



## Needs analysis for STEM Higher Education in Pakistan

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*In partnership with: The British Council*

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# 1. Executive Summary

The Higher Education Academy (HEA) is a global body that supports improving teaching in Higher Education, and is actively working in over 20 countries, with more than 90,000 HEA Fellows across the world.

The HEA recently worked with the British Council in Pakistan in order to support improvements in teaching in Sciences, Technology, Engineering and Maths (STEM) with higher education institutions in the country. This included a survey of universities in Pakistan, delivery of a pilot STEM teaching programme, and evaluation of these.

The work has demonstrated that there are a number of challenges for STEM teachers in Pakistan, namely:

- > Infrastructure
- > Class Size
- > Strategic and Surface Learning
- > Student Transitions
- > Differentiated Learning
- > Developing Practical Skills
- > Curriculum Design and Outcome-Based Education
- > Employability
- > Technology Enhanced Learning

This report provides further analysis of these issues and a review of the pilot workshop conducted by the HEA. It concludes with recommendations for further teaching programmes for STEM teachers in Pakistan that would help with developing innovative teaching to maximise learning within their existing infrastructure. These are:

- > A Certificate in Learning and Teaching in Higher Education programme, as a next step for pilot workshop attendees
- > Further STEM teaching workshops for other teachers in Pakistani HEIs
- > An Associate Fellowship Programme for PhD students from Pakistan, based in the UK.

Further details of these proposed programmes is provided in the appendices.

## 2. Project Brief

The overall aim of this project was to conduct a 'needs analysis' of the STEM Higher Education sector in Pakistan. This information was used to develop and pilot a programme to build the capacity of tertiary teachers to incorporate innovative pedagogies to deliver higher education programmes in the Sciences, Technology, Engineering and Mathematics.

Evaluation of the pilot programme and the survey results will inform a deeper understanding of the sector requirements, and the optimum strategy for developing and embedding best practice for STEM teaching across the Pakistani Higher Education sector.

## 3. Background

Globally, STEM is high on the political and economic agenda with employers wanting to recruit people with high level skills in Science, Technology, Engineering and Mathematics. Tertiary STEM education is critical in developing the STEM pipeline required to deliver an effective workforce.

Those responsible for developing graduates to meet the needs of industry in Pakistan should have a sound understanding of current theories and practice of teaching and learning in higher education, in both face-to-face and online learning, to respond to this agenda.

## 4. The Higher Education Sector in Pakistan

There are approximately 180 Higher Education Institutions (HEIs) in Pakistan accredited by the Higher Education Commission (HEC). Whilst there has been considerable growth in the number of students attending a HEI, currently this remains at only 9% of potential students. For Pakistan to achieve its aspiration to move to a knowledge-based economy, it is critical that more young people are given access to high quality Higher Education. This requires that access to Higher Education is widened and that the quality of teaching in the HE sector meets the needs for 21st Century employment.

This presents particular challenges to those working in the sector. Expanding numbers means larger classes, with students with a more diverse range of prior knowledge, aptitude and experience. Furthermore, industry is requiring graduates with critical thinking and problem solving skills; they want them to be creative, flexible and entrepreneurial, with the growth mind sets required for life-long learning. These types of skills are not developed using didactic, teaching models. Academic development is required to support the Higher Education sector in delivering better quality education to increasing numbers of students.

## 5. Methodology

Following familiarisation with the HE sector in Pakistan, a 3-step process was employed to identify and develop an optimal approach for enhancing learning and teaching in STEM disciplines in the Higher Education sector.

### **1. Audit of Teaching Practice in Pakistan Higher Education Sector (STEM)**

A survey was developed by the HEA and distributed to Higher Education institutions across Pakistan by the British Council and the Higher Education Academy (Appendix I).

### **2. Develop, deliver and evaluate a 5-day workshop for Higher Education practitioners in STEM disciplines**

#### **2.1. Pre-course Survey and Engagement**

A more detailed survey (Appendix II) was sent to participants in advance of the workshop. The HEAs' Virtual Learning Environment was used prior to the start of the course to provide some pre-course activity and promote engagement and interaction between the HEA trainer and participants.

#### **2.2. Course delivery**

A five day workshop was delivered to twenty participants from 12 institutions (Appendix III).

#### **2.3. Audit of Learning and Teaching Practice**

A self-assessment tool was provided to workshop participants (Appendix IV).

#### **2.4. Course evaluation**

Feedback from the participants was collected on a daily basis and at the end of the course.

### **3. Evaluation of Feedback**

The outputs from the surveys and feedback from the workshops were evaluated and used to inform recommendations for enhancing learning and teaching practice in the Higher Education sector in Pakistan.

## 6. Outcomes

### 6.1 Audit of Teaching Practice in Pakistan Higher Education Sector (STEM)

#### 6.1.1. Demographic of Respondents

The survey in Appendix I was distributed to staff across a range of universities in Pakistan. 236 responses to the survey were received from 15 different institutions, including five institutions ranked in the top 10 HEIs in Pakistan by the Higher Education Commission. The majority of responses were from Professors (33%) and lecturers (22%), although we also received responses from Deans, Heads of Departments and Rectors. The majority of core STEM disciplines were represented, including Engineering, Computer Sciences, Physical Sciences, Life Sciences, Mathematics and Statistics.

65% of responders had a teaching qualification, 50% had a PhD, and 47% had studied or worked at a University outside of Pakistan.

#### 6.1.2. Key learning and teaching challenges

Almost 25% of comments identified a range of challenges around learning resources, including learning spaces: flexibility of classroom set-up, air-conditioning and power surges, reliable technology for teaching and learning; access to IT equipment, reliable WiFi, books and journals.

The remaining comments clustered around the issues illustrated in Figure 1, and are expanded on in the following sections.

