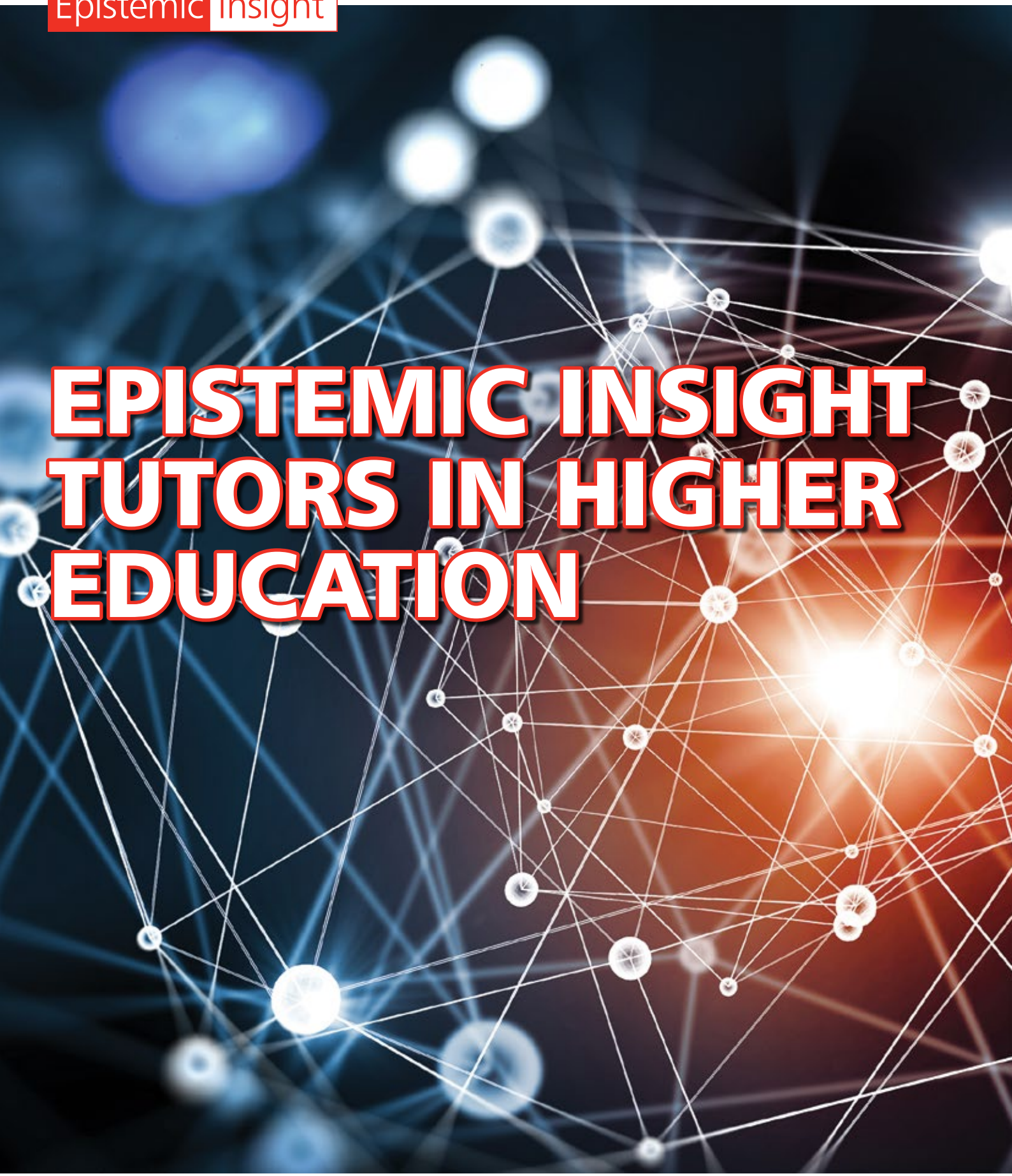
Epistemic Insight



EPISTEMIC INSIGHT TUTORS IN HIGHER EDUCATION

FACULTY OF
ARTS, HUMANITIES & EDUCATION

Canterbury Christ Church University

EI TUTORS IN HIGHER EDUCATION

The Epistemic Insight Initiative is a research and curriculum innovation project that's being carried out in teacher education and higher education institutions.

This document contains profiles of tutors at Canterbury Christ Church University who are teaching epistemic insight through their modules and workshops.

Epistemic insight means 'knowledge about knowledge', and particularly knowledge about disciplines and how they interact.

Teaching epistemic insight goes hand in hand with teaching a knowledge-rich, broad and balanced curriculum.

The Epistemic Insight initiative provides opportunities for:

- Tutors and trainee teachers to work collaboratively to co-create pedagogies for developing pupils' epistemic insight and agency in schools.
- Creating Knowledge Labs in higher education, designed to build students' epistemic insight through projects that engage with real-world opportunities and problems. This facilitates links between different disciplinary knowledge domains to help students become innovative and critical epistemic agents, equipped to co-create holistic solutions to 21st Century challenges.

To maximise the visibility and inclusivity of EI, the tools and language of epistemic insight are written into the module descriptions and assessments. Posters are displayed around lecture theatres and hand-outs are shared in and between sessions.

Trainee teachers and higher education students are encouraged to become active researchers within both their academic studies and teaching practice. This online portal outlines current academic involvement and the activities, outcomes and innovations produced for the project.

FOREWORD

Can a robot own its own ideas? Is it true that you are what you eat? Why does the Earth exist? What's the best way to keep each other safe and well during a pandemic? Are computers better at making decisions for us and at driving our cars than we are?

We all grow up wondering about the so-called Big Questions. Young people these days have the challenge of trying to come up with answers that make sense of what we see, know and do thanks to science and technology. In which case - what is the role of schools and educational institutions in helping our students to think about these Big Questions?

