The Institution of Engineering and Technology

Institution of MECHANICAL ENGINEERS

Guidance on the Teaching and Assessment of Equality, Diversity and Inclusion (EDI) AHEP LO 11

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Introduction

As a response to the developments in the society, the Engineering Council UK, in its latest edition of UK Standard for Professional Engineering Competence and Commitment (UK-SPEC), has enhanced its emphasis on teaching and assessment of Equality, Diversity and Inclusion (EDI). As a result, the latest guidance for Higher Education Institutions (HEIs), Accreditation of Higher Education Programmes (AHEP 4), has been amended. It reflects this development and specifies the required minimum level of assessment of EDI for all accredited degrees from National Certificates to Integrated Masters. Universities that aspire to be accredited against the UK Engineering Council benchmarks are expected to demonstrate achievement of the further developed EDI learning outcomes (LOs) (as described in Part I - Curriculum content and assessment approach of this document) and to provide evidence of an inclusive environment underpinned by the mentioned EDI principles (see Part II - Institutional Culture of this document).

Academic environment and day-to-day activities in HEIs are largely based on fairness and academic ability to exercise judgement in this area. This document recognises the fact that many HEIs are already teaching the EDI principles and applying it to design and practice, including the approach to teamwork and some examples, toolkits, standards and relevant organisations are listed in Part III - Recommended Resources in Support of the Embedding of EDI into the Curriculum, of this document.

The definitions of EDI:

Equality: Ensuring individuals are viewed and treated equally, often understood in terms of the protected characteristics* of the UK Equality Act 2010.

Diversity: Anything that can make us different from others. This includes but is not limited to gender, age, disability, race, socio economic status.

Inclusivity: Ensuring everyone feels that they belong and can participate.

The detailed IET EDI strategy includes Action Plan

In addition to AHEP 4, UK HEIs based in in Wales, Scotland and NI are required to adhere to QAA benchmark statements.

*The protected characteristics set out in the UK Equality Act 2010 include age, disability, gender reassignment, marriage, or in employment only, pregnancy and maternity, race, religion or belief, sex or sexual orientation. However, more recently the list has been extended to include neurodiversity (ADHD, Autism, Dyslexia, Dyspraxia, Dyscalculia, Dysgraphia, Hyperlexia, Synaesthesia and Tourette Syndrome) and also socio-economic status.

Part I: Curriculum content and assessment approach

General principles

At the beginning of the journey to teach EDI it is necessary to demystify the language.
It is recommended to use different voices and experiences in course materials and media, as well as Hall's cultural iceberg model.

In-class discussions should facilitate understanding of Equity vs. Equality and why one might aspire to achieve equity. Example of different needs can be used to illustrate this.

It is recommended that EDI is taught by Engineering department staff, supported by other departments who have more expertise in this area and who can bring a broader context, so that the essential concepts can be embedded and explained in a pragmatic and practical way.

Also the inclusion of international context is important: students should be made aware that cultural differences will have impact on delivery and implementation of EDI around the world. Workshops should include group work around cultural differences, is very important but it must be sensitively planned and delivered. Departments may consider involving students in the design and delivery of exercises.

Here are two options of embedding EDI in Engineering curricula for delivery and assessments.

Option 1: It is recommended that teaching of EDI is embedded at all levels of study so that it may be a recognisable theme throughout the programme.

The delivery and assessment strategy can be delivered as follows (an example of the delivery and assessment, in case of IEng and CEng degrees; for complete table of qualifications and LOs see AHEP 4 [2]):

L4: Develop awareness within teaching of group work; EDI case studies and videos, followed by group discussion exercises.

L5 and L6: Assess through coursework and project reports to include reflective writing on EDI impact on the design and group work (if appropriate through supervisor and peer assessment).

Advantages

- Integration: Ensures continuous and progressive exposure to EDI, enhancing deep understanding across various contexts
- Alignment with Standards: Complies with accreditation requirements, fostering an inclusive educational framework.

Disadvantages

- Resource Demand: Requires significant investment in staff training and curriculum adjustment.
- Consistency Challenge: Maintaining uniform EDI emphasis across diverse courses is difficult.

Part I: Curriculum content and assessment approach

Option 2: Teaching as a separate module is also acceptable if the content is appropriate for the programme and in context of that programme. This can be then assessed withing this module or as a part of project module (providing it has meaningful assessment weighting).

Advantages

- Depth of Focus: Allows for concentrated exploration of EDI, led by specialized staff.
- Curricular Flexibility: Adaptable to specific program needs, offering targeted EDI education.