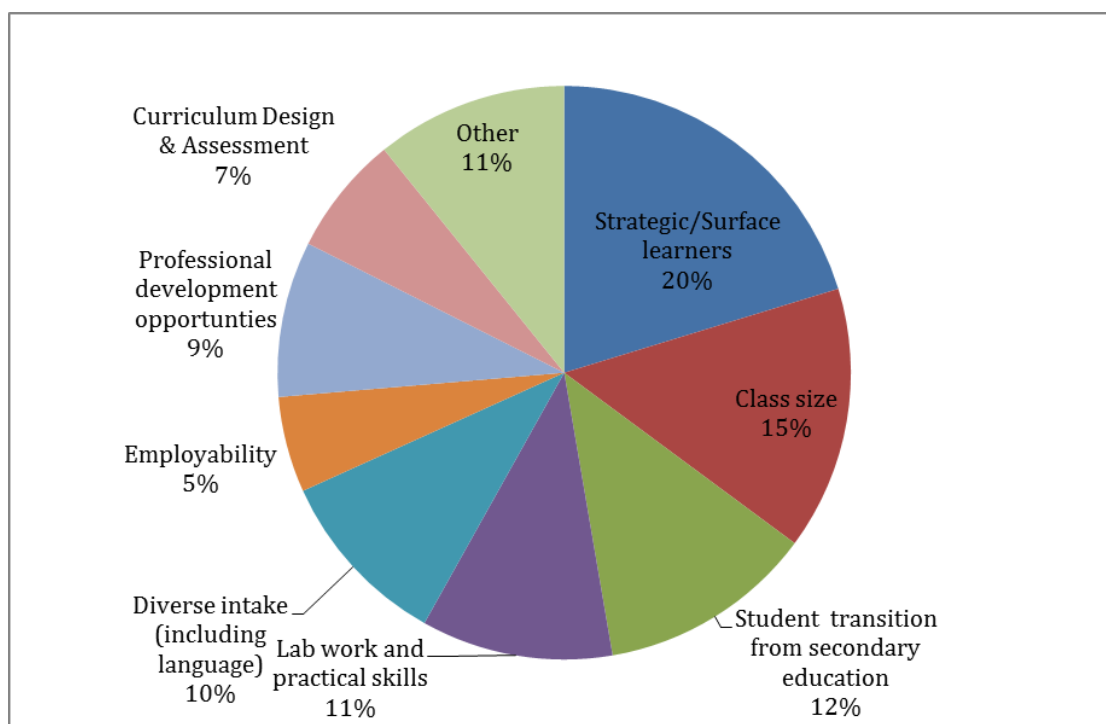


FIGURE 1: KEY CHALLENGES IDENTIFIED BY THE HIGHER EDUCATION SECTOR IN PAKISTAN

### 6.1.3. Class Size

Approximately 10% of total comments related to the challenges teachers face due to increased class sizes. Participants were asked to indicate the largest and smallest class sizes they taught. The results are illustrated in Figure 2, indicating that the modal class sizes are in the range of 50-100.



**FIGURE 2: MAXIMUM AND MINIMUM CLASS SIZES EXPERIENCED IN PAKISTAN HEIs**

Respondents indicated that larger class sizes can raise a number of challenges, some of those indicated in the survey include:

- Difficulty in using active learning techniques, particularly if the large classes are held in traditional lecture theatres;
- Providing access to computers or other equipment;
- Ensuring students remain engaged and are not distracted by social media;
- Teaching style required to engage large audience;
- Time required to assess and provide feedback to a larger cohort.

### 6.1.3. Strategic and Surface Learning

It is widely observed that students are taking a strategic approach to their studies; this is an issue not only restricted to Pakistan, but a global phenomenon. Students who take a strategic approach to learning are focussed on doing sufficient work to achieve good grades, and are often not interested in developing a deep understanding of the discipline, or spend time developing the professional and transferrable skills required for success after university. Other students take a surface approach to their studies, where their goal is only to pass a course.



#### *6.1.4. Student Transitions*

It is recognised that students arriving at university are used to a very didactic teaching style, and many students require support in transitioning to become the independent learners required for success in Higher Education and beyond.

#### *6.1.5. Differentiated Learning*

Widening access to greater numbers of students can lead to lecturers having to manage large classes with wide differences in ability and goals. For all students to be successful, lecturers and institutions need to support the development of study and language skills and provide differentiated learning opportunities– stretching the most able students, whilst ensuring that no one was completely left behind.

#### *6.1.6. Developing Practical Skills*

The lack of current equipment and increasing class sizes were identified as challenges in developing discipline specific laboratory and practical skills.

#### *6.1.7. Curriculum Design and Outcome-Based Education*

Several respondents identified that their institutions had introduced Outcome-based education (OBE). It was clear from both the survey and conversations with the workshop participants that there was little conception of what OBE meant in terms of planning their own teaching and assessment practices. There were several responders who indicated that they required support in developing curriculum and ensuring assessment was fit for purpose and focused on developing the knowledge, skills and attributes that graduates and their potential employers require.

#### *6.1.8. Employability*

Respondents recognised the need to develop the skills that employers want, particularly critical thinking and problem solving skills. They were interested in developing closer relationships with industry and employers to provide more authentic learning opportunities for students.

#### *6.1.9. Technology Enhanced Learning*

Respondents recognised the need for students to develop better digital capabilities, particularly around: Digital scholarship, Digital Curation, Creativity and Media. They also recognised that both they and their students needed to use technology to develop their Personal Learning Networks.

### **6.2 Learning and Teaching in STEM Masterclass Programme**

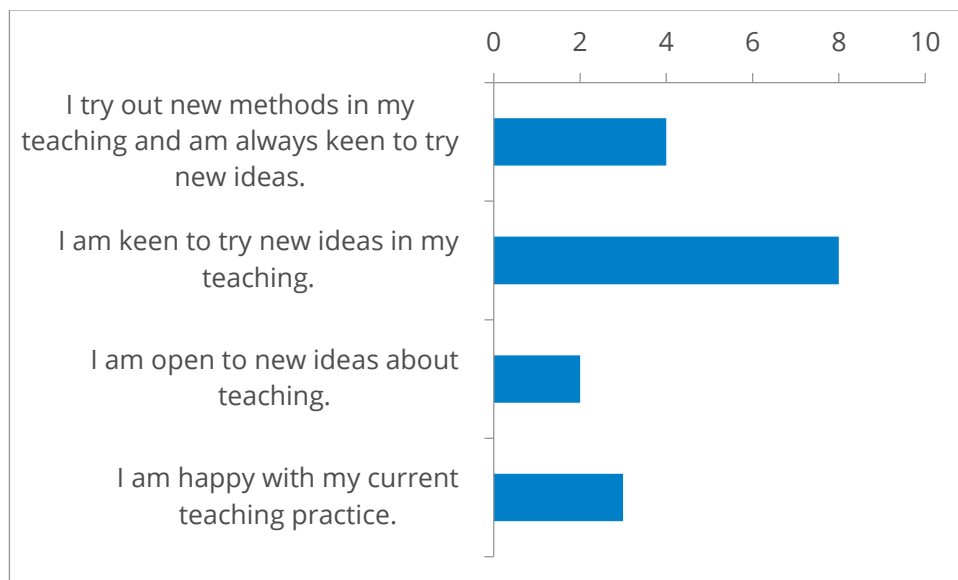
A five-day masterclass programme was designed and delivered by Dr Kay Hack (Academic Lead, STEM at the Higher Education Academy). The course was attended by 20 participants from 12 different HEIs from six regions of Pakistan (Appendix III). The programme was designed to enable participants to:

- Engage in critical reflection of their own practice in the context of contemporary pedagogic theory and current practice in teaching and learning STEM within Pakistan;
- Identify a range of innovative pedagogies to enhance teaching, learning and assessment in STEM disciplines;
- Use digital technology in their professional practice to:
  - deliver teaching and assessment,
  - develop students digital capabilities,
  - develop their own professional networks;
- Develop novel approaches to integrating research into their teaching practice (including access to open data and research-based pedagogic tools)
- Evaluate the impact of changes to practice and adopt strategies for developing professional networks and sharing best practice.

