

## Review of Self-Evaluations of Centres for Excellence in Education: MatRIC

This review examines the self-evaluation report of MatRIC, which was awarded a NOKUT Centre for Excellence in Education in 2014 and is currently one of three Centres participating in an interim evaluation of their work. The review is written by the expert panel who are conducting the review, which consists of the following members:

- Professor Paul Ashwin, Lancaster University (United Kingdom), Chair
- Professor Celia Duffy, Royal Conservatoire of Scotland (United Kingdom)
- Professor Andreas Eichler, University of Kassel (Germany)
- Professor Stephanie Marshall, Higher Education Academy (United Kingdom)
- Professor Peter Maassen, University of Oslo (Norway)
- Professor Richard Reece, University of Manchester (United Kingdom)
- Trine Oftedal, Norwegian Union of students (NSO, Norway), Student

The purpose of this review is to identify key questions that the expert panel wish to explore during the site visit and within the interim evaluation as a whole. Thus the questioning focus of the review should not be understood as being critical of the work of the Centre or its self-evaluation. It is rather a starting point for better understanding the work of the Centre and helping it to further develop its aims and practices in the future. This is central to the overall intention of the interim evaluation which is to help the Centres to identify ways of enhancing their work and developing effective action plans for the next round of funding.

Section 1 discusses MatRIC's self-evaluation document and outlines:

- a) overall comments on the self-evaluation document;
- b) key questions for the interim evaluation of the Centre;
- c) particular people and activities that the expert panel would like meet or observe during the site visit;
- d) any additional information that the expert panel requires before the site visit.

Section 2 outlines cross-cutting themes from the self-evaluation reports of all three of the Centres for Excellence that are currently being reviewed.

## 1. MatRIC

### a) Overall comments

Overall the self-evaluation includes a large amount of interesting and, to some extent, detailed information about the recent work and future plans of the Centre. However, whilst there are various references throughout the self-evaluation to MatRIC's goals, there is neither a presentation of the goals that currently drive the Centre's activities nor a structured discussion about what goals have been achieved. It would be helpful to get a clearer understanding of the set of goals underlying the Centre's activities, the extent to which these goals have been achieved, and the prospects for meeting further goals during the remainder of the Centre's first period.

The self-evaluation report emphasises the importance of a research and development-based education. However, the way in which MatRIC brings together research and teaching in mathematics higher education (i.e. how it relates mathematics research, research on mathematics education, and mathematics education in HE) was less clear. In particular it would be helpful to have a clearer sense of the way in which a research and development cycle underpins the work of the Centre. This would provide a sense of how the Centre's approach to education is influenced by existing research, how its activities are evaluated on the basis of evidence, and how practices are improved based on the outcomes of this evaluation. It would also be helpful to know more about the focus and operation of this approach, if it is adopted by MatRIC, or, if not, to understand the reasons for such an approach not being adopted. Finally, it would be helpful to get a better understanding of the nature of the involvement of students in the Centre's activities.

The self-evaluation report gives an indication of the way the Centre approached dissemination in relation to a number of innovations. However, the overall approach taken to dissemination within the Centre is less clear. It would be helpful to have a greater sense of how the Centre systematically shares its practices with other institutions; how it sees the relations between sharing practices locally, nationally and internationally; and how it expects its resources such as videos to be used by other institutions and practitioners. It would also be helpful to have a sense of how the Centre supports and

stimulates educational enhancement at its own host institution as well as the Centre's approach to developing and supporting the use of innovative practices in large scale lectures.

In the self-evaluation report the position of teacher education is somewhat ambiguous. The Centre has a network focused on teacher education and provides resources to support teacher education. However, there is limited information provided about this network. It would be helpful to have a clear sense of how the Centre systematically meets its overall aims with respect to teacher education.

The self-evaluation report discusses some aspects of the long term sustainability of the Centre, for example an ongoing learning support centre for students at UiA. However, it is less clear how the institutionalised collaboration focused on university mathematics teaching and the ways of supporting student learning will be supported in the long term in a sustainable and effective manner. It would also be helpful to have a sense of how the Centre understands the nature of sustainability: will this be achieved through collaboration between teachers, changes to the content of the mathematics syllabus, additional mathematics support through learning centres, from some combination of these, or by an alternative means? Whilst we recognise the difficulty of providing detailed plans at this stage, it would be helpful to have a sense of how it will operationalise its aims in the next funding period and the overall approach that the Centre will take to its sustainability in the long term.

#### **b) Key questions for the review**

1. What is the Centre's approach to research and development-based education?
2. Is the Centre's approach informed by a particular view of the research and development cycle and, if so, how does this underpin its work?
3. What is the Centre's overall approach to disseminating its innovations and the outcomes of its activities?
4. How does this overall approach to dissemination bring together dissemination at a local, national and international level?
5. How does the Centre systematically meet its overall aims with respect to teacher education?

6. What approach does the Centre take to operationalising and ensuring its sustainability in the long term?

### c) Activities for the site visit

During the site visit, it would be helpful to meet both teachers and students who have participated in the Drop-In Centre, someone involved in the conceptual development of MatRIC-TV and students who have used it, as well as a teacher educator and preservice teachers.

### d) Requests for additional information to be provided before the site visit

It would be helpful to have a list of (international) publications that outline the Centre's design of teaching innovations and research that has been undertaken into these teaching innovations. It would be helpful to have an overview of how many students have been involved, to date, in MatRIC's activities and an indication of their backgrounds. In addition, it would be helpful to get a more detail description of the cooperation with the other SFUs (bioCEED and Engage) that is outlined in the report.

The document "Additional information from the Centres" is a requested overall information sent to all the centres.

## *2. Cross-cutting themes*

Seven cross-cutting themes have been identified across the three self-evaluation reports of bioCEED, CEMPE and MatRIC. In outlining the challenges represented by these themes, it is important to be clear that they are challenges that cannot simply be addressed but are rather issues that Centres need to come back to in an ongoing and iterative manner. It is also important to be clear that engaging meaningfully with these challenges will be central to meeting the overall aims of the SFU initiative. The themes are:

1. The Centres would benefit from having more systematic accounts of their particular approaches to research and development-based education, so that there is clear evidence of a shift from the rhetoric of research and development-based education towards the development of explicit strategies and embodied practices that support research and development-based education.

2. The Centres need support to develop better evidence of their impact on their areas of specialism and how this relates to the size and shape of the sector as a whole, in terms of the number of students, academic staff and practitioners engaged in their area nationally and internationally.
3. The Centres would benefit from developing a clearer agenda for how they involve students in their research and development practices and how students benefit from their engagement with the work of the Centres.
4. The Centres would benefit from developing a clearer vision of, and rationale for, their engagement in interdisciplinary practices and how they define interdisciplinarity from the perspective of their specialist areas.
5. The Centres would benefit from developing more systematic approaches to dissemination and impact, which have a clear sense of how this approach develops synergies in their work locally, nationally and internationally.
6. The Centres need support to specify what they mean by 'cultural change' across their areas of specialism and how to develop criteria to judge their relative success in achieving this.
7. The Centres would benefit from developing more detailed strategies for how they will ensure the long term sustainability of their work.