The Epistemic Insight (EI) Initiative is a research and curriculum innovation strategy led by the LASAR (Learning about Science and Religion) Research Centre and the Faculty of Arts, Humanities and Education at Canterbury Christ Church University.

Within the 'EI' Initiative, teachers, student teachers and tutors are collaborating on ground-breaking research to design and test strategies to engage school students in more dialogue about Big Questions.

To engage wisely with Big Questions like whether robots can think for themselves and why life exists – children need to build their understanding of the strengths and limitations of disciplines like science, maths and the arts. At the same time, teachers need to ways to bridge curriculum boundaries and to encourage enquiries that involve science and technology and can sometimes be religiously sensitive.

Dr Lynette Turner, Dean of the Faculty at Christ Church, said: *"This initiative highlights precisely the type of innovative work that the Faculty supports and develops.*

The Big Questions Day demonstrates our commitment to pushing boundaries in our training of future teachers and in our engagement with our partner schools who experience, first hand, not only the benefits of cutting-edge research but are able to contribute to it too."

Ten Higher Education institutions, led by Canterbury Christ Church University, are working together to progress the research. The findings will be used to help create a curriculum framework for schools, designed to enable young people to think more deeply and critically about Big Questions and the nature of knowledge across a wide range of subjects.

The initiative has grants totalling more than £1.5M from a range of funding organisations, being the Templeton World Charity Foundation, the Royal Academy of Engineering, ESRC (the Economic and Social Research Council), STFC (the Science and Technology Facilities Council, The National Collaborative Outreach Programme and All Saints Education Trust), together with the direct support of the University's trainee teachers.

CONTENTS

Principal Investigator: **Berry Billingsley**
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Dr Rebecca Austin

Senior Lecturer in Education

Rebecca Austin is the Primary English Team Leader within the Faculty of Education at Canterbury Christ Church University. She is the author of a range of publications, including Researching Primary Education (2016). Rebecca teaches Primary English across a range of initial teacher education programmes as well as at Masters and Doctoral level. Rebecca provides staff development for schools in relation to Primary English and learning outside the classroom.

STUDENT GROUP: BA (Hons) Primary Education (Part Time)
MODULE: Rethinking Teaching, Learning and Assessment
NUMBER OF STUDENTS: 40

BIOGRAPHICAL NOTE

Rebecca Austin is the Primary English Team Leader within the Faculty of Education at Canterbury Christ Church University. She is the author of a range of publications, including Researching Primary Education (2016). Rebecca teaches Primary English across a range of initial teacher education programmes as well as at Masters and Doctoral level. Rebecca provides staff development for schools in relation to Primary English and learning outside the classroom. In addition to Primary English, her interests are in the role of parents in children's education including the role of homework; the identity of learners in schools; learning outside the classroom; media education in primary schools, Epistemic Insight and alternative research methodologies.

RESEARCH OUTLINE

The question of why plants matter cannot be exhaustively answered using any one discipline. The workshop aims to show children how different disciplines can be used together to gain a fuller understanding of big questions. Literature, science and art reveal how plants connect to different aspects of our needs and well-being: personal and impersonal, physiological and emotional. Environmental challenges will be at the forefront of those that children will face later in life as adults. To prepare children and young people to be able to address these challenges, we need to develop their agency as learners and enable them to think across disciplinary boundaries (OECD 2018). Being able to do this requires that children gain insight into the nature of disciplines and how they can be used in combination to address real-world problems.

GUIDED RESEARCH

In the first part of this research workshop, trainee teachers observe a flowering plant scientifically by making a diagrammatic drawing and identifying the plant's parts and functions. The aim is for the trainee teacher to produce a naturalistic depiction of the plant. Almost any plant of a suitable size can be used, but ideally it will be in flower and have roots attached. The trainee teacher can be shown examples of drawings and diagrams from scientific texts to show what it means to represent a plant in a scientific way. This part of the workshop develops trainee teacher's conceptual scientific knowledge about plants by analysing a plant's functions, relationships and interactions – for example, how roots anchor the plant to the ground and take up water, how the leaves collect light for photosynthesis and how flowers function sexually. Equipped with this knowledge, trainee teacher can then explore how plants sustain human life on the planet, how we rely on plants for food, shelter and oxygen. Importantly, this part of the workshop also aims to develop trainee teacher's understanding of what it means to work in a scientific way. Learning how to work scientifically means learning how to 'think like a scientist'. The national curriculum describes working scientifically in terms of 'understanding of the nature, processes and methods of science' (DfE 2013 p. 4). In the workshop, trainee teachers gain experience of working in this way by carefully observing the plant, drawing it in a detailed and accurate way and classifying and explaining its parts and functions.

In the second part of the workshop, trainee teachers look at artistic representations of nature (and its destruction) in the form of words and images in Varmints and create their own poem and artistic representation of the same flowering plant that was used in the first part.This part of the workshop begins with trainee teachers engaging in a 'slow looking' (Pantaleo 2020) of Varmints. The trainee teacher are given time to look at the detail in each picture and the words on each page and discuss with a partner what they see, how they feel and what they think is going on in the story. The storyline itself is somewhat ambiguous and the idea of multiple interpretations can be foregrounded so that trainee teacher can offer their personal response to the story. Trainee teacher's attention can be drawn to the style of the illustrations, the colours used and the use of line, composition and light and shade to create an effect. This can then be set alongside the words which offer a different telling of the story working with the pictures to 'interanimate' (Meek 1992) the text. The words and pictures together offer a richer representation than either would do alone. Having read the book through and discussed the implications of a world without plants from a human perspective, the trainee teacher are then invited to draw, paint or sketch a picture of a flower – from an affective stance. Trainee teacher could use examples of other artists' work to think about how flowers are represented, for example, Vincent van Gogh's Sunflowers or Claude Monet's Water Lilies.

