher entries which had only 44 per cent entries from male pupils (although note that we are considering different cohorts).

14. There is also a difference in grades attained by gender. Female pupils were more likely to get a Credit grade (1-2) with 55 per cent of entries doing so as opposed to 47 per cent for male pupils. Male pupils were more likely to get a General grade (3-4) or Foundation Grade (5-6) than female pupils, with 42 per cent of male pupils achieving at General level as opposed to 36 per cent of female pupils and 11 per cent of boys and 8 per cent of girls achieving at Foundation level for a particular subject.

Subject choices

15. The following subjects have fewer than 35 per cent of entries from female pupils:
    - Graphic Communication;
    - Physical Education;
    - Computing Studies;
    - Physics; and
    - Craft and Design.

16. Subjects with less than 35 per cent of entries from male pupils are as follows:
    - Home Economics;
    - Administration;
    - Art & Design;
    - Biology; and
    - Drama.

17. This is not dissimilar to the pattern we saw for Highers.

Note

18. Note that 2013 was the last year in which pupils sat Standard Grades. Pupils will now sit National 4s and 5s instead of (General and Credit) Standard Grades. However, there are indications that

pupils will sit fewer National qualifications than was the case with Standard Grades and some schools may encourage able pupils to bypass National 5 exams and proceed directly to Highers. For all these reasons, the analysis of Standard Grade results may not be a good guide to future patterns in National 5 qualifications.

Table 2: Standard Grade results ordered by female entries

Subject	Total entries	Percentage of entries		Percentage of male entries with grades			Percentage of female entries with grades		
		Male	Female	1 – 2	1 – 4	1 – 6	1 – 2	1 – 4	1 – 6
Home Economics	4,209	24	76	27	88	98	55	96	99
Administration	4,821	25	75	28	71	98	47	83	99
Art and Design	10,864	29	71	35	95	98	58	98	99
Biology	20,276	35	65	52	87	99	52	87	99
Drama	6,135	35	65	48	90	98	66	95	98
Spanish	3,815	42	58	35	84	99	52	92	99
Music	8,855	44	56	73	95	99	78	97	99
Modern Studies	13,179	44	56	45	84	100	52	89	100
French	21,146	45	55	36	85	99	51	93	99
Business Management	5,789	45	55	61	94	99	66	94	99
German	4,415	48	52	36	86	99	53	93	99
Chemistry	18,785	50	50	62	93	100	64	94	100
Mathematics	38,685	50	50	36	79	99	37	80	99
English	45,565	51	49	38	97	99	55	98	99
History	18,948	51	49	49	81	99	61	88	99
Geography	15,960	56	44	49	82	99	57	87	99
Graphic Communication	7,344	67	33	51	90	99	62	95	99
Physical Education	15,046	69	31	63	97	99	62	97	99
Computing Studies	10,454	70	30	48	89	99	51	89	99
Physics	14,178	70	30	56	87	99	66	91	99
Craft & Design	10,283	77	23	44	89	98	51	91	97
Totals	**308,248**	**51%**	**49%**	**47%**	**88%**	**99%**	**55%**	**91%**	**99%**

Higher National Qualifications (HNQs)

19. Many students enter university having studied at college, either directly after school or after a period outside education, often in employment. We have therefore also looked at data on HN qualifications. Although data is available at a finer level of detail for HNCs and HNDs, for this initial analysis, we have looked at overall HN qualifications by broad subject area (superclass). This allows us to look at all subject areas, while maintaining a manageable number of subjects. Table 3 shows this.

20. Overall, there are slightly more male entries than female entries (53 per cent as opposed to 47 per cent).

21. There are 8 subjects with particularly low numbers of female entrants (less than 35 per cent). These are:

- Group Z: Transport Services;

- Group X: Engineering;
- Group Y: Oil/Mining/Plastics/Chemicals;
- Group V: Services to Industry;
- Group T: Construction and Property (Built Environment);
- Group M: Sports Games and Recreation;
- Group C: Information Technology and Information; and
- Group Q: Environment Protection/Energy/Cleansing/Security.