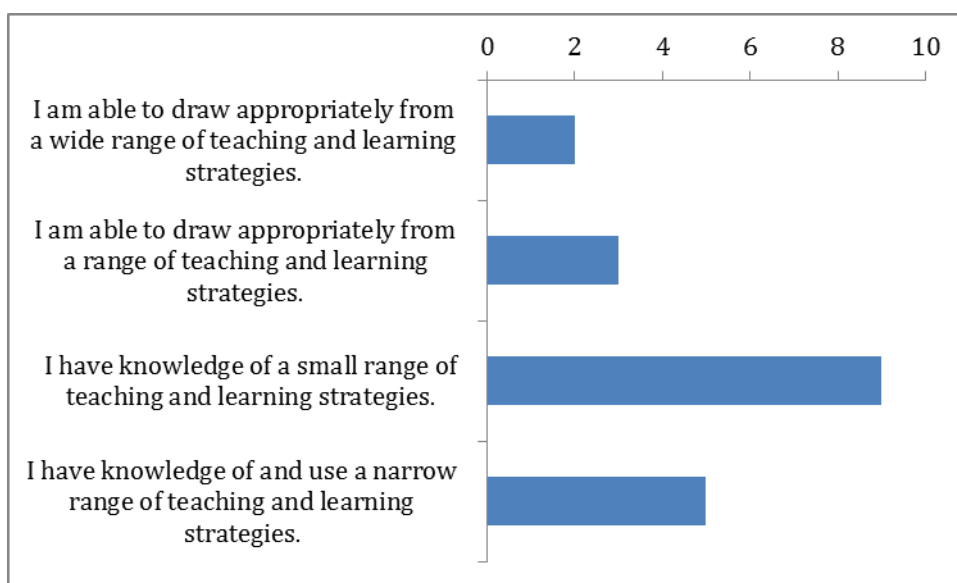
The workshop was supported by the HEA's Virtual Learning Environment. The programme outline and content are provided in Appendix III.

#### *6.2.1. Audit of Learning and Teaching Practice*

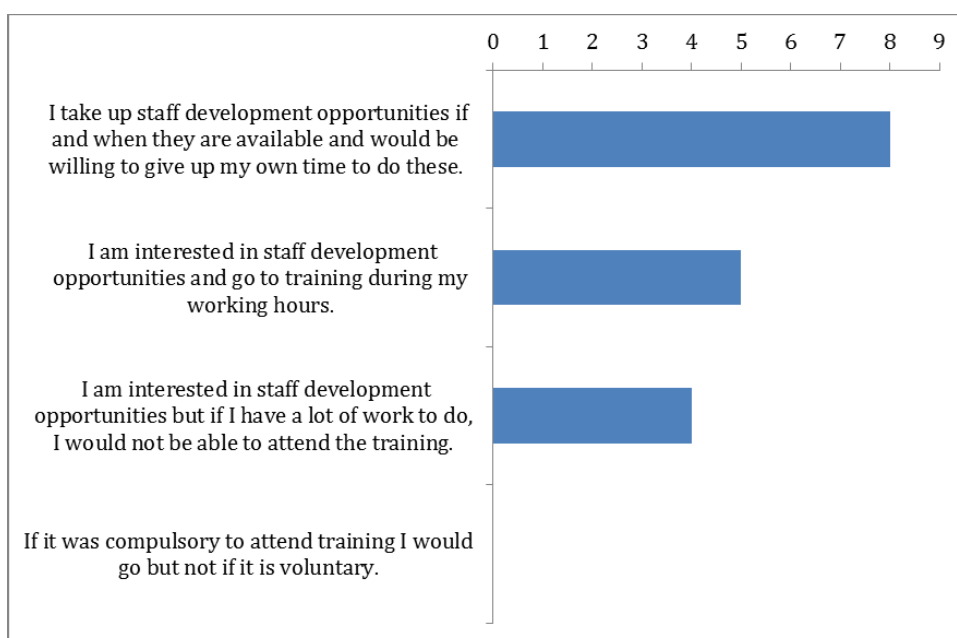
Participants on the workshop were invited to conduct an audit of their own learning and teaching practice. The audit tool is provided in Appendix IV. Key findings from the audit indicate that staff were keen to try new learning and teaching methods (Figure 3a and b), and engage in staff development activity (Figure 3c).



**FIGURE 3A: APPETITE FOR TRYING NEW IDEAS IN LEARNING AND TEACHING PRACTICE**



**FIGURE 3B: DIVERSITY OF LEARNING AND TEACHING STRATEGIES CURRENTLY EMPLOYED**



**FIGURE 3C: INTEREST IN STAFF DEVELOPMENT ACTIVITY**

### 6.2.3 Workshop evaluation

The participants readily engaged with activities which helped them develop better learning outcomes for their courses, authentic assessment activities (both formative and summative), and the active and constructive learning environments required to ensure students achieved the intended learning outcomes.

Several participants asked if we could deliver this workshop to their own institution.

## 7. Recommendations

There is a need and a will to develop teaching practice across the Higher Education Sector in Pakistan, which was evident from both the participants and from those that completed the wider survey.

The evaluation of the survey data and feedback suggests a number of areas that could be considered for further work. Some of these areas (such as the flexibility of learning spaces, and improvements in infrastructure) could involve substantial investment and warrant further planning to ensure efficient use of resources. However, there are several programmes which could be offered to staff from HEIs in Pakistan that would provide the necessary knowledge, skills and understanding to improve STEM teaching in the country. These training programmes support the development of creative and innovative teaching strategies that will help maximise learning within the infrastructure and learning spaces currently available. The suggested programmes are:

### **6.1 Certificate in Learning and Teaching in Higher Education (Appendix V)**

This programme is intended as a future step for participants in the existing workshops, or for enthusiastic teachers that do not have a formal qualification in teaching in higher education (such as a Postgraduate Certificate in Academic Practice).

The Certificate in Learning and Teaching in Higher Education is a comprehensive programme to support teachers within universities. This three-module programme covers the range of activities for teaching in higher education, including learning design, assessment and feedback, curriculum design, and technology enhanced learning. The programme is aligned to the HEA Professional Standards Framework and participants would be well placed to apply for Fellowship of the Higher Education Academy upon completion.

### **6.2 STEM workshops (Appendix III)**

This programme is intended for STEM teachers in Pakistani HEIs that did not attend the previous workshop, and would provide those teachers with key skills for teaching in the STEM subjects. It could be run at different locations within Pakistan in order to attract attendees from different HEIs.

### **6.3 Associate Fellowship programme for HEC funded PhD students studying in the UK (Appendix VI)**

This programme is intended for PhD students from Pakistan studying in the UK. During their PhD studies, these students can be supported via face-to-face or online training, to apply for Associate Fellowship of the HEA. Associate Fellowship is an excellent way to engage these students in reflective practice and to ensure that they begin their academic careers considering the importance of teaching in their work.

The Higher Education Academy would be happy to discuss delivering any or all of these programmes in future.

# Contact us

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## Appendix I: STEM Teaching Survey



# British Council / HEA STEM teaching in Higher Education in Pakistan

The British Council and the Higher Education Academy are carrying out a needs analysis for STEM (Science, Technology, Engineering and Mathematics) teaching in Higher Education in Pakistan. Please complete this survey to help inform our work. Your responses will be used in an anonymised format to develop a report about STEM teaching in Pakistan. If you would like the aggregated survey results, please email [international@heacademy.ac.uk](mailto:international@heacademy.ac.uk).