Disadvantages

- Isolation Risk: EDI might be perceived as ancillary, lacking integration with the core curriculum.
- Continuity Gap: Potential disconnect between EDI principles and other study areas.

Both options present viable pathways for EDI integration, each with distinct benefits and challenges. The choice depends on institutional priorities, resources, and educational strategies, ensuring effective incorporation of EDI into the curriculum.

Examples of effective delivery of EDI concepts:

Development of awareness within teaching of group work; online personality and learner type tests, videos, role play and associated group discussion exercises, relating EDI to real-world engineering problems, particularly during design exercises, including completion of equality impact assessment (example from UK RI guidance and template). Some examples of delivering EDI concepts include, but not limited to:

- Case studies to highlight EDI values in engineering solutions.
- Inviting guest speakers from industry to provide industrial context and present case studies to illustrate the importance of EDI awareness.
- Discussion around related legal framework and policies
- Leadership and management skills teaching, for dealing with diverse engineering teams and ensuring inclusive work environments.
- Case studies demonstrating successful EDI integration in course design.

Examples of effective assessment of EDI concepts:

It is recommended that the assessment of EDI be integrated into existing assignments such as, coursework, discussion group exercises and project reports. This is likely to require some staff training. Some examples of assessing EDI include, but not limited to:

- Within all types of project work, where the student may produce a risk assessment of the EDI considerations of their decisions.
- Assessment of EDI understanding through reflective essays, portfolios, presentations, and case studies.
- Marking criteria to include EDI perspectives (consider use of rubrics).

Part II: Institutional Culture

When a HEI is considered for accreditation, institutional culture and resources available will be a part of the evaluation process. AHEP4 states that 'Departments delivering accredited degrees are expected to promote equality, diversity and inclusion in line with applicable national regulatory frameworks, as well as embedding inclusive design within the curriculum where relevant'.

Comprehensive training should encompass essential aspects of EDI, addressing the teaching and learning principles as well as staff recruitment, criteria for promotion and behaviours. Access to training, support and mentoring should be made available to students, academic and support staff.

Reasonable Adjustments:

- Is the department deploying the latest sectorial good practice?
- Departments should always consider reasonable adjustment for an AHEP LO if strong rationale exists. You should always consult with your accrediting body if in doubt (e.g. a presentation can be replaced by a video recording in cases when this is appropriate).

Example activities:

- Relevant staff training (behaviours)
- Promoting EDI in STEM
- Online presence of relevant content including role models, EDI events etc.
- Student-led EDI activities

Example policies and support available:

- Training
- Mentoring
- Equality, Diversity and Inclusion Policy
- Harassment and Bullying
- Religion and Belief Policy (PDF)
- Staff Harassment Advisers
- Transgender equality and gender identity
- Disability Confident: Recruiting, managing and developing people with a disability or health condition (Gov.UK)
- Neurodiversity

Examples of reports and engagement with initiatives such as:

- EDI strategy report
- EDI annual report
- Equal pay audit
- ATHENA SWAN Charter initiative
- Stonewall initiative etc.

Part III - Recommended Resources in Support of the Embedding of EDI into the Curriculum

Toolkits

Royal Academy of Engineering (RAEng)
Advance HE
The University of Texas at Austin
Tomorrow's Engineers
Inclusive Engineering
Promoting equality and diversity in schools (in EU)
EDI-toolkit
IET Inclusive thinking campaign

Standards

BS ISO 30415:2021 - TC Human resource management. Diversity and inclusion
BS 76005:2017 Valuing people through diversity and inclusion. Code of practice for organizations
BS Inclusive Workforce Solution Pack

Organisations, groups and media

The IET: IET EDI strategy and Action Plan.
UK RI: EDI Strategy and Action plan
Employers Network for Equality & Inclusion: https://www.enei.org.uk/
Association for Black & Minority Ethnic Engineers (afbe): https://www.afbe.org.uk/
The Women's Engineering Society (WES): https://www.wes.org.uk/
WonkHE Debate: WONKHE
AdvanceHE: Race Equality Charter
Championing Women in STEM: WISE Campaign
Business Disability Forum
Gov.uk: Disability Confident Scheme
IET Neurodiversity network: this is for IET members to gain peer-to-peer support (contact via inclusion@theiet.org)
Global Approach: UN

Note: This document is reviewed and updated regularly. Please ensure you have the most up to date version of this guidance, available via the IET website.

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