

THE BEGINNING TEACHER IN THE SCIENCE/ RELIGION ENCOUNTER



Building Confidence for an Integrated Vision of Knowledge
SPRING/SUMMER 2021 BRIEFING PAPER



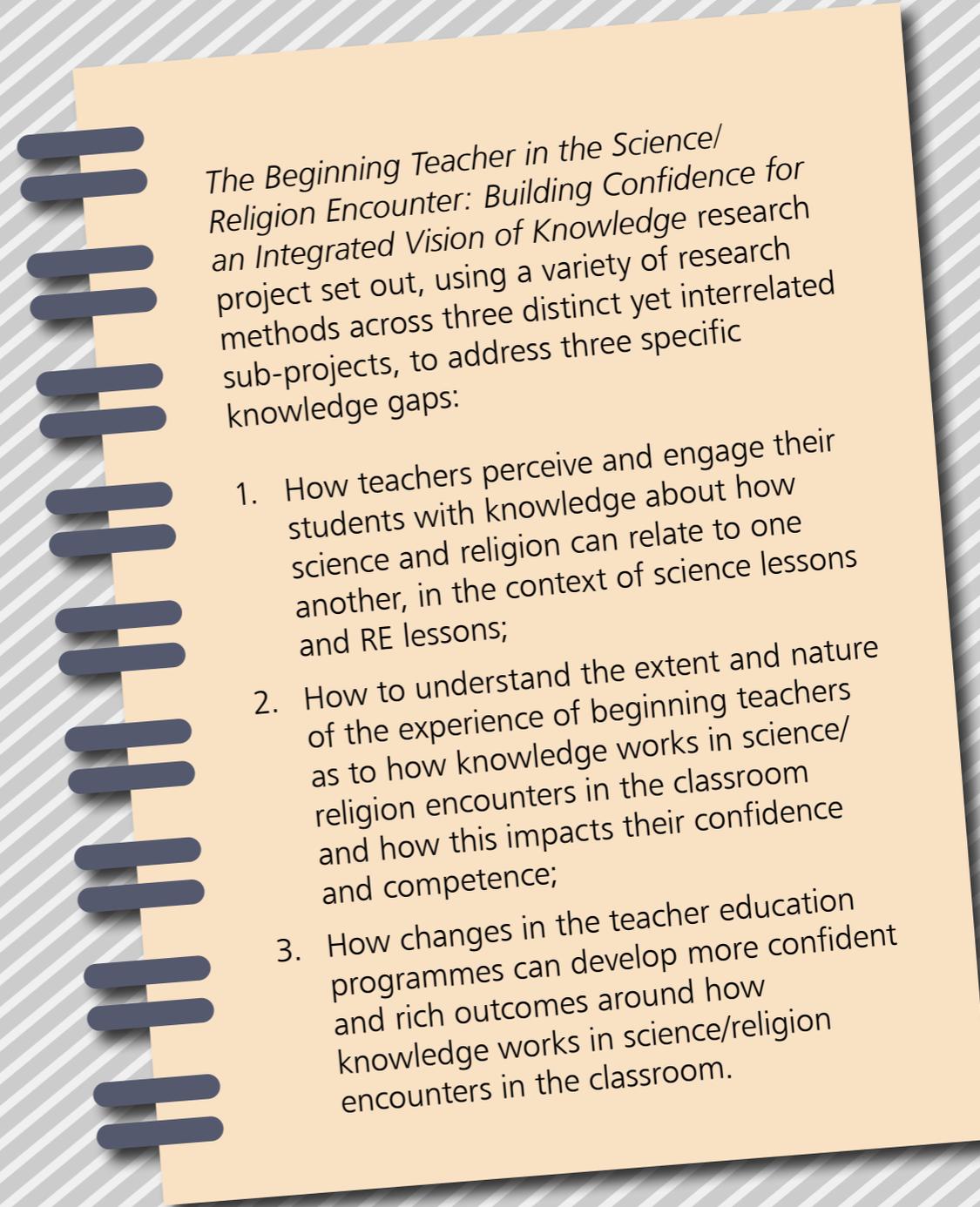
BACKGROUND

In 2019 a report was published by the Theos think tank that revealed the conflict between science and religion is often talked up in the UK as if it were part of a culture war, as it allegedly is in the US (<https://www.theosthinktank.co.uk/research/2019/06/18/science-and-religion-the-perils-of-misperception>).

In reality they found this conflict between science and religion is more assumed than real, although a sizeable minority of the UK population does see conflict between the two. The report also found that the UK is under-researched in this whole area.