**1) 1) Your email address**

**2) 2) Which job category best describes your current position?**

**3) 3) Where do you currently work (please name the university or institution)?**

**4) 4) What discipline/subject do you teach?**



**5) 5) What is your highest academic qualification?**

- ☐ PhD
- ☐ Masters
- ☐ Undergraduate degree
- ☐ Other (please specify)

**6) 6) Do you have any teaching qualifications?**

- ☐ Yes
- ☐ No

**7) 7) How many years teaching experience in higher education do you have in total?**

- ☐ 0-2 years
- ☐ 3-5 years
- ☐ 6-10 years
- ☐ 11-15 years
- ☐ 16-25 years
- ☐ 25+ years

**8) 8) Have you worked or studied at a university outside of Pakistan?**

- ☐ Yes
- ☐ No



**Your teaching:**

**9) 9) Do you encourage students to work in groups on specified learning tasks during your classes?**

- ☐ Yes
- ☐ No

**10) 10) How do you assess your students' achievements? [Please tick as many options as apply]**

- ☐ Examinations
- ☐ Practical tasks
- ☐ Student presentations to the class
- ☐ Essays
- ☐ Other written work
- ☐ Other (please specify)

**11) 11) How do you currently share your teaching with colleagues within and beyond your institution?**

- ☐ Conferences
- ☐ Write papers
- ☐ Course committees
- ☐ Online forums
- ☐ Discipline-based groups
- ☐ Other (please specify)

**12) 12) How do students gain the practical skills associated with their discipline? [Please tick all that apply]**

- ☐ Demonstration
- ☐ Videos
- ☐ Online simulation
- ☐ Experimental design
- ☐ Analysis of open data sets
- ☐ Generic laboratory or practical skills course (offered independently from theory)
- ☐ Laboratory or practical skills taught in courses alongside theory
- ☐ Individual project work

**13) 13) How do you assess students' practical skills [please tick all that apply]**

- ☐ Laboratory reports
- ☐ Direct observation
- ☐ Log books or laboratory workbooks
- ☐ Reflection



**Resources and facilities:**

**14) 14) How many students are in your biggest class? [Please tick one of the following]**

- ☐ More than 100
- ☐ 100-50
- ☐ 49-30
- ☐ 29-20
- ☐ Less than 20

**15) 15) How many students are in your smallest class? [Please tick one of the following]**

- ☐ More than 100
- ☐ 100-50
- ☐ 49-30
- ☐ 29-20
- ☐ Less than 20

**16) 16) How are the chairs and tables or desks laid out?**

- ☐ In rows
- ☐ In groups
- ☐ Other (please specify)

**17) 17) Can you move the tables and chairs in the teaching room?**

- ☐ Yes
- ☐ No

**18) 18) What resources are available to use in teaching? [Tick as many as apply]**

- ☐ Blackboard and chalk
- ☐ Whiteboard and pens
- ☐ Computer (Fixed PC or laptop)
- ☐ Mobile devices (students generally have own phones/tablets with WiFi access)
- ☐ Screen to project presentation and resources on to
- ☐ Internet access (wifi)
- ☐ Photocopied resources (such as text or images you can photocopy)
- ☐ Post it notes
- ☐ Shared writing spaces for students (flip charts/white boards)
- ☐ Other (please specify)



**19) 19) The key teaching and learning challenges I am currently facing are...**

## Appendix II: Pre-Workshop Survey



# British Council / HEA STEM training course, Pakistan - March 2017

We are delighted that you will be attending the British Council and Higher Education Academy STEM training course. Your responses will be used by the British Council and the Higher Education Academy to help inform the plan for the programme.

## About you...

**1) 1) Your surname**

**2) 2) Your given name (first name)**

**3) 3) Your preferred first name (if different)**

**4) 4) Your email address (Please note: We will use this address to invite you to the online space for the course so it is important that this is an address that you access regularly)**

**5) 5) Which job category best describes your current position?**

Select... ▼

**6) 6) Where do you currently work (please name the university or institution)?**

**7) 7) What discipline/subject do you teach?**

**8) 8) What is your highest academic qualification?**

- ☐ PhD
- ☐ Masters
- ☐ Undergraduate degree
- ☐ Other (please specify)

**9) 9) Do you have any teaching qualifications?**

- ☐ Yes
- ☐ No

**10) 10) If so, please specify what qualification and the date you obtained it...**

**11) 11) How long have you worked in your current role?**

**12) 12) How many years teaching experience in higher education do you have in total?**

**13) 13) Have you worked or studied at a university outside of Pakistan?**

- ☐ Yes
- ☐ No

**14) 14) If you answered yes to the previous question, please specify the university and country and whether it was for work or study.**



## **Your teaching:**

**15) 15) Please think about your teaching at your current university. In about 100 words, describe a recent session you've taught. Who were you teaching? What level or year group? What topic/subject were you teaching? What did you do? What did the students do?**

**16) 16) Do you encourage students to work in groups on specified learning tasks during your classes?**

- ☐ Yes
- ☐ No



**17) 17) If you have answered yes to the previous question please give short examples of any group work you have organised for your students**

**18) 18) How do you assess your students' achievements? [Please tick as many options as apply]**

- ☐ Examinations
- ☐ Practical tasks
- ☐ Student presentations to the class
- ☐ Essays
- ☐ Other written work
- ☐ Other (please specify)

**19) 19) How often do you assess your students? [Please tick any option which applies]**

- ☐ At the end of the programme
- ☐ At the end of every year
- ☐ At the end of every term or semester
- ☐ Ongoing assessment
- ☐ Other (please specify)

**20) 20) How do you currently share your practice with colleagues within and beyond your institution?**

**21) 21) How do students gain the practical skills associated with their discipline? [Please tick all that apply]**

- ☐ Demonstration
- ☐ Videos
- ☐ Online simulation
- ☐ Experimental design
- ☐ Analysis of open data sets
- ☐ Generic laboratory or practical skills course (offered independently from theory)
- ☐ Laboratory or practical skills taught in courses alongside theory
- ☐ Individual project work
- ☐ Other

**22) 22) If you answered 'other' to the previous question please specify...**

**23) 23) How do you assess students' practical skills [please tick all that apply]**

- ☐ Laboratory reports
- ☐ Direct observation
- ☐ Log books or laboratory workbooks
- ☐ Reflection
- ☐ Other

**24) 24) If you answered 'other' to the previous question please specify...**

**25) 25) What are the challenges you face in helping students develop their practical skills?**



## **Resources and facilities:**

**26) 26) How many students are in your biggest class? [Please tick one of the following]**

☐ More than 100

☐ 100-50

☐ 49-30

☐ 29-20

☐ Less than 20

☐ Other (please specify)

**27) 27) How many students are in your smallest class? [Please tick one of the following]**

☐ More than 100

☐ 100-50

☐ 49-30

☐ 29-20

☐ Less than 20

☐ Other (please specify)

**28) 28) How are the chairs and tables or desks laid out?**

☐ In rows

☐ In groups

☐ Other (please specify)

**29) 29) Can you move the tables and chairs in the teaching room?**

- ☐ Yes
- ☐ No

**30) 30) What resources are available to use in teaching? [Tick as many as apply]**

- ☐ Blackboard and chalk
- ☐ Whiteboard and pens
- ☐ Computer (Fixed PC or laptop)
- ☐ Mobile devices (students generally have own phones/tablets with WiFi access)
- ☐ Screen to project presentation and resources on to
- ☐ Internet access (wifi)
- ☐ Photocopied resources (such as text or images you can photocopy)
- ☐ Post it notes
- ☐ Shared writing spaces for students (flip charts/white boards)
- ☐ Other (please specify)



