Why CAIeRO?

Perceptions and impact of ten years of CAIeRO at the University of Northampton

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Background to CAIeRO

The CAIeRO process was developed from the Carpe Diem course design model, and was adapted and improved to suit the requirements of the University of Northampton (Usher, MacNeill and Creanor, 2018). Carpe Diem started in 2002 at Caledonian Business School, Glasgow Caledonian University, was refined at the University of Bournemouth and Anglia Ruskin University (Armellini and Jones, 2008; Salmon, Jones and Armellini, 2008), and then further developed at the University of Leicester (UoL, 2011). Supporting material for the implementation of both CAIeRO and Carpe Diem is freely available under the terms of a Creative Commons licence (UoL, 2011; UoN, 2017), and is in use at a number of universities around the world. After reviewing various different course redesign processes, CAIeRO was chosen by the University of Edinburgh as the basis from which to develop their ELDeR (Edinburgh Learning Design Roadmap) process (Hale, 2016; UoE, 2016).

CAIeRO is a team approach to course design. The overall purpose of the CAIeRO process is to provide a facilitated environment in which a course team are supported to design and implement a constructively aligned module that has a focus on active, participative and collaborative learning.

The definitive guide to CAIeRO is Usher’s Demystifying the CAIeRO (2014), which explains both the process and the pedagogical principles underpinning it. In essence CAIeRO is a structured, face-to-face workshop through which a course team, over a period of two days, deconstructs, (re)designs and (re)creates a module or programme, either from scratch or from an existing module or programme. The process involves a variety of participants, including the teaching team, learning designers, learning technologists, academic librarians, students, and external stakeholders, such as employers. CAIeRO is always facilitated by a trained facilitator who is external to the teaching team.

The broad steps of the CAIeRO process are as follows:

Pre-CAIeRO Meeting
- Agreeing aims of the CAIeRO and deciding who needs to be there.

CAIeRO Workshop Day 1
- Stage 1: Blueprint – Mission statement, look and feel, constructive alignment and backwards design.
- Stage 2: Storyboard – Creating a visual representation of the course.

CAIeRO Workshop Day 2
- Stages 3 to 5: Building the course – creating learning activities (often referred to as prototyping), reality checking; reviewing and adjusting.
- Stages 6 and 7: Next steps - action planning, identifying training and support requirements, reflecting on CAIeRO.

CAIeRO Follow-up
- Reviewing action plan and progress towards goals.

About this report

The purpose of this report is to provide an evidence-based critical reflection on CAIeRO (Creating Aligned Interactive educational Resource Opportunities), a structured workshop used for programme and module design and redesign at the University of Northampton. CAIeRO is a two-day workshop attended by the module teaching team and run by a trained, independent facilitator. A CAIeRO may also involve students, external examiners, critical friends and other stakeholders, such as employers.

The University of Northampton has been running CAIeROs for approximately ten years. In response to an institutional initiative to introduce active blended learning across all programmes, the University has significantly increased both the capacity to deliver CAIeROs and the number of CAIeROs delivered since 2014. CAIeRO supports our institutional curriculum change project, which has been informed by increasing evidence (e.g., Freeman et al., 2014) that active learning is more effective than lecturing in fostering learning amongst undergraduates.

The literature review below provides evidence that structured design workshops such as Carpe Diem, on which CAIeRO was originally based, can be of great value in assisting course teams to (re)design their university programmes and modules. This evidence has been anecdotally reinforced by high levels of attendance and demand for CAIeRO workshops at the University of Northampton, and suggests that many teams are using the process, often repeatedly, to enable programme and module design work. However, much of the supporting literature for Carpe Diem is now over five years old, and much of the evidence from CAIeRO facilitators and participants, while positive, is still anecdotal. It is therefore both appropriate and timely to formally evaluate the use of the CAIeRO process in supporting the design of active, blended curricula at Northampton.

"The University of Northampton-based CAIeRO framework (which is CC-NC-SA licensed) was chosen by academics and support staff as the best fit. The focus on designing of learning experiences over development of content; the structured format of the two day workshop, with ability to adapt based on each course design team, providing consistency and flexibility; and the ability to use CAIeRO for an campus and online development, programme development, and different levels of courses (UG and FG, for example) were the key reasons for CAIeRO being selected. In line with the findings of Mor and Craft (2012, the CAIeRO framework expertly combines the following domains – subject knowledge, pedagogical theory, technological know-how and practical experience - while also allowing for innovation in all of these domains” (UoE, 2017).

Literature review

The CAIeRO process is contextualised, outlined and explained in detail by Usher (2014) and Usher, MacNeill and Creanor (2018), but to date it has only been evaluated once, by Fitzgerald (2016). However, as CAIeRO is derived from Carpe Diem, some insights from the literature about Carpe Diem are worth considering alongside Fitzgerald’s findings about CAIeRO. Regarding Carpe Diem, the key sources of information that have been reviewed here are: Armellini and Jones (2008); Salmon, Jones and Armellini (2008); Armellini, Salmon and Hawkridge (2009); Armellini and Aiyegbayo (2010); Salmon and Wright (2014). Additional sources of information about Carpe Diem can be found in Salmon (n.d.); Salmon (2011, pp.88 and 126); Salmon (2013, pp.186-203).

