EP311-30 Introduction to Secondary Biology Education

20/21

Department
Centre for Teacher Education
Level
Undergraduate Level 3
Module leader
Holly Heshmati
Credit value
30
Module duration
10 weeks
Assessment
100% coursework
Study locations
University of Warwick main campus, Coventry Primary
A Warwick Partnership School

Description

Introductory description

This module takes place in term 2 and is specially designed to introduce you to Science-Biology curriculum and pedagogy in the Secondary school age range. You will explore your subject from a new perspective through engaging sessions at university led by teaching fellows and visiting teachers and have opportunity to support teaching and learning in practice through activities in a school or online learning setting with secondary age pupils. Through engagement in Science-Biology education you will have the opportunity to raise awareness of and encourage engagement with Science-Biology education within the local community.

The module is hosted by the Centre for Teacher Education (currently rated 'Outstanding' by OFSTED). Anyone who completes the module is automatically eligible for an interview for the Postgraduate Certificate in Education (PGCE) initial teacher training course (providing all entry requirements for Initial Teacher Training are met).

Module web page

Module aims

1. To develop knowledge and understanding about the UK education system and what it is like to be a secondary Science-Biology teacher.
2. To develop knowledge and understanding of Science-Biology education.
3. To provide a professional experience in supporting the teaching of Science-Biology .
4. To develop key transferable skills through engagement with 11-18 education.
5. To develop skills in personal reflection on professional practice.
6. To relate educational theory to education practice.
7. To raise aspirations of school students and encourage access to the study of Science-Biology in Higher Education.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The theory which underpins the practice of Science-Biology teaching is explored through seminars led by CTE Teaching Fellows. The seminars begin by discussing the current context of the UK education system and national curriculum before exploring a range of key themes in education such as how students learn, how ideas develop in the school curriculum and using assessment for learning and specific aspects of pedagogy relating to the teaching of Science-Biology.

As part of the module you engage in Science-Biology education through contributing to support for secondary age Science-Biology students, either through online learning support or a short placement in a school. Whilst engaged in supporting Science-Biology learning you will develop your practical understanding of the teaching of Science-Biology . Indicative activities might include: developing learning resources, observing experienced teacher, supporting lessons, 1 to 1 or small group teaching, supporting school students in preparation for Higher Education.
To prepare for and support you for this you will participate a series of workshops at the university. These are highly interactive, practice based sessions, delivered by visiting teachers from local secondary schools. Sessions cover topics such as effective management of learning environments, developing resources to support learning and effective questioning

Learning outcomes

By the end of the module, students should be able to:

- LO1 Critically analyse and reflect on key issues in Science-Biology education in school.
- LO2 Critically reflect on practice in teaching Science-Biology in school.
- LO3 Apply learning theory to school Science-Biology teaching practices
- LO4 Demonstrate engagement with supporting the teaching and learning of Science-Biology.
- LO5 Demonstrate professional skills in collaboration and effective communication with young people.
- LO6 Demonstrate engagement with raising the aspirations of school students towards study in Higher Education

Indicative reading list

Student Guide to Literacy in Science ASE guide to secondary science education Exploring young people's views on science education Successful science: strengths and weaknesses of school science teaching

Starting science ... again?: making progress in science learning What successful science teachers do: 75 research-based strategies Science formative assessment: 75 practical strategies for linking assessment, instruction, and learning

Teaching science: developing as a reflective secondary teacher Good practice in science teaching: what research has to say

Teaching secondary science using ICT How science works: exploring effective pedagogy and practice Science learning, science teaching

Interdisciplinary

Through exploring the teaching and pedagogy of your subject you will consider and build connections between your subject, educational theory, the psychology of learning and cognition and also consider elements of policy, society and sociology. You will develop your written communication skills in producing both academic and professional evidence-informed rationales for practice.

Subject specific skills

You will develop skills relevant for teaching and the development of practice such as communication, collaboration and reflection. You will also develop skills relevant to the academic study of education such as analysis and critique. The module will also develop your skills in the pedagogy of your subject.

Transferable skills

Critical Thinking
Reasoning and Problem Solving
Active Lifelong Learning
Communication (verbal and written)
Teamwork and working effectively with others
Information literacy (research skills)
ICT Literacy
Citizenship (local and global)
Ethical Values
Inter-cultural learning and diversity awareness
Professionalism
Organisational awareness

Study

Study time

Type	Required
Lectures	2 sessions of 1 hour (1%)
Seminars	7 sessions of 2 hours (5%)
Practical classes	7 sessions of 2 hours (5%)
Placement	75 hours (25%)
Assessment	195 hours (65%)
Total	300 hours

Private study description

No private study requirements defined for this module.