RESEARCH TEAM

Professor Robert A. Bowie *Dr John-Paul Riordan*
Gill Harrison *Dr Deborah Scott*
Dr Sabina Hulbert *Caroline Thomas*
Professor Lynn Revell *Dr Mary Woolley*



The Beginning Teacher in the Science/Religion Encounter: Building Confidence for an Integrated Vision of Knowledge research project set out, using a variety of research methods across three distinct yet interrelated sub-projects, to address three specific knowledge gaps:

1. How teachers perceive and engage their students with knowledge about how science and religion can relate to one another, in the context of science lessons and RE lessons;
2. How to understand the extent and nature of the experience of beginning teachers as to how knowledge works in science/religion encounters in the classroom and how this impacts their confidence and competence;
3. How changes in the teacher education programmes can develop more confident and rich outcomes around how knowledge works in science/religion encounters in the classroom.

PROJECT OVERVIEW

Undertaken by the National Institute for Christian Education Research [NICER], this project, led by Professor Bob Bowie, Director of NICER, is funded by Templeton World Charity Foundation as part of a wider scheme of research titled Big Questions in Classrooms.

Although studies have explored school pupils' attitudes concerning science and religion, there has been little research on beginning teachers' experiences in their development and formation and not much is known about how big questions of ultimate significance and meaning are framed in classrooms or the extent of teachers' experiences of the science/religion encounter. This project seeks to address this gap, develop informed responses for teacher education and find some preliminary understandings of the impact of the use of that knowledge in teacher education programmes.

This project comprises of three sub-projects. Two of these sub-projects research specific gaps in knowledge of teacher development and how big questions are framed in science and RE classrooms with a third that seeks to implement some changes.

SP1

The first sub-project [SP1] is researching the encounter between science and religion in primary and secondary science and RE classrooms using a video research technique that uses clips of recorded interactions in the classroom as catalysts for talking about and making sense of the encounter. The clips and the subsequent recorded discussion are expected to be a stimulus for professional discussion which in turn can illuminate these moments and how they are understood by pupils and teachers.

SP2

The second sub-project [SP2] is researching the experience of beginning teachers in science/religion encounters in the classroom. Initial focus groups were carried out with primary student teachers and secondary student teachers of science and RE at several English universities. The findings from these focus groups were used to design an online survey, targeted at student teachers and teachers in the first two years post-qualification. This was launched in late March 2021. It is hoped that the survey data will reveal a comprehensive understanding of where beginning teachers find themselves in relation to science/religion encounters in the classroom.

SP3

The third [SP3] will combine the findings of both to make a teacher education resource for use by the participating universities, and evaluate its initial impact trialling a change to teacher education programmes and evaluating the early impact of that change.

METHODOLOGY

SP1 - Four research methods were used (lesson video analysis, teacher verbal protocols, pupil group verbal protocols and individual teacher interviews). Data were video recorded (and managed using NVivo which is a qualitative data analysis computer software package). More than six hours of video data were analysed using Grounded Theory Methods by two educational researchers, the class teacher and two groups of pupils (three girls and three boys). Researchers took a pragmatic approach to coding as recommended by Bryant and Charmaz.¹ The interpretivist theoretical perspective (symbolic interactionism) was underpinned by a social constructionist epistemology (hence the methodology is Straussian Grounded Theory). Appropriate criteria for evaluating the emergent grounded theory were used.² Data were recorded in 2019.

SP2 – The research design involved recruitment of six university providers of initial teacher education to enable semi-structured focus groups with over 70 pre-service teachers across two academic years. These included primary student teachers, secondary student teachers of science and RE, and student teachers from undergraduate, postgraduate and Schools Direct programmes. Data from the focus groups were transcribed and analysed according to emergent themes. Examples from the focus group data, along with broader literature, were used to design an online survey instrument.

Focus group interviews revealed rich and varied data. These were curious and knowledgeable students with high ambitions for the future teaching of science and RE, both in primary and secondary schools.

They shared a wide variety of topics that emerged in their classrooms as science/religion encounters, either through their own planning or through the questions asked and links made by their pupils. RE teachers often taught about the Big Bang or evolution, but also covered contemporary subjects such as climate change and stewardship. Science teachers raised topics such as dissection, blood transfusion and sex determination as areas where religious views might play a role. Each group of subject teachers desired to know more about the other subject, to improve dialogue in order to find out how and when such topics were covered in 'the other' subject. Student primary teachers tended to see the two subjects of science and religion as discrete rather than overlapping, but many had very limited experience of teaching RE. All the student teachers who participated appeared open to ideas and to finding out more about teaching science/religion encounters. Several showed strong ideals about how they would like to approach this area in the future, but some felt limited by the performative constraints of school life.

The online instrument was designed to explore a number of distinct, but related areas: experience of science/religion encounters, perception of the relationship between science and religion, competence in planning for and responding to such encounters (including substantive knowledge and articulation of purpose), confidence in teaching for such encounters and barriers/support mechanisms for such encounters and misperception of science and RE knowledge. Various networks were employed to disseminate the online survey among pre-service teachers and teachers in the first two years post qualification to enable a large number of respondents from across the country.