**Tell us what you want to gain from attending the workshop:**

**31) 31) What are your main motivations for wanting to come on this workshop?**

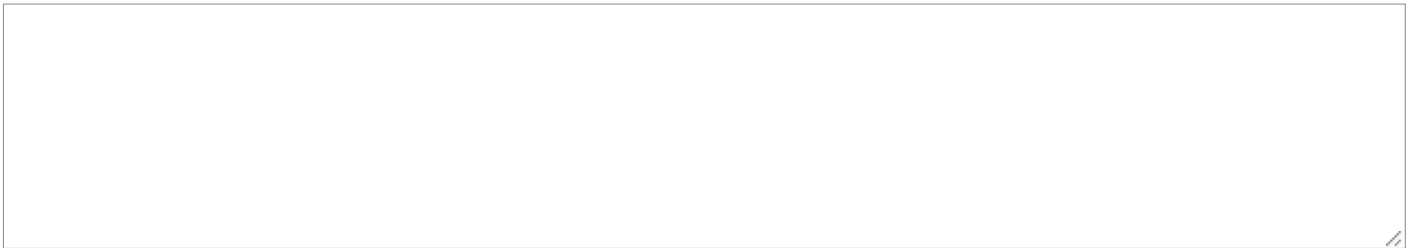
- ☐ An opportunity to reflect on and improve my practice
- ☐ To develop my skills as a teacher
- ☐ Personal interest in teaching and learning
- ☐ Alignment of the programme with my professional responsibilities. (e.g. I am responsible for teaching quality in my university department)
- ☐ Other (please specify)

**32) 32) If you answered 'other' to the previous question please specify...**

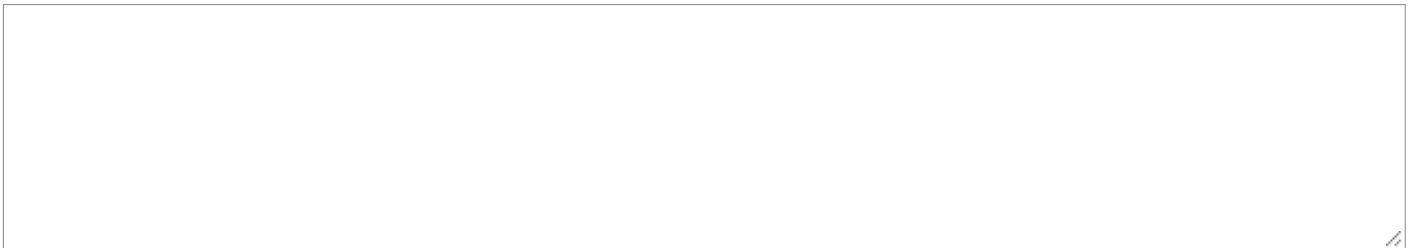
**33) 33) The key teaching and learning challenges I am currently facing are...**

A large, empty rectangular text box with a thin black border, intended for the user to write their response to question 33. A small cursor icon is visible in the bottom right corner.

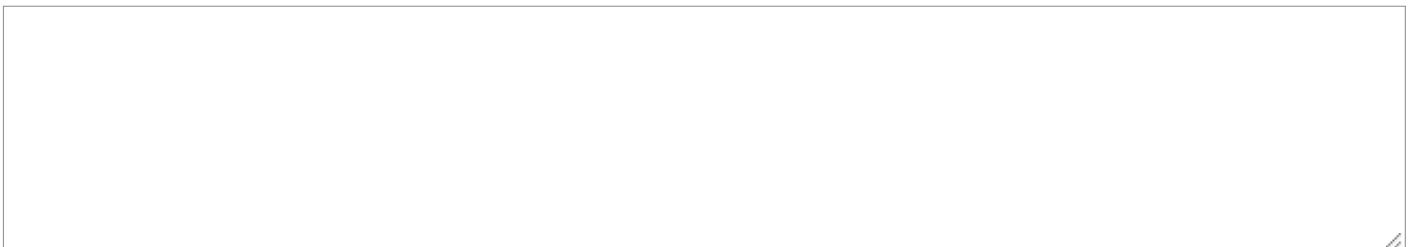
**34) 34) As a result of participating in this programme, I hope to...**

A large, empty rectangular text box with a thin black border, intended for the user to write their response to question 34. A small cursor icon is visible in the bottom right corner.

**35) 35) Do you have any questions about the workshops?**

A large, empty rectangular text box with a thin black border, intended for the user to write their response to question 35. A small cursor icon is visible in the bottom right corner.

**36) 36) Please provide details of any special requirements you may have (e.g. due to sensory or mobility issues)**

A large, empty rectangular text box with a thin black border, intended for the user to write their response to question 36. A small cursor icon is visible in the bottom right corner.

## **Appendix III: Learning and Teaching in STEM Masterclass Handbook**

# Programme Handbook

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## Learning and Teaching in STEM Masterclass Programme



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## 1. Introduction

The Learning and Teaching in STEM Masterclass Programme has been designed by the Academic Lead for STEM from the Higher Education Academy (HEA) in collaboration with colleagues from the Academy. The programme has been developed to align to the UK Professional Standards Framework (UKPSF), a nationally and increasingly, internationally, recognised framework which offers a comprehensive set of professional standards and guidelines for staff involved in teaching and supporting learning in higher education.

## 2. Learning and Teaching in STEM Masterclass Programme

### 2.1 Rationale

Globally, STEM is high on the political and economic agenda with employers wanting to recruit people with high level skills in science, technology, engineering and maths. Faculty in Higher Education Institutions is a key element of the STEM pipeline for the development and retention of a science and engineering workforce. Those responsible for developing STEM graduates should have a sound understanding of current theories and practice of teaching and learning in higher education in both face-to-face and online learning.

### 2.2 Programme Aims

This masterclass programme has been designed to support Faculty teaching on tertiary programmes in Science, Technology, Engineering and Maths.

### 2.3 Programme Learning Outcomes

By the end of the programme, participants will be able to:

1. Engage in critical reflection of their own practice in the context of contemporary pedagogic theory and current practice in teaching and learning STEM within Pakistan;
2. Identify a range of innovative pedagogies to enhance teaching, learning and assessment in STEM discipline;
3. Use digital technology in their professional practice to:
  - deliver teaching and assessment,
  - develop students digital capabilities,
  - develop their own professional networks;

4. Develop novel approaches to integrating research into their teaching practice (including access to open data and research-based pedagogic tools)
5. Evaluate the impact of changes to practice and adopt strategies for developing professional networks and sharing best practice.

## 2.4 Structure and content

The Masterclass is a five day intensive programme, comprising the following topics:

- Day 1: Fundamentals of Teaching and Learning in Higher Education
- Day 2: Outcome-based Education and Constructive Alignment
- Day 3: Assessment and Feedback
- Day 4: Signature Pedagogies in Scientific Disciplines
- Day 5: Developing Digital capabilities

## 2.5 Learning and Teaching

The Masterclass will be delivered through face-to-face teaching supported by course materials and activities in the HEA Virtual Learning Environment.

Face-to-face sessions:

- The predominant model of delivery will be through short lectures followed by modelling of a range of pedagogic approaches, including: problem-based learning, BYOD, gamification and game-enhanced learning, peer-learning and discussion groups. The workshop activities will provide opportunities for participants to discuss how the theory or examples provided can be applied to their individual practice. It is anticipated that peer learning and sharing of solutions will foster a community of practice amongst participants.

On-line activities:

- Participants will be expected to carry out pre-reading, engage in discussions, view online content and reflect on their practice throughout the programme.

## **2.6 Attendance**

It is expected that all participants will attend all sessions and actively engage with the content, session facilitators and their peers. All participants will be encouraged to provide feedback to the course facilitator following each day.

## **3. Masterclass Delivery**

Teaching and facilitation is provided by Dr Kay Hack, Academic Lead for STEM with the Higher Education Academy.