22. There are five subjects with particularly low numbers of male entries (less than 35 per cent):
    - Group G: Education;
    - Group H: Family Care/Personal Development/Personal Care and appearance;
    - Group P: Health Care/Medicine/Health and Safety;
    - Group J: Arts and Crafts; and
    - Group N: Catering/Food Services/Leisure Services/Tourism.

23. Group R: Sciences and Maths comes just outside our chosen cut-off with 36 per cent female entries. Again, there are similarities to the lists for Standard Grades and Highers.

Table 3: Entries to HN qualifications by superclass ordered by percentage of female entries. Source: SQA (2013)

Superclass	All entries	Male entries	Female entries	% male entries	% female entries
G Education/Training/Teaching	9,235	1,608	7,627	17%	**83%**
H Family Care/Personal Development/Personal Care and Appearance	24,152	5,177	18,975	21%	**79%**
P Health Care/Medicine/Health and Safety	35,610	8,779	26,831	25%	**75%**
J Arts and Crafts	21,401	6,758	14,643	32%	**68%**
N Catering/Food Services/Leisure Services/Tourism	12,851	4,317	8,534	34%	**66%**
F Area Studies/Cultural Studies/Languages/Literature	1,005	389	616	39%	61%
L Performing Arts	15,112	6,016	9,096	40%	60%
B Sales Marketing and Distribution	23,971	9,968	14,003	42%	58%
D Humanities (History/Archaeology/Religious Studies/Philosophy)	3,043	1,318	1,725	43%	57%
E Politics/Economics/Law/Social Science	43,813	19,774	24,039	45%	55%
S Agriculture Horticulture and Animal Care	7,421	3,493	3,928	47%	53%
A Business/Management/Office Studies	99,721	48,272	51,449	48%	52%
K Authorship/Photography/Publishing/Media	23,366	13,216	10,150	57%	43%
W Manufacturing/Production Work	2,708	1,537	1,171	57%	43%
R Sciences and Mathematics	22,954	14,745	8,209	64%	36%
Q Environment Protection/Energy/Cleansing/Security	3,153	2,094	1,059	**66%**	34%
C Information Technology and Information	55,380	37,916	17,464	**68%**	32%
M Sports Games and Recreation	16,820	12,060	4,760	**72%**	28%
T Construction and Property (Built Environment)	20,365	16,520	3,845	**81%**	19%
V Services to Industry	8,967	8,084	883	**90%**	10%
Y Oil/Mining/Plastics/Chemicals	1,338	1,254	84	**94%**	6%
X Engineering	32,263	30,519	1,744	**95%**	5%
Z Transport Services	7,404	7,136	268	**96%**	4%
All Superclasses	**492,054**	**260,950**	**231,104**	**53%**	**47%**
-as percentages		*53%*	*47%*		

Scottish Government school leaver statistics 2012-13

24. Given that the SQA data on Standard Grades and Highers seemed to point to fewer male pupils achieving Highers, we have also looked at the school leaver destination statistics. These enable us to look at both staying on rates and at total qualifications achieved by the end of S6, which provides a useful addition to the SQA data which is about single entries.

Staying on rates

25. Table 4 shows the percentage of S4 cohort who remained at school until S6. Obviously, not all pupils who stay on to S6 will go to university (or wish to) and some pupils who leave before S6 will enter university, but most entrants to university direct from school complete S6. Between 2009-10 and 2012-13, more pupils have chosen to remain in school, but more female pupils than male pupils stay on. However, the gap has narrowed slightly over this time.

Table 4: Percentage of S4 cohort completing S6

	2009-10	2010-11	2011-12	2012-13	Change 2009-10 to 2012-13
Male	46.0	50.6	52.6	55.6	9.6
Female	53.9	57.4	60.1	62.9	9.0
All	49.9	53.9	56.3	59.2	9.3
Female to male difference	7.9	6.8	7.5	7.3	-0.6

Attainment of qualifications by the end of S6

26. The Scottish Government looks at a number of different attainment levels by the end of S6. There are four that are most relevant with regards to university entrance:
    - At least 3 SCQF level 6 qualifications (e.g. Higher) by the end of S6;
    - At least 5 SCQF level 6 qualifications (e.g. Higher) by the end of S6;
    - At least 1 SCQF level 7 qualification (e.g. Advanced Higher) by the end of S6; and
    - At least 3 SCQF level 7 qualifications (e.g. Advanced Higher) by the end of S6.