1 Bryant, T. and Charmaz, K. (2010) *The SAGE Handbook of Grounded Theory*. London: Sage Publications.
2 Lincoln, Y. and Guba, E. (1985) *Naturalistic Inquiry*. Beverly Hills, CA: Sage.

SOME OF THE WORK CARRIED OUT

1. Professor Bowie, Project Leader, mentioned the project at two AULRE/REOnline seminars which took place on 14th May 2020 and 15th May 2020, addressing 120 RE curriculum writers, tutors and teachers.
2. An Advisory Group with expertise in a number of areas met in June 2020 and March 2021 with a further meeting expected to take place during Summer 2021.
3. Professor Bowie presented a paper on the project to the RExChange conference event on 3rd October 2020. This virtual conference would have reached a considerable number of teachers and leading figures in the RE professional world.
4. A local virtual seminar at Canterbury Christ Church University was held on 7th October 2020 with papers presented by Professor Revell and Dr Riordan on SP1 for local RE teachers and university students and tutors (20).
5. An initial meeting of the teacher educators' network with tutors from all of the participating universities took place on 8th October 2020.
6. Dr Woolley presented a paper, *Crossovers and collaborations: beginning teachers' perceptions of opportunities for science/ religion encounters in the classroom* and Professor Revell presented a paper, *Curating superficiality: a comparison of two lessons on the Creation Story* on the project to the Church of England Inaugural National Research Conference 'Vision into Practice' on 17th November 2020 attended virtually by 70 school leaders/ diocesan leaders.
7. On 29th January 2021 Professor Bowie gave a verbal general update on the project to the Education sub-committee of The Cathedrals Group of Universities.
8. Professor Bowie highlighted the project on 29th January 2021 to a meeting of 30 South East England HMI (school inspectors).
9. A number of meetings with representatives from participating universities have been arranged with the first one having taken place on 24th February 2021. The purpose of these meetings was to discuss strategies for dissemination of the survey and also to build relationships with subject leads to help with the development of phase 3 of the project.
10. A number of papers have been submitted and accepted for important conferences for Teacher Education networks including the Teacher Education Advancement Network (TEAN) conference which is due to take place online on 6th and 7th May 2021 (www.tean.ac.uk). The TEAN conference brings together a large network of teacher education tutors and constitutes the biggest gathering of this category of professionals in England.
11. Papers have been accepted for the Association of University Lecturers in Religion and Education (AULRE) conference in May 2021 (www.aulre.org) and to the British Educational Research Association (BERA) conference in September 2021 (www.bera.ac.uk/conference/bera-conference-2021) where initial findings can be disseminated and the network impact interest developed.
12. The Team has an opportunity to present at the biannual academic conference, 'Education Formation and the Church', organised by the Theological University Apeldoorn and the Theological University Kampen. This is expected to reach a number of Christian universities involved in teacher education in NW Europe as well as the main teacher education audiences for the UK.
13. The landing page of the new section of the nicer.org.uk website for the project has been developed and will be updated as outputs and impact materials are produced (www.nicer.org.uk).
14. The nicer.org.uk website for the project continues to be developed and now includes a 'Meet The Team' page (www.nicer.org.uk/about-us/people).
15. A wide-ranging literature review has been carried out addressing a number of themes within the field including the relationship between religion and science.
16. Extensive resource guides were created to support both primary and secondary teachers wanting to find out more about science and religion. These included links to classroom resources and planning ideas, but also to academic texts and key textbooks in the area. These were made available to participants on completion of the online survey.

WHERE TO NEXT?

The project will produce detailed reports and recommendations for teacher education providers designed to enrich their programmes, a set of academic publications written to complement academic knowledge and a network impact engagement strategy designed to use the findings to influence practice more systemically.

These outputs and influences aim to shape the research conversation to ground it more closely to teacher experience and change aspects of teacher education programmes to improve how new teachers are prepared for the science/religion encounter in the classroom.

For further information please email nicer@canterbury.ac.uk or visit the website - www.nicer.org.uk



NICER SURVEY

This online survey is designed to explore beginning teachers' experiences of and attitudes towards "Science/Religion Encounters". A "Science/Religion Encounter" is when something to do with science comes up in a RE lesson or something to do with religion or ethics comes up in a science lesson. This might be something planned or entirely unplanned.

The survey is open to everyone but is particularly aimed at teachers in their early career, and student teachers, including primary, secondary science and secondary RE. It is really important to find out if, and how, this important area is being approached in school classrooms - both primary and secondary.

The survey is part of a larger research project funded by the Templeton World Charity Foundation and led by researchers at Canterbury Christ Church University. The results of the research will be disseminated in a general report which will be available at nicer.org.uk. For further information related to this survey or the wider research please contact nicer@canterbury.ac.uk