In the third part of the workshop, trainee teachers compare the scientific and artistic representations and ways of working from the first and second part. The aim is to encourage trainee teachers to see what is distinctive about the disciplines of science, art and English, and how these disciplines can each make a valuable contribution to the big question of why plants matter. By comparing the words and images in the first and second part, trainee teachers reflected on insights made into the nature of different disciplines in terms of the kinds of questions they are suited to answering and the methods and the language they use.

KEYWORDS

Art" "English" "Science" "Cross-discipline" "Primary school teacher"

Karl Bentley

Senior Lecturer

Karl Bentley is the Programme Director for PGCE 7-14 as well as teaching Science, Computing, History, Schools of the Past, Present and Future as Education and Academic studies and Enhanced Studies across full-time and part-time ITE courses. Karl works as part of the Epistemic Insight Initiative team looking at how students' reasoning on question can bridge subject compartments and how we can more effectively develop students' expressed curiosity in Big Questions helping them to gain epistemic insight and a range of ways to understand the relationships between areas of knowledge.

Module: Research and Enquiry in Education (Secondary)

BIOGRAPHICAL NOTE

Following a long career in power and control engineering entered Primary teaching via the GTP route to eventually become an AST in ICT. Now in the Faculty of Education as Programme Director for PGCE 7-14 as well as teaching Science, Computing, History, Schools of the Past, Present and Future as Education and Academic studies and Enhanced Studies across full-time and part-time ITE courses.

Supports students as both a Personal and Academic Tutor, a Placement Tutor and a Link Tutor. Supports fellow tutors as a PGCAP Mentor. Research interests in Education are focused on how we teach and learn through a philosophically pragmatic plurality of pedagogies and how teachers seek knowledge and skills in their continuing professional development, particularly in the use of digital technologies. Fellow of HEA and Founding Fellow of the College of Teaching.

RESEARCH OUTLINE

Part of the Epistemic Insight team looking at how students' reasoning on question can bridge subject compartments and how we can more effectively develop students' expressed curiosity in Big Questions helping them to gain epistemic insight and a range of ways to understand the relationships between areas of knowledge.

GUIDED RESEARCH

PGCE 7-14 - Which technologies (if any) are secondary school students using in their subject lessons? Data will be collected by student teachers via observations of lessons during the collaborative teaching phase in Secondary schools.

INDEPENDENT RESEARCH

How small artefacts can help us investigate Big Questions – i.e using Bristlebots as a starting point.

KEYWORDS

"History" "Science" "Religious Education" "Physics" "Biology" "Engineering" "Art" "Argument" "In-discipline" "Cross-discipline" "Map" "Metaphor" "Primary school student" "Secondary school student" "Secondary school teacher"

Dr Virginia Bower

Senior Lecturer in Education

Virginia Bower facilitates the Your Programme Your Opportunities provision within the Faculty of Education. This provision provides trainee teachers with a range of learning resources and webinars to extend their understanding of Epistemic Insight strategies.

STUDENT GROUP: Faculty of Education
MODULE: Your Programme Your Opportunities
NUMBER OF STUDENTS: 50

BIOGRAPHICAL NOTE

Virginia has a particular interest in English as an Additional Language and Primary English. Virginia is a Senior Fellow of Advance HE and has experience of senior leadership. Virginia has written and edited several books focused on teaching in primary.

RESEARCH OUTLINE

The Your Programme Your Opportunities provision provides trainee teachers with a range of learning resources and webinars to extend their understanding of pedagogic practice and the curriculum. The provision provides three Epistemic Insight webinars to enhance trainee teachers' understanding of cross disciplinary learning and questions, methods and norms of thought appropriate for each discipline:

Epistemic Insight: Concepts and Strategies. What is EI? How is it relevant to the curriculum and how can it be taught? An introduction to the EI lexicon, teaching strategies and pupil engagement.

https://tinyurl.com/eiwebinar1

The building blocks of Epistemic Insight. A comprehensive discussion of the relationships between Big Questions, smaller questions, cross-disciplinary interventions and developing knowledge about disciplines (questions, methods and norms of thought).

https://tinyurl.com/eiwebinar2

A guide to EI research methods and processes. Contributing to Epistemic Insight Research. A guide to submitting EI research outcomes and generating publications.

https://tinyurl.com/eiwebinar3

GUIDED RESEARCH

Trainee teachers conducted an initial survey to outline their current assumptions about the value of types of knowledge appropriate to disciplines within the curriculum. After engaging with Epistemic Insight ideas and strategies, a post-module survey was conducted that identified the extent that trainee teachers' perceptions had changed in relation to questions, methods and norms of thought appropriate to each discipline.

INDEPENDENT RESEARCH

Trainee teachers used the knowledge gained to inform various module research projects across a range of modules on their study programmes.

KEYWORDS

"Secondary school teacher" "Primary school student" "Cross-discipline"

Lizzie Burton

Senior Lecturer in Education

Lizzie Burton is a Senior Lecturer in Secondary History Education and a Senior Fellow of the HEA. Epistemic Insight research was incorporated into the Collaborative Teaching Phase and Subject Pedagogy modules. Secondary trainee teachers upon the Secondary PGCE programme conducted research into cross-disciplinary learning and Epistemic Insight.

STUDENT GROUP: PGCE Secondary, 7-14 History and School Direct History (all post-graduate ITE courses)
MODULE: Subject Pedagogy (Secondary)
NUMBER OF STUDENTS: 40

BIOGRAPHICAL NOTE

Lizzie Burton is a Senior Lecturer in Secondary History Education and a Senior Fellow of the HEA. She is currently a member of the extended secondar tutor leadership team, as well as a member of the Historical Association and the Canterbury Branch Committee. Lizzie has an extensive secondary school teaching background, having worked in departmental and faculty leadership roles in both selective and non-selective schools across Kent, London as well as abroad. Lizzie has always been interested in a cross-disciplinary approach to teaching in secondary schools, having lead whole school initiatives and projects in this area for much of her teaching career. Her research interests include creativity in the classroom as well as the application of newer history methodologies such as emotions history and material culture to teaching and learning in the secondary classroom.