27. We are taking at least 3 SCQF level 6 qualifications as the minimum qualifications for university entrance, although we recognise that for many courses the required entrance qualifications will be higher (and in any case whether a student is offered a place will depend on the subjects that they have studied, the grades they have achieved, the course they are applying to, the institution and other factors, all of which are not represented in this data).

28. Unfortunately, if you look at the attainment of qualifications for entry to university, you see that although there has been an increased in the percentage of the S4 cohort with at least 3 SCQF level 6 qualifications by the end of S6, the gap between male and female attainment levels has widened slightly (despite an increase in both male and female attainment), as shown in Table 5. This is also true for attainment of at least 5 SCQF level 6 qualifications (see Table 6) and at least 1 SCQF level 7 qualification (see Table 7). However, there are slightly more male leavers with 3+ SCQF level 7 qualifications (e.g. Advanced Higher) than female students in absolute terms as shown in Table 8.[7]

[7] This data is presented differently because of how the Scottish Government data is presented.

Table 5: Percentage of S4 cohort with at least 3 SCQF level 6 qualifications (e.g. Higher) at the end of S6

	2009-10	2010-11	2011-12	2012-13	Change 2009-10 to 2012-13
Male	29.2	30.8	32.0	33.1	3.9
Female	37.3	39.8	41.8	43.6	6.3
All	33.2	35.3	36.8	38.2	5.0
Female to male difference	8.1	9.0	9.8	10.5	2.4

Table 6: Percentage of S4 cohort with at least 5 SCQF level 6 qualifications (e.g. Higher) at the end of S6

	2009-10	2010-11	2011-12	2012-13	Change 2009-10 to 2012-13
Male	19.1	20.4	21.7	22.4	3.3
Female	25.5	27.5	29.7	30.9	5.4
All	22.3	23.9	25.7	26.6	4.3
Female to male difference	6.4	7.1	8.0	8.5	2.1

Table 7: Percentage of S4 cohort with at least 1 SCQF level 7 qualifications (e.g. Advanced Higher) at the end of S6

	2009-10	2010-11	2011-12	2012-13	Change 2009-10 to 2012-13
Male	13.0	13.9	14.6	15.1	2.1
Female	16.3	17.7	18.3	19.5	3.2
All	14.6	15.8	16.4	17.3	2.7
Female to male difference	3.3	3.8	3.7	4.4	1.1

Table 8: Numbers of pupils leaving with at least 3 SCQF level 7 qualifications (e.g. Advanced Higher)

	2009-10	2010-11	2011-12	2012-13
Male	565	593	628	670
Female	497	511	525	582
All	1,062	1,104	1,153	1,252

UCAS data

29. Table 9 looks at UCAS data for Scottish domiciled applicants to universities across the UK (this is the data that is readily publicly available). This will include some applicants who ultimately attend universities in other parts of the UK (although this tends to be a small proportion of Scottish domiciled applicants) and will not include applicants domiciled in the rest of the UK, EU or the rest of the world. It also excludes part-time applicants, who normally apply directly to the institution. Therefore, this is only a partial picture of university applications and acceptances.

30. There are less than 35 per cent[8] female applicants in some subjects:

- Group H: Engineering;
- Group I Computer sciences;
- Group J: Technologies (note that there are relatively few applicants in this area);
- Group K: Architecture, Buildings and Planning; and
- Group Y: Combined Sciences.

31. These subjects are not unsurprising given the low uptake of Physics and Computing for girls at Higher.

32. There are less than 35 per cent male applicants in:

- Group B: Subjects allied to medicine;
- Group D: Veterinary Science, Agriculture and related;
- Group L: Social Studies;
- Group Q: Linguistics, Classics and related
- Group R: European Languages, Literature and related;
- Group W: Creative Arts & Design
- Group X: Education; and
- Group Y: Combined Arts.