Costs

Category	Description	Funded by	Cost to student
Other	In the UK, anyone working with children is required to have a Disclosure & Baring Services (DBS) check. The Centre for Teacher Education will cover the costs of this, however, you will need to provide the relevant proof of identification and address prior to the start of the module.	Department	£0.00
Field trips, placements and study abroad	The module may provide the option for a short physical placement in a local school. You will be responsible for your travel arrangements to the placement. Placements are assigned to align with bus routes and opportunities for car share where possible. When possible, you will have the option to choose an alternative online teaching experience which will provide access to similar experiences and learning outcomes with no travel requirements.	Student	

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time
Critical review on an issue in Science-	35%	60 hours

	Weighting	Study time
Biology Education		
A short (1000 word, approximately 4 sources) annotated bibliography on a chosen issue in Science-Biology Education followed by a 500 word discussion and conclusion on the implications for teaching Science-Biology.		
Evidence-based Science-Biology teaching presentation	35%	75 hours
A recorded teaching presentation designed to support children's learning in Science-Biology with a 500-word teacher note, discussing the rationale relating to secondary Science-Biology curriculum, learning intentions or pedagogic theory.		
Academic Poster- what should future of science-biology education look like?	30%	60 hours
An academic poster to synthesise ideas from the module learning and demonstrate their application by exploring what future of science-biology education should look like. This draws together concepts students will have developed at school/tutoring, as well as those they have encountered at the university through critical engagement with both theory and practice.		

Feedback on assessment

Formative: During the course of the module students will have the opportunity to submit one annotated bibliography and their planning sheet for the academic poster for either written or audio feedback.
Summative: A written feedback sheet and in-text comments will be provided on each component.

Availability

Courses

This module is Optional for:

- UBSA-C700 Undergraduate Biochemistry
  - Year 3 of C700 Biochemistry
  - Year 3 of C700 Biochemistry
- ULFA-C1A2 Undergraduate Biochemistry (MBio)
  - Year 3 of C1A2 Biochemistry
  - Year 3 of C700 Biochemistry
- Year 4 of UBSA-C701 Undergraduate Biochemistry (with Intercalated Year)
- Year 3 of ULFA-C1A6 Undergraduate Biochemistry with Industrial Placement (MBio)
- UBSA-3 Undergraduate Biological Sciences
  - Year 3 of C100 Biological Sciences
  - Year 3 of C100 Biological Sciences
  - Year 3 of C102 Biological Sciences with Cell Biology

    - Year 3 of C103 Biological Sciences with Environmental Resources
    - Year 3 of C104 Biological Sciences with Microbiology
    - Year 3 of C105 Biological Sciences with Molecular Genetics
    - Year 3 of C107 Biological Sciences with Virology
- Year 3 of ULFA-C1A1 Undergraduate Biological Sciences (MBio)
- UBSA-4 Undergraduate Biological Sciences (with Intercalated Year)
    - Year 4 of C111 Biological Sciences with Cell Biology (with Intercalated Year)
    - Year 4 of C101 Biological Sciences with Intercalated Year
    - Year 4 of C109 Biological Sciences with Microbiology (with Intercalated Year)
    - Year 4 of C108 Biological Sciences with Molecular Genetics (with Intercalated Year)
    - Year 4 of C110 Biological Sciences with Virology (with Intercalated Year)
    - Year 4 of C521 Microbiology and Virology with Intercalated Year
    - Year 4 of C523 Virology (with intercalated year)
- Year 4 of ULFA-C113 Undergraduate Biological Sciences (with Placement Year)
- Year 3 of ULFA-C1A5 Undergraduate Biological Sciences with Industrial Placement (MBio)
- UBSA-C1B9 Undergraduate Biomedical Science
    - Year 3 of C1B9 Biomedical Science
    - Year 3 of C1B9 Biomedical Science
    - Year 3 of C1B9 Biomedical Science
- ULFA-C1A3 Undergraduate Biomedical Science (MBio)
    - Year 3 of C1A3 Biomedical Science
    - Year 3 of C1B9 Biomedical Science
- Year 3 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- Year 4 of UBSA-CB19 Undergraduate Biomedical Science with Intercalated Year