RESEARCH OUTLINE

Epistemic Insight research was incorporated into the Collaborative Teaching Phase and Subject Pedagogy modules. Secondary trainee teachers upon the Secondary PGCE programme conducted research into cross-disciplinary learning and Epistemic Insight. In both cases, trainee teachers were asked to explore pupils' understanding of disciplinary knowledge within a subject and plan a cross-disciplinary lesson that addresses a question from the viewpoint of two disciplinary areas. Trainee teachers were surveyed at the start and end of the intervention to ascertain if a shift in perception and attitude had occurred in relation to the teaching of the questions, methods and norms of thought associated with different disciplines.

GUIDED RESEARCH

Students conducted an initial survey to ascertain their attitudes towards the school curriculum and the value of types of knowledge appropriate to different disciplines. After engaging with cross-disciplinary learning strategies within classroom sessions, a post-module survey was conducted that outlined the extent that students' perceptions had changed in relation to the curriculum and ways of knowing appropriate to each discipline.

INDEPENDENT RESEARCH

Trainee teachers generated independent research projects that explored cross-disciplinary learning and Epistemic Insight within the context of Secondary education and the National Curriculum. During their module assignment, trainee teachers were asked to explore pupils' understanding of disciplinary knowledge within a subject and plan a cross-disciplinary lesson that addresses a question from the viewpoint of two disciplinary areas. This exploration was conducted during trainee teachers' active practical engagement within their teaching practice. Outcomes from trainee teachers' cross-disciplinary lessons were presented at the EI Scholarship event.

KEYWORDS

"Cross-discipline" "Secondary school teacher" "History"

Allan Callaghan

Lecturer in Education

Allan is a Lecturer in Education within the School of Teacher Education and is also a Lecturer in Computing with the School of Engineering, Technology and Design. Allan has worked on interdisciplinary Epistemic Insight projects that cross the boundaries between Computer Science and the Arts and Humanities.

STUDENT GROUP: BSc (Hons) Computer Science
MODULE: Application Development
NUMBER OF STUDENTS: 85

BIOGRAPHICAL NOTE

Allan is a Subject Tutor for Initial Teacher Training for Secondary School Computing teachers in Kent. He teaches Computer Science within Subject Pedagogy sessions. He is a Lecturer in Education within the School of Education and is also a Lecturer in Computing with the School of Engineering, Technology and Design.

RESEARCH OUTLINE

According to the Organisation for Economic Co-operation and Development, 'future-ready [citizens] will need both broad and specialised knowledge' (OECD 2018, pp. 4) in which to think effectively across disciplinary boundaries within an increasingly interconnected world. The importance of both the arts and science for the 21st Century has been recognised in the acronym STEAM: Science, Technology, Engineering, Arts and Maths. STEAM education has been linked to 'increased innovation' (Colucci-Gray et al. 2017, p.28). An epistemic understanding of both the arts and science is increasingly recognised as vital for developing curiosity and producing citizens that understand the potential of "what if". Epistemic Insight (EI) means 'knowledge about knowledge' and particularly, knowledge about disciplines and how they interact. One of the objectives of the Epistemic Insight initiative at CCCU is to explore the types of knowledge and methods associated with different disciplines and how these might interact to address Big Questions in the world. Big Questions are questions that address the nature of reality and human personhood. Our capacity to address Big Questions is particularly urgent in the 21st Century. Both dance and computer science consider ways in which a sensory environment can be interpreted through the human embodied experience – dance interprets sensory stimulus in which to choreograph the movements of the body; computer science considers both input and output procedural responses to human participants within specific coordinates via a range of sensors. In the 21st Century, digitally mediated landscapes provide dance with new opportunities to interact within a world in which our senses are engaged in new ways, allowing us to question many of our habitual assumptions about the ways we understand ourselves as both embodied and aesthetic agents.

Aims:
To create an interdisciplinary response to a question concerning human personhood via dance and computer science.

Objectives:

- To identify the types of knowledge and methods associated with the disciplines of dance and computer science
- To explore ways in which different disciplines can interact to address a question of human personhood
- To create an interdisciplinary outcome that responds to a question concerning human personhood

GUIDED RESEARCH

In groups, students were asked to address the following question: Can a computer algorithm produce dance? Students considered the question from the point of view of the disciplines of dance and computer science. Students were asked what methods, processes and types of knowledge do these disciplines offer in which to answer the question. Secondly, students were asked to consider ways in which dance and computer science might interact from their own disciplinary perspective – what methods, processes and ways of thinking were appropriate to their discipline? Students were asked to share their thoughts with a team from a different discipline – what are the similarities and differences in their disciplinary approach? How are these affected by the different methods, processes and ways of thinking appropriate to each discipline? In interdisciplinary groups, students were asked to consider how two disciplines might interact to produce an effective intervention that combines the characteristics and benefits of both disciplines. What might the intervention look like?

KEYWORDS

"Engineering" "In-discipline" "Cross-discipline" "Art"

Dr Gina Donaldson

Senior Lecturer in Education

During the Curriculum and Pedagogy module upon the PGCE Primary programme, trainee teachers explore how curricula are constructed and how this links to the ways in which the curriculum is delivered and experienced across primary provision. Gina Donaldson is a Senior Lecturer in Education and the Curriculum Team Leader for Primary Mathematics at Canterbury Christ Church University. She has a BEd (Cantab) in Mathematics and Education, an MA in Education and an Ed. D including research into deep subject knowledge of mathematics. She also leads mathematics specialist routes into Initial Teacher Education. She is particularly interested in children's mathematical thinking and the mathematical knowledge of primary teachers.