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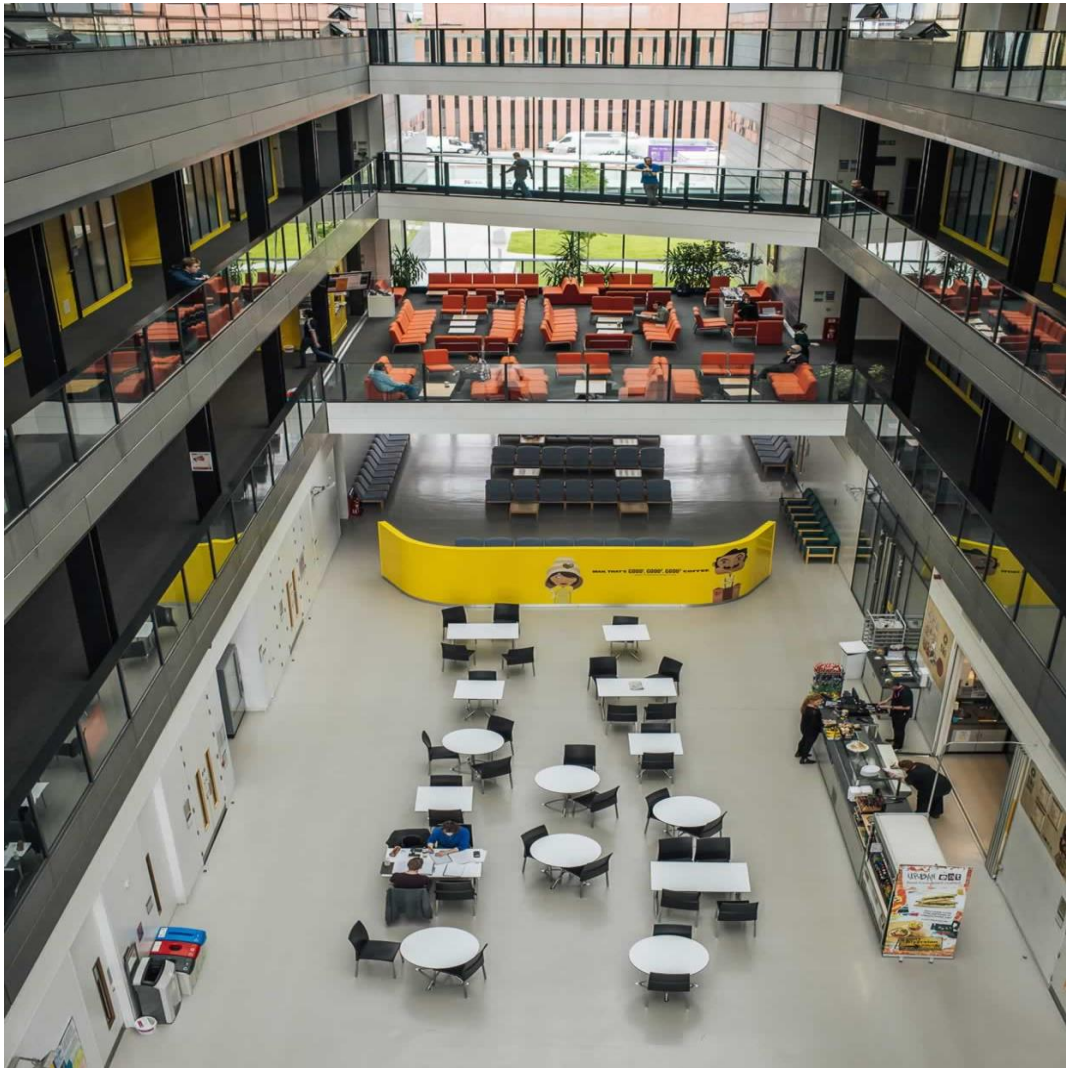
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## **Appendix IV: Teaching and Learning Self Assessment Tool**

# Teaching and Learning self-assessment tool

<input type="checkbox"/> I always design learning opportunities which stimulate, challenge and stretch students.	<input type="checkbox"/> I often design learning opportunities which stimulate, challenge and stretch students.	<input type="checkbox"/> I sometimes design learning opportunities which stimulate, challenge and stretch students.	<input type="checkbox"/> I rarely design learning opportunities which stimulate, challenge and stretch students. My normal practice is to give lectures to students/read from the textbook.
<input type="checkbox"/> My teaching has high levels of student-based activity and I use a variety of resources (text, video, audio, task sheets, real objects, digital resources, practical equipment).	<input type="checkbox"/> My teaching includes some student-based activity with some use of different resources.	<input type="checkbox"/> My teaching is appropriate for the group with some student-based activity and occasionally I use different resources.	<input type="checkbox"/> My teaching does not include much student-based activity and I use course material such as the textbook.
<input type="checkbox"/> I am able to draw appropriately from a wide range of teaching and learning strategies.	<input type="checkbox"/> I am able to draw appropriately from a range of teaching and learning strategies.	<input type="checkbox"/> I have knowledge of a small range of teaching and learning strategies.	<input type="checkbox"/> I have knowledge of and use a narrow range of teaching and learning strategies.
<input type="checkbox"/> I use a wide variety of assessment tools such as student presentations, group assignments, posters, digital assessments, practical tasks as well as end of year/term exams.	<input type="checkbox"/> I use a range of assessment tools including assessing group work and practical tasks as well as end of year/term exams.	<input type="checkbox"/> I mainly use end of year/term exams and tests to assess learning but on occasions I have assessed other work e.g. practical tasks.	<input type="checkbox"/> I use end of year/term exams and tests to assess learning.
<input type="checkbox"/> I have a high level of digital skills and use technology every day in my teaching sessions.	<input type="checkbox"/> I have a good range of digital skills and use technology regularly in my teaching sessions.	<input type="checkbox"/> I have some digital skills and use technology occasionally in my teaching sessions.	<input type="checkbox"/> I rarely or never use technology in my teaching.
<input type="checkbox"/> I try out new methods in my teaching and am always keen to try new ideas.	<input type="checkbox"/> I am keen to try new ideas in my teaching.	<input type="checkbox"/> I am open to new ideas about teaching.	<input type="checkbox"/> I am happy with my current teaching practice.
<input type="checkbox"/> I take up staff development opportunities if and when they are available and would be willing to give up my own time to do these.	<input type="checkbox"/> I am interested in staff development opportunities and go to training during my working hours.	<input type="checkbox"/> I am interested in staff development opportunities but if I have a lot of work to do, I would not be able to attend the training.	<input type="checkbox"/> If it was compulsory to attend training I would go but not if it is voluntary.
<input type="checkbox"/> I have a very good knowledge of current educational issues in HE in my country.	<input type="checkbox"/> I have a good knowledge of current educational issues in HE in my country.	<input type="checkbox"/> I have a satisfactory understanding of current educational issues in HE in my country.	<input type="checkbox"/> I have little understanding of current educational issues in HE in my country.

## **Appendix V: Proposal for Certificate in Teaching and Learning**



# Proposal for Certificate in Teaching and Learning

## Higher Education Commission - Pakistan

### May 2017



# 1. Your brief

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In this pilot year we would collaboratively run a Professional Certificate in Learning and Teaching in Higher Education across Pakistan. Working with the Higher Education Commission (HEC) the Certificate will be designed to contextualize the Professional Standards Framework (PSF) in relation to the Pakistani Higher Education sector.