33. This is perhaps not surprising given that Biology was not an especially popular choice for male entrants at Higher, and Art and Design and French have many more female entrants at Higher.

34. We have also looked at where there are differences between the application and acceptance rate by gender. Taking five per cent as a cut off, there are four subject areas where this happens and in all cases women are overrepresented in the acceptances. However, these subjects all have relatively low number of applicants. We also know nothing about the quality of the applications (including qualifications and e.g. relevant work experience) or precisely what courses are involved, or whether applicants have decided to pursue another subject, so it is difficult to draw any conclusions. There is also one instance, Group G: Mathematical Sciences where women are underrepresented in acceptances as opposed to applications, but again the numbers are small.

Table 9: UCAS applicants and acceptances by subject group

[8] We have used 35 per cent to be consistent with the SQA results, but it is an arbitrary figure. Given the gender imbalance in university applications, it could be argued that we should use asymmetric cut offs for determining imbalances for male and female applicants.

JACS3 Subject Group	Number of applicants		% of applicants		% acceptances		Difference between application and acceptance rate	
	Male	Female	Male	Female	Male	Female	Male	Female
Group A Medicine & Dentistry	543	736	42%	58%	42%	58%	0%	0%
Group B Subjects allied to Medicine	937	5,712	14%	**86%**	15%	85%	1%	-1%
Group C Biological Sciences	1,525	2,247	40%	60%	36%	64%	-4%	4%
Group D Vet Sci,Ag & related	90	274	25%	**75%**	14%	86%	**-11%**	**11%**
Group F Physical Sciences	1,002	602	62%	38%	61%	39%	-1%	1%
Group G Mathematical Sciences	231	158	59%	41%	64%	36%	**5%**	**-5%**
Group H Engineering	2,732	353	**89%**	11%	87%	13%	-2%	2%
Group I Computer Sciences	1,639	215	**88%**	12%	87%	13%	-2%	2%
Group J Technologies	83	6	**93%**	7%	86%	14%	**-8%**	**8%**
Group K Architecture,Build & Plan	470	169	**74%**	26%	70%	30%	-3%	3%
Group L Social Studies	867	2,053	30%	**70%**	29%	71%	0%	0%
Group M Law	530	854	38%	62%	35%	65%	-4%	4%
Group N Business & Admin studies	1,889	2,731	41%	59%	40%	60%	-1%	1%
Group P Mass Comms and Documentation	403	353	53%	47%	49%	51%	-5%	5%
Group Q Linguistics, Classics & related	141	309	31%	**69%**	28%	72%	-3%	3%
Group R European Langs, Lit & related	72	297	20%	**80%**	20%	80%	0%	0%
Group T Non-European Langs, Lit and related	3	0	**n/a**	**n/a**	n/a	n/a		
Group V Hist & Philosophical studies	334	410	45%	55%	44%	56%	0%	0%
Group W Creative Arts & Design	1,313	2,523	34%	**66%**	36%	64%	2%	-2%
Group X Education	153	1,246	11%	**89%**	10%	90%	-1%	1%
Group Y Combined Sciences	83	32	**72%**	28%	59%	41%	**-13%**	**13%**
Group Y Combined Arts	132	304	30%	**70%**	31%	69%	1%	-1%
Group Y Social Sciences combined with Arts	161	242	40%	60%	38%	62%	-2%	2%
Group Y Sciences combined with arts or social sciences	401	403	50%	50%	45%	55%	-5%	5%
Group Y Combined social sciences	55	38	59%	41%	45%	55%	**-14%**	**14%**
Group Z General, other combined and unknown	27	43	39%	61%	35%	65%	-3%	3%
Group Z No preferred subject group	2,918	3,479	46%	54%	n/a	n/a		
Total	**18,734**	**25,789**	**42%**	**58%**	**42%**	**58%**	0%	0%

Back to AGENDA