STUDENT GROUP: Primary PGCE
MODULE: Curriculum and Pedagogy (Primary)
NUMBER OF STUDENTS: 83

BIOGRAPHICAL NOTE

Gina Donaldson was a primary school teacher for eleven years before moving into Higher Education. She has a BEd (Cantab) in Mathematics and Education, an MA in Education and an Ed. D including research into deep subject knowledge of mathematics. She is a Senior Lecturer in Education and the Curriculum Team Leader for Primary Mathematics at Canterbury Christ Church University. She also leads mathematics specialist routes into Initial Teacher Education. She is particularly interested in children's mathematical thinking and the mathematical knowledge of primary teachers.

RESEARCH OUTLINE

During the Curriculum and Pedagogy module, trainee teachers explore how curricula are constructed and how this links to the ways in which the curriculum is delivered and experienced across primary provision. As part of this process, trainee teachers explore the rich interconnectedness of subjects within curricular frameworks. As part of the assignment, trainee teachers critical reflect on the teaching and learning of Maths and English and how this might be promoted through another area of the curriculum.

GUIDED RESEARCH

Students conducted an initial survey to outline their current assumptions about the value of types of knowledge appropriate to disciplines within the curriculum. After engaging with cross-disciplinary learning strategies and ideas within classroom sessions, a post-module survey was conducted that ascertained the extent that students' perceptions had changed in relation to ways of knowing appropriate to each discipline.

INDEPENDENT RESEARCH

For part of the Curriculum and Pedagogy assignment, trainee teachers had to critical reflect on the teaching and learning of Maths and English and how this might be promoted through another area of the curriculum. This reflection was conducted during their teaching placement within schools. Trainee teachers' reflections were informed by the following questions:

- How is the curriculum organised? In subjects? Areas of learning?
- How much time is allocated to different curriculum areas?
- Are links made between curriculum areas?
- Are experiences or questions used as starting points for learning?
- How often are children given opportunities to determine the content of the curriculum– e.g. by asking questions, sharing interests?
- Do pupils understand the characteristics of different disciplines (Science, Art, English, Maths, Religious Studies, History etc) and how these address topics differently?
- Is a cross-curricular approach to learning beneficial for enhancing pupils' knowledge of topics, as well as their understanding of different subject disciplines?

KEYWORDS

"English" "Primary school teacher" "Cross-discipline" "Maths"

Georgina Gosden

Senior Lecturer in Education

Georgina Gosden is the Assistant Director of Childhood Studies and Education Suite and Inclusion Lead for Undergraduate Programmes (Faculty of Education Academic Programmes). On the From Learning to Labour and Research Methods and Design modules upon the programme, students are given the opportunity to engage in active research in which to explore how teaching a learning theme using a cross disciplinary approach might enhance pupils' understanding of the power and limitations of knowledge within a range of different disciplines

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STUDENT GROUP: BA (Hons) Special Education Needs and Inclusion Studies
MODULE: From Learning to Labour / Research Methods and Design / Values Justice and Participation
NUMBER OF STUDENTS: 45

BIOGRAPHICAL NOTE

Georgina Gosden is the Assistant Director of Childhood Studies and Education Suite and Inclusion Lead for Undergraduate Programmes (Faculty of Education Academic Programmes). Georgina has been at Canterbury Christ Church University for 15 years and has been instrumental in validating the BA Special Education Needs and Inclusion programme.

RESEARCH OUTLINE

Students that undertake study upon the BA (Hons) Special Education Needs and Inclusion Studies programme pursue a range of careers including teaching and working in the social and charity sector. On the From Learning to Labour and Research Methods and Design modules upon the programme, students are given the opportunity to engage in active research in which to explore how teaching a learning theme using a cross disciplinary approach might enhance pupils' understanding of the power and limitations of knowledge within a range of different disciplines. By incorporating discovery bags in sessions, recent students have explored Charles Dickens' 'Oliver Twist' with pupils using a variety of disciplinary approaches. . The research explored the extent that pedagogic strategies can enhance participants' understanding of ways of knowing, as well as the extent that a cross-disciplinary approach might develop participants appreciation of inclusivity. The research has an affinity with Epistemic Insight curriculum Framework objectives:

- Develop pupils' curiosity and capacity to address and express questions that bridge disciplines and subjects including Big Questions (questions about the nature of reality and personhood that bridge science and the wider humanities)
- Explain the characteristics, potential and limitations of a range of disciplines and areas of knowledge, how they interact to inform our thinking about different types of questions and why the framing of questions matters.

GUIDED RESEARCH

Students conduct an initial survey to outline their current assumptions about the value of types of knowledge appropriate to discipline within the curriculum. After engaging with cross-disciplinary learning strategies, this survey is followed by a post-module survey that ascertains the extent that students' perceptions have changed in relation to ways of knowing appropriate to each discipline.

INDEPENDENT RESEARCH

Students were asked to generate teaching and learning strategies that addressed the question: To what extent is Oliver Twist relevant to today's world? These strategies were designed to engage participants different ways of knowing appropriate to a range of disciplines, as well as a cross-disciplinary method of learning. Students initially identified which disciplines were relevant to addressing the question and then identified the types of associated questions which were relevant to each discipline's type of knowledge and norms of thought. Students developed Discovery Boxes based on their strategies that were distributed within community groups / schools. The boxes contained strategies, ideas and stimulus designed to engage pupils with a cross-curricular approach to the question. Students reflected on the extent that their strategies enhanced participants' understanding of ways of knowing, as well as the extent that a cross-disciplinary approach develops their appreciation of an inclusive society.