## Objectives

To develop, deliver and train faculty in Pakistan through completion of a Certificate in Learning and Teaching in Higher Education (CLTHE) which will be aligned to the PSF and result in successful participants being awarded Fellowship of the Higher Education Academy (HEA).

This programme outline is designed to be flexible and work-based in nature, enabling participants to demonstrate engagement with the PSF for individuals teaching and supporting learning in Higher Education.

The overarching principles that have informed its development are commitment to:

- > Scholarship in teaching
- > Continued reflection and evaluation, and consistent improvement of practice
- > Outcomes-based Higher Education
- > Evidence-based pedagogy
- > Innovation and creativity in strategies for teaching and supporting learning
- > Respect for learners and for their development and empowerment

## Approach

The HEA will work with the Higher Education Commission to develop a Certificate in Learning and Teaching in Higher Education and then work towards aligning it against the PSF. Where practicable, the views of other stakeholder organisations, such as the Faculty Development Academy (COMSATS), will inform the Certificate programme. The following specific actions are planned, the HEA will:

- > Create PSF guidance and dimensions of practice that are appropriate for the Pakistani Higher Education Sector.
- > Design a pilot Certificate in Learning and Teaching in Higher Education that is aligned to either Associate Fellow or Fellow of the HEA.
- > HEA team will carry out three, four-day visits to deliver the Certificate.
- > Between these visits, the HEA team will provide remote support to help staff complete the Certificate and make applications to become Fellows of the HEA
- > Establish a National pool of professionally recognised Faculty
- > Evaluate the programme and recommend plans for sustainable expansion and development in collaboration with local institutions.

## Deliverables

A group of Pakistani based Fellows will be established which will be part of a growing global network of over 80,000 Fellows.

By applying to become a Fellow, staff in Pakistan will have the opportunity to:

- > think deeply about and thereby enhance the quality and effectiveness of their work in the area of teaching and supporting learning in higher education;
- > model good practice for other staff and be better able to encourage and support them to seek recognition for their own work in this area;
- > gain national and international recognition for their contribution to teaching and the support of learning within the higher education context;
- > develop and apply reflective approaches to talking and writing about their professional practice;
- > be better informed on new ways of teaching, conducting assessment and offering feedback in order to enhance the student learning experience;
- > identify examples, engagements, people, situations and experiences that you can draw on to provide evidence for their application.

## 2. Costs

Delivery of Certificate (1 Trainer) for up to 30 participants	No of Days	Day Rate	Total
Project Preparation (conducted in UK)	10	£950	£9,500
Project Delivery (3 visits x 4 days)	12	£1,400	£16,800
Project Follow up	12	£950	£11,400
Travel Days (2 per visit)	6	£650	£3,900
Travel & Subsistence			£11,400
Fellowship Fees 30 @ £400			£12,000
<b>Total Project</b>			<b>£65,000</b>

### Notes:

- All HEA staffing, travel and subsistence expenses necessary to deliver the workshops are included.
- Flights from London/Manchester to Pakistan
- For delivery days expenses include travel to and from the airport, airfares, accommodation and subsistence.
- Prices are quoted on the basis of number of day's delivery.
- It is assumed that venue hire for meetings and workshops will be provided by HEC
- These prices are valid for two months from the date of issue.

### 3. Why the Higher Education Academy

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The Higher Education Academy (HEA) is a UK-based body with a global input network, working across the world to enhance the quality of the teaching and learning support and experience for students, ensuring the education they receive is world-class.

The HEA has the world's only national professional development framework for teaching in higher education (the UKPSF), with a proven record of adapting this for local use and establishing regional retention and certificate attainment programs, through a global network of strategic partners and subscribers. Furthermore, the HEA provides consultancy and workshops on identifying practice gaps; practice exemplars and case studies of innovative assessment, feedback and pedagogical practice; enhancing employability and student engagement through partnership and surveys, to name but a few. This has led to the development of the HEA's Framework for student access series.

HEA Fellowship is an international recognition of a commitment to professionalism in teaching and learning in higher education and demonstrates that your practice is aligned with the UK Professional Standards Framework (UKPSF). To date over 80,000 individuals have become Fellows of the HEA.

HEA Fellowship brings a range of benefits to develop and progress your career. It provides a valuable measure of success and is increasingly sought by employers across the higher education sector as a condition of appointment and promotion.

Fellowships are an important indicator that your institution is fully aligned with UKPSF practice and a badge of assured quality throughout your institution.

HEA Fellowships are awarded depending on your level of knowledge and experience. If you, or staff within your institution, have completed accredited programmes or have a proven track record of experience within the UKPSF, you may apply to become an HEA Fellow in one of the following categories:

Associate Fellow (AFHEA)  
Fellow (FHEA)  
Senior Fellow (SFHEA)  
Principal Fellow (PFHEA)

Our writing workshops are designed for colleagues with experience of professional practice in higher education who would like to develop their own application for the appropriate level of Fellowship of the HEA. The event provides time and space to think, discuss and reflect on professional practice away from busy day-to-day working lives.

Active across the globe with institutions in countries such as Kazakhstan, Uruguay, Australia, China and the MENA region, as well as most recently, with ministries such as the Ministry of Education, Higher Education Commission in Bahrain, the HEA offers a truly unique service for the global HE sector, its subscribers and over 80,000 HEA Fellows.

## 4. Contact us

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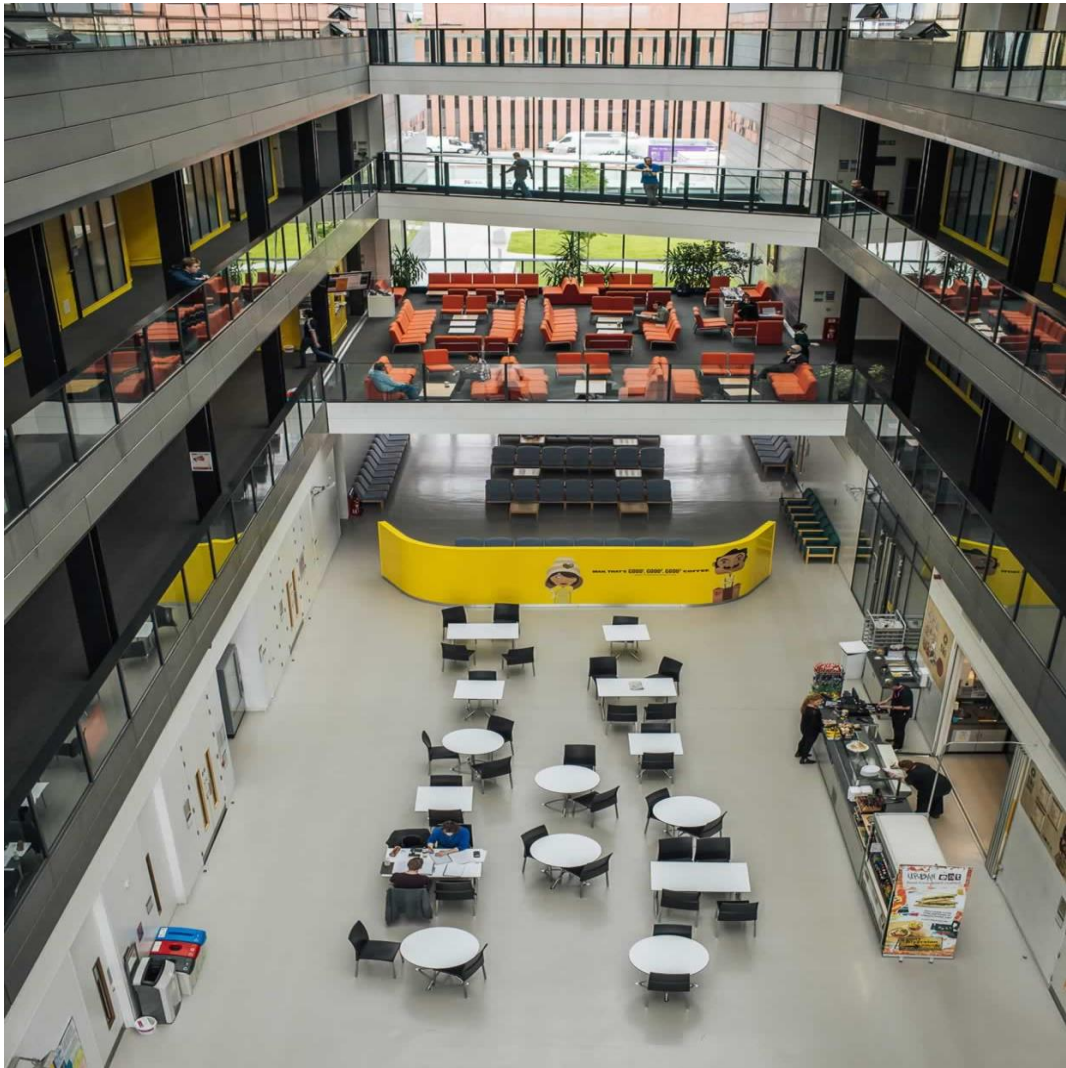