Fitzgerald’s evaluation of “digital divides, digital literacy and the impact of the Carpe Diem (CAIeRO) process” (Fitzgerald, 2016, p.73) includes a substantial discussion about the experiences of twenty-three CAIeRO participants (Fitzgerald, 2016, pp.108-130). Fitzgerald finds that CAIeRO is perceived as a positive intervention by those who take part in it, but records that some participants are less supportive of CAIeRO during and immediately after the process, especially the first time that they engage with it (ibid. p.109). This negativity sometimes occurs because participants have been required to attend, and do not see the value in doing so (ibid. p.112), and sometimes because the process is perceived as being too critical (ibid. p.110). Where CAIeRO participants have a strong sense of ownership of their courses, the redesign aspect of the CAIeRO can make them feel as if they are being criticised for what they have done previously, which can lead to feelings of demoralisation (ibid. p.109). Nevertheless, Fitzgerald does make it clear that participants normally overcome these negative feelings and, on reflection, find the CAIeRO experience to be “powerful and ultimately positive” (ibid. p.115). However this can be frustrated later by university quality processes which may not necessarily be sympathetic to the innovative and creative designs that can be produced during a CAIeRO (ibid. pp.119-120). Preparation, in terms of managing participants’ expectations of what can be achieved in, and what to expect during and after the CAIeRO, is key to the success of the process (ibid. pp.112-116).

For many of Fitzgerald’s participants, CAIeRO was positively impactful in a number of ways. For example, it allowed participants the time and space to experiment and to try new out new teaching and learning ideas (ibid. p.121).
It also raised awareness of the practical issues of constructive alignment (ibid.), and allowed staff to break out of the cycle of teaching the same courses with the same materials (ibid. pp. 121-122). The most positive theme that emerged from Fitzgerald’s study was the collaborative nature of CAiERO (ibid. pp.123-127). While it could be argued that the positive experiences of collaboration would be evident in any situation where staff were encouraged to work together, Fitzgerald highlights the key role that CAiERO plays in making the most of the opportunities for collaboration, noting that “The challenges that are presented by the facilitator to the process enhance the experience of the group” (ibid. p.124). In respect of the collaborative aspect of CAiERO, also noted by Fitzgerald is the requirement for high quality facilitation, with facilitators needing to be both strong and flexible as the demands of the process require (ibid. p.126). As she explains, “It is a widely held view that the facilitator is the key driver to ensure that the process is a success” (ibid. p.127). Ultimately, Fitzgerald concludes that:

“It is almost certain that there is a long lasting effect on those who engage with the CAiERO framework as it nudges participants into reflection on their practice and consideration of the student experience” (Fitzgerald, 2016, p.127).

Fitzgerald’s findings are generally highly consistent with the literature about Carpe Diem, and with our own findings about CAiERO.

The existing Carpe Diem literature establishes it as a successful, collaborative course design workshop where success is primarily defined as having the ability to change participants’ learning designs, from being static, transmissive and content-centred, to being participative, engaging and learner-centred. All of the papers explain that Carpe Diem is a team-based approach to course design. They state that it is considerably more in-depth and immersive than a standard staff development workshop, and portray it as an academic and pedagogically transformative process with a largely transmissive view of learning, e.g., using the “VLE as a repository of materials ... [and using] discussion boards for administrative issues” (ibid. p.22). Following on from the transmissive approach to learning is the interactive, single loop design, which Armellini and Jones characterise as comprising tasks “designed to encourage students to post a single reply” (ibid. p.23). The third approach is collaborative, and is “characterised by an understanding that collaboration between learners and tutors as well as among students ... is central to learning” (ibid. p.24).

As a result of the Carpe Diem workshops they note that “all [course teams who participated] showed signs of change towards the collaborative category” (ibid. p.25). Salmon, Jones and Armellini (2008, p.107) similarly claim that the Carpe Diem process has “resulted in documented examples of improved course design and implementation.” The ability of Carpe Diem to effectively support pedagogical change from static, content-centred designs to active, learner-centred ones is also observed by Armellini and Ayegbayo (2010, p.933) who note that all “participating course teams made significant changes in the ways in which they design for student learning ... [shifting] from designs based on content repositories to task-based, learner-centred approaches.” In all five papers reviewed, e-tivities are referenced as being an important design tool used in the Carpe Diem process (Armellini and Jones, 2008, p.19; Salmon, Jones and Armellini, 2008, p.98; Armellini, Salmon and Hawkridge, 2009, passim; Armellini and Ayegbayo, 2