KEYWORDS

"Cross-discipline"

Dr Lee Hazeldine

Senior Lecturer in Education

Lee Hazeldine is an Epistemic Insight Initiative Research Fellow, Level 5 Lead on the BA Part-time in Primary Education and Module Lead for Rethinking Teaching, Learning and Assessment. During the Research and Enquiry in Education module, trainee teachers conducted research into cross-disciplinary learning and Epistemic Insight. The module required trainee teachers to generate an independent research project based on these themes and consider the relevant research methodologies and ethical issues relevant to their chosen topic of study.

STUDENT GROUP: PGCE Secondary
MODULE: Research and Enquiry in Education
NUMBER OF STUDENTS: 20

BIOGRAPHICAL NOTE

Lee Hazeldine is an Epistemic Insight Initiative Research Fellow, Level 5 Lead on the BA Part-time in Primary Education and Module Lead for Rethinking Teaching, Learning and Assessment. He has worked as a Learning Consultant in a range of educational sectors and has specialist expertise in digital learning strategies. His research interests include cross-curricular learning, multimodal and digital learning and affect theory.

RESEARCH OUTLINE

During the Research and Enquiry in Education module, trainee teachers conducted research into cross-disciplinary learning and Epistemic Insight. The module required trainee teachers to generate an independent research project based on these themes and consider the relevant research methodologies and ethical issues relevant to their chosen topic of study. In each case, trainee teachers were required to conduct their research projects during their teaching practice within Secondary schools. On completing their research projects, trainee teachers were given the opportunity to present their research as part of the Epistemic Insight Scholarship event. Research topics explored by trainee teachers on the module ranged from an exploration of Big Questions within the curriculum of a girls' school to an examination of the perceived role of the teacher in generating subject silos for learning.

GUIDED RESEARCH

Students conducted an initial survey to outline their current assumptions about the curriculum and the value of types of knowledge appropriate to disciplines within the curriculum. After engaging with cross-disciplinary learning strategies within classroom sessions, a post-module survey was conducted that ascertained the extent that students' perceptions had changed in relation to the curriculum and ways of knowing appropriate to each discipline.

INDEPENDENT RESEARCH

Trainee teachers generated independent research projects that explored cross-disciplinary learning and Epistemic Insight within the context of Secondary education and the National Curriculum. Trainee teachers considered a range of relevant research methodologies and ethical issues relevant to their chosen topic of study. In each case, trainee teachers were required to conduct their research projects during their teaching practice within Secondary schools.

KEYWORDS

"Secondary school teacher" "Cross-discipline"

Lorna Hughes

Senior Lecturer in Education

Lorna is the Course Director for the iQTS programme and is the School Lead for Internationalisation. Lorna has been involved in the Epistemic Insight initiative within both the iQTS and National Award for SEN Coordination programmes.

STUDENT GROUP: National Award for SEN Coordination
MODULE: Changing Perspectives on SEN
NUMBER OF STUDENTS: 30

BIOGRAPHICAL NOTE

Lorna is the Course Director for the iQTS programme and is the School Lead for Internationalisation. Her work has focused around special educational needs and inclusion. She also has a passion for international opportunities and the transformative aspect this can provide for learners. Previous to working at CCCU, Lorna taught in a mainstream secondary school as an English Teacher and held the role of SENCO.

RESEARCH OUTLINE

Epistemic Insight research activities were included upon the Changing Perspectives on SEN and the role of the SENCo module assignment. Students were challenged to consider the perspectives of different disciplinary insights when exploring notions of human personhood in relation to Special Educational Needs. Students explored the implications of both medical and social models of SEN, as well as representations of SEN within wider culture.

GUIDED RESEARCH

Epistemic Insight research activities were been conducted with a range of Special Educational Needs Coordinators cohorts within their module assignment. Firstly, an introductory lecture and seminar was delivered in which the aims, purpose and objectives of Epistemic Insight were discussed. The role of interdisciplinary study was outlined and the different methods and norms of thought of different disciplines was considered. Secondly, SENCos were challenged to consider the perspectives of different disciplinary insights when exploring notions of human personhood in relation to Special Educational Needs. SENCOs responded to an online survey to outline their perceptions of EI in relation to SEN.

KEYWORDS

"Cross-discipline"

Joy Mower

Senior Lecturer in Education

Joy Mower is a Senior Lecturer at CCCU teaching across Primary ITE programmes. During the Exploring Curriculum Pedagogy module, teachers explored how curricula are constructed (including the 'hidden curriculum') and how this links to the ways in which the curriculum is delivered and experienced across all primary age phases. As part of this process, trainee teachers explored the rich interconnectedness of subjects within curricular frameworks.

STUDENT GROUP: BA (Hons) Primary Education Year 1
MODULE: Exploring Curriculum Pedagogy (Primary)
NUMBER OF STUDENTS: 114

BIOGRAPHICAL NOTE

Joy is a Senior Lecturer at CCCU teaching across Primary ITE programmes. She is the Programme Director for the BA Primary Education Part Time programme, a module lead for Exploring Curriculum and Pedagogy and the Partnership Area Lead for school across the Swale district. Her areas of interest and expertise are English and Art and Design and she has an MA in Enabling learning, Inclusion and Institutional Development, focusing on special educational needs, particularly language and literacy difficulties. She has experience of working as a class teacher and leading literacy across a large primary school with specialist provision for speech, language and communication need. Joy has made five trips to Palestine to work with colleagues there as the English consultant in a CCCU team working collaboratively with universities in Palestine, within the World Bank funded Teacher Education Improvement Project. This project won the 2018 Times Higher Education International Impact Award. Joy has also provided teachers' continuing professional development courses for Kent County Council. She is currently studying for a PhD exploring the semiotic, epistemic and epistemological implications of teacher- led drawings and diagrams in children's work across a range of curriculum subjects.