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"The HEA understands our problems and for us to achieve our ambition over the next five years, we need to be working closely with partners like the HEA, who really understand what it means to be a good teacher, what it means in terms of designing curricula, what it means in terms of working with employers and what it means in terms of delivering really positive, student outcomes. So we are excited to be working with the HEA over the next few years."

## **Appendix VI: Associate Fellow Programme for PhD Students in the UK**



# Associate Fellowship Programme for PhD Students in the UK British Council Pakistan July 2017

# 1. Your brief

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During the 2016/17 academic year the Higher Education Academy (HEA) and British Council have worked in partnership to successfully deliver a teaching skills masterclass for teachers of Science, Technology, Engineering and Mathematics in Pakistan.

Following this project, it is understood that there is an interest in providing a mechanism to recognise the support for teaching and learning of Pakistani PhD students based in the UK. This would result in those students being awarded Associate Fellowship of the Higher Education Academy.

## 2. The proposal

---

### Purpose

The overarching purpose of this project is to allow UK based Pakistani PhD students to seek global professional recognition as Associate Fellows of the HEA.

The benefits of this will be that a new generation of PhD students – and potential academics of the future – will be recognised for their contribution to supporting learning and teaching. It will also help develop these staff as reflective practitioners and introduce them to the scholarship of teaching and learning early in their career.

### Approach

Two alternative approaches are available to support students to apply for Associate Fellowship of the HEA: via Face-to-Face workshops or through an online module.

#### Face-to-face workshops

Using this model, a number of face-to-face workshops would be arranged at different locations in the UK that would help prepare students to make an application for Associate Fellowship. These workshops could be arranged at different geographic locations (e.g. London, Bristol, Manchester and Glasgow) to ensure convenience for students based across the UK. They could also be run at weekends (e.g. on a Saturday) or outside of term time in order to avoid clashing with term time commitments.

During the workshop an HEA trainer will support the students with understanding the requirements of and developing an application for Associate Fellowship. The workshop will be tailored to the group and their specific needs, but can cover the following areas:

- > An introduction to the HEA and the Professional Standards Framework
- > The application process



- > A review of anonymized draft application extracts and case studies
- > Facilitated peer discussion about appropriate examples
- > Mapping, drafting and writing time
- > 1:1 Advice and Guidance

A workshop of this form would usually be run for around 20-25 participants at a time. Given that there are currently around 700 PhD students from Pakistan based in the UK, it is suggested that 10 workshops could be run each year in order to support all third year PhD students with making an application for Associate Fellowship.

### **Online workshops**

As an alternative to a face-to-face workshop, an online module could be developed that supported students with applying for Associate Fellowship. This would allow students to gain an understanding of the Professional Standards Framework and the application process in a self-paced way, at a time that is convenient to them. The online module would cover:

- > An introduction to the HEA and the Professional Standards Framework
- > The Application Process
- > Examples of typical applications and case studies
- > An introduction to resources to support drafting an application

Since the module will be delivered online, this can be delivered to any number of students at one time and charged for on a per person basis.

### **Draft Application Reviews**

Following a face-to-face or online Associate Fellowship workshop, an HEA consultant can review and provide remote feedback on a draft HEA Associate Fellowship application. This has proven a useful way for applicants to get feedback before they submit directly to the HEA, and ensure that the style and content of their writing is appropriate for an Associate Fellowship application. Draft applications will be submitted to and returned by the HEA consultant by email.

### **Fellowship Fees**

When applicants submit their Associate Fellowship application directly to the HEA, they will need to pay the appropriate application fee before their submission is reviewed. The cost of an Associate Fellowship application is £200, and these can be paid for as a bulk contract so that there is no direct cost for each student to pay.

### **Deliverables**

Upon completion of this programme participants will have:

1. Taken part in an online or face-to-face workshop to understand how to apply for Associate Fellowship

2. Produced a draft Associate Fellowship application and received comments on this draft from an HEA consultant
3. Developed their ability to reflect on their teaching practice and make plans for enhancing the teaching and learning work that they are involved in
4. Made an application for global professional recognition as Associate Fellows of the Higher Education Academy.

### 3. Costs

The costs for this programme are dependent on the model chosen (online or face-to-face) and the number of students wishing to take part. An updated set of costs can be provided with further discussion about potential numbers and the preferred approach.

#### Option 1: Face-To-Face Fellowship Writing Workshops

One HEA trainer to deliver 10 Fellowship writing workshops in various locations in the UK for up to 25 students per workshop	No of Days	Day Rate	Total
Project Preparation	5	£950	£4,750
Project Delivery	10	£1,400	£14,000
Travel & Subsistence (including trainer expenses, venue hire, lunches and refreshments for participants)			£19,900
<b>Sub Total</b>	<b>14</b>		<b>£38,650</b>
<b>Cost per student (assuming 250 students)</b>			<b>£155</b>

#### Option 2: Online Fellowship Writing Workshop

The pricing for this option is currently being developed and can be provided at a later date on request.

#### Draft Application Reviews

One HEA trainer to review up to 250 Draft Associate Fellowship Applications	No of Days	Day Rate	Total
Project Delivery	30	£950	£28,500
<b>Sub Total</b>	<b>30</b>		<b>£28,500</b>
<b>Cost per student (assuming 250 students)</b>			<b>£114</b>

## Fellowship Fees

	Price per application	Number	Total
Fellowship fees for Associate Fellows	£200	250	£50,000
<b>Sub Total</b>			<b>£50,000</b>
<b>Cost per student</b>			<b>£200</b>

## Summary

The costs above show that the overall cost per student to provide a face-to-face workshop to develop an application, to review a draft application, and to apply for Fellowship are £469 per student.

## 4. Why Higher Education Academy

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## 5. Contact us

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