RESEARCH OUTLINE

During this module, trainee teachers explored how curricula are constructed (including the 'hidden curriculum') and how this links to the ways in which the curriculum is delivered and experienced across all primary age phases. As part of this process, trainee teachers explored the rich interconnectedness of subjects within curricular frameworks.Trainee teachers were asked to consider different ways of approaching learning questions through the 'lens' of different disciplines in which to develop an understanding of the power and limitations of different ways of knowing appropriate to different disciplines.

GUIDED RESEARCH

Students conducted an initial survey to outline their current assumptions about the value of types of knowledge appropriate to disciplines within the curriculum. After engaging with bridging questions and cross-disciplinary learning strategies within classroom sessions, a post-module survey was conducted that ascertained the extent that students' perceptions had changed in relation to ways of knowing appropriate to each discipline.

INDEPENDENT RESEARCH

Trainee teachers were asked to consider subjects of the Foundation Curriculum in relation to a bridging question of their choice. They were then asked to create a scheme of work and a reflection that explores the interconnectedness and differences between two disciplines and detail how these could be investigated through a series of teaching and learning activities. The trainee teachers' schemes of work and reflection explored the power and limitations of ways of knowing appropriate to different disciplines (methods and norms of thought) in which to effectively understand and address cross-disciplinary questions.

KEYWORDS

"Primary school teacher" "Cross-discipline"

Prof Angela Pickard

Professor of Dance Education

What is disciplinary knowledge in dance? How does one think like a dancer and/or choreographer? We wanted to investigate what questions Dance Education students asked, what research and methods they used as they created a piece of choreography, and how dance knowledge interacted with knowledge from other disciplines.

STUDENT GROUP: BA (Hons) Dance Education
MODULE: Dance in Society
NUMBER OF STUDENTS: 12

BIOGRAPHICAL NOTE

Professor Angela Pickard has performed, created, researched and presented dance in her roles as dancer, choreographer, teacher, advisor, consultant and academic. Angela studied ballet and contemporary dance. She has worked with a number of independent and mainstream choreographers in a range of collaborative and creative projects and performances in a multitude of theatres and sites in the UK and internationally. She is currently suite Lead for programmes in Performing Arts and Programme Director for BA Dance Education and MA Arts, Health and Performance. Angela teaches ballet, Dance Pedagogy, Choreography and Dance Research. She also supervises PhD students. In addition, she is Artistic Director of Canterbury Dance Company. Angela's research investigates relationships between body and identity in dance and how social worlds shape human bodies: embodiment. Her book, Ballet Body Narratives was published by Peter Lang in 2015. Angela continues to research dance and embodiment bringing together sociology, pedagogy and psychology. Angela is also Editor in Chief for the international, social citation indexed journal Research in Dance Education.

RESEARCH OUTLINE

We wanted to investigate what questions Dance Education students asked, what research and methods they used as they created a piece of choreography, and how dance knowledge interacted with knowledge from other disciplines. As academics, we know it is important to engage student's epistemic curiosity and insight and enable them to articulate their knowledge and understanding of their discipline. However, it may be surprising, but many dance education students embodied and experiential frames of reference are often taken for granted and normalised by the dance education students, and rarely acknowledged or understood by a wider, non-dance audience.

GUIDED RESEARCH

Twelve dance students participated in the Dance and Epistemic Insight project and engaged in a creative dance project where they drew on knowledge from a range of disciplines and translated that knowledge into dance choreography as dance for screen. During the 12-week research and development process, the students were partners, as co-creators of understanding, co-constructors of the curricula and development of the project and co-producers of knowledge. The students engaged in a number of staff facilitated EI sessions to raise awareness of norms of thought in dance and other disciplines and student/peer-led activities. At the start of the Dance in Society module the students knew that they were going to engage in dance and choreographic practice and make a dance film/dance for screen piece. Students had access to on-campus studio spaces for staff and peer led workshops including peer review during the creation of work. The students engaged with a range of technology enhanced teaching as online whole group mini-lectures, questions to respond to, discussions using Padlet, film-making tutorials, formative feedforward tutorials and directed tasks throughout the 12-week period. The students also kept reflective choreographic journals during the process of making their dance work. The project concluded with a dance film screening and three students presented their work at the Epistemic Insight student conference.

KEYWORDS

"Cross-discipline" "In-discipline" "Art"

Dr Dani Shalet

Research Fellow and Associate Lecturer in Education

Dani is a Research Fellow and Associate Lecturer in Education. Dani teaches on the Secondary PGCE Research and Enquiry in Education module. During this module, Dani provided student teachers with the opportunity to explore issues related to COVID 19 and their implications for the national curriculum.

STUDENT GROUP: PGCE Secondary
MODULE: Research and Enquiry in Education (Secondary)
NUMBER OF STUDENTS: 20

BIOGRAPHICAL NOTE

I have a PhD in science and religion and an undergraduate and postgraduate degree in History, which focuses on natural philosophy and witchcraft. I also have a PGCE in Physics with Maths. It was my multisciplinary background that led me to the LASAR team, and Epistemic Insight. I am currently an Associate Lecturer and Research Fellow in the LASAR team and investigating ways to develop primary and secondary education in the UK. I am delighted to be a part of the EI team as it enables me to combine my many different interests with innovative pedagogical approaches. I am currently teaching on the Research and Enquiry in Education Module upon the PGCE Secondary Programme.

RESEARCH OUTLINE

As part of the REE module, student teachers tackled the issue related to COVID 19 and its implication for the national curriculum. ITE students were introduced to different research methods and approaches and were asked to design their own research study.

GUIDED RESEARCH

Secondary student teachers were given the opportunity to practice what they have learned through action research, and were tasked with formulating their own research question, contacting participants (usually other teachers) to take part in their study, gathering data, and reporting and discussing their findings in a report. After the research process is complete and their assignments were submitted, students were offered an opportunity to publish their work in a student 'digest', published by CCCU and were also invited to take part in an interview to provide feedback on their experiences on the course, with EI, and with research engaged teaching.

KEYWORDS

"Cross-discipline" "Secondary school teacher" "Secondary school student" "Model" "Map" "Text Analysis" "Evidence" "Religious Education" "Science" "History"

Dr Paula Stone

Senior Lecturer in Education

Paula Stone is a Senior Lecturer in Education working with student teachers and teachers on postgraduate and Master's programmes. As part of the Practitioner Research in Education module, student teachers are introduced to the principles of epistemic understanding and the importance of being a research-engaged practitioner.

STUDENT GROUP: School Direct PGCE
MODULE: Practitioner Research In Education
NUMBER OF STUDENTS: 70

BIOGRAPHICAL NOTE

I am Senior Lecturer in Education working with student teachers and teachers on postgraduate and Master's programmes. I took a circuitous route into higher education, undertaking my first degree in psychology at the age of 30 years and then a PGCE. Before working for Canterbury Christ Church University I taught in primary schools for nine years. As a result of my own biography I have a particular interest in why and how students of all ages learn and are motivated to learn. I am delighted to be part of the Epistemic Insight project as it is enabling me, with my students, to explore ways of learning that will increase and enhance educational outcomes for all children including those from lower socio-economic groups. This Epistemic Insight project is also providing a unique opportunity for my students teachers to become research engaged at the very beginning of their careers, thus increasing their ability to be reflective and reflexive practitioners.

RESEARCH OUTLINE

I aim to use the Integrating Teaching and Research Framework developed by Stone and Billingsley (2019) to prepare student teachers to engage in a small scale research activity in their school settings based on the principles of Epistemic Insight pedagogy. It is anticipated that students will learn how to undertake qualitative research, analyse their findings and share their results. Data from the students about their epistemic understanding and the significance of being a research engaged practitioner will be collected via field notes, questionnaires and interviews.

GUIDED RESEARCH

As part of the Practitioner Research in Education module, student teachers will be introduced to the principles of epistemic understanding and the importance of being a research-engaged practitioner. Over the course of the module student teachers will engage in activities that will develop their understanding of both of these concepts. They will then apply these in their school setting.

The students will have already undertaken a pre' knowledge' of EI before any introduction to the project. After they have been introduced to the project they will undertake a post questionnaire, before undertaking their research. After the research process is complete student teachers will be invited to take part in an interview to examine the outcomes of both EI and research engaged teaching.

KEYWORDS

"Secondary school student" "Primary school teacher" "Model" "Cross-discipline" "Evidence"

Dr Caroline Thomas

Senior Lecturer in Education

Caroline Thomas is a Senior Lecturer in Primary Education and a former headteacher of two primary schools. Her research seeks to explore primary trainees' knowledge and understanding of epistemic insight. This includes their understanding of the nature of science in the real world and in multidisciplinary arenas. A particular focus is on trainee teachers' understanding of the importance and limitations of observation in science.

STUDENT GROUP: BA (Hons) Primary Education
MODULE: Subjects in the Curriculum (Primary)

BIOGRAPHICAL NOTE

I am a Senior Lecturer in Primary Education and a former headteacher of two primary schools. My first degree focused on sports science and biology and I have always been interested in the holistic development of children. I am part of the Epistemic Insight (EI) Team and am leading the Primary Initial Teacher Education part of the project. I am investigating ways in which epistemic insight can be incorporated into modules and trainee teachers' engagement with EI.

I am also part of the research team at our National Institute Christian Education Research (NICER) researching how newly qualified teachers manage encounters between science and religion in the primary classroom.

RESEARCH OUTLINE

The epistemic insight research seeks to explore primary trainees' knowledge and understanding of epistemic insight. This includes their understanding of the nature of science in the real world and in multidisciplinary arenas. A particular focus is on trainee teachers' understanding of the importance and limitations of observation in science.

Other aspects include exploring trainee teachers' appreciation of the 'big questions' and their attitudes towards these types of questions in their lives and in their teaching. Research methods include the use of surveys and interviews.

GUIDED RESEARCH

As part of subjects in the Subjects in The Curriculum Module, you will have the opportunity to explore the 'scholarly words' used to explain the ways in which children acquire knowledge in different subject disciplines. We ask that you research and find out how many times these scholarly words are used in two different subjects in the primary National Curriculum: data, evidence, observation, enquiry, knowledge, inference, analysis, creatively.

Reflect on what they might mean in different subjects.

- Do they mean the same thing across subjects?
- How appropriate are they to the two subject you chose?
- What other words might be used instead?

INDEPENDENT RESEARCH

Exploration of children's observations in science

As part of your Subjects in the Curriculum Module (Science), you are invited to contribute to the University's Epistemic Insight research by undertaking research into the importance and limitations of children's observations in science. As part of this module, you will have the opportunity to explore and develop your own skills in scientific observation, develop your understanding of the nature of science and reflect on the ways in which you can inspire and engage pupils in science when on placement in school.

To develop your own skills as a student teacher-researcher, we ask that you plan a session which invites children to engage in scientific observation. For example, this can entail exploration of natural or man-made objects, an event or a process. Scaffold the children's learning by structuring and guiding them through the experience.

1. Record and reflect on the types and quality of the observations pupils make. (Prompts: How relevant are they to the task? Can they identify what look for or what to measure to obtain a result in an investigation? To what extent do they take steps to make them accurate? Do they repeat observations?)
2. Reflect on the sense pupils make of their observations. (Prompts: To what extent do they help them form new ideas or change their minds? To what extent are their conclusions based on evidence or pre-conceived ideas? Analyse any differences in pupils' viewpoints and reasoning. Consider the types of questions pupils raise and any new ideas they form. Are pupils willing to consider alternative ideas that may fit the evidence?)
3. Reflect on the role your teaching and interactions with pupils have on the outcomes.

KEYWORDS

"Science" "Evidence" "Primary school student"

Epistemic Insight

Canterbury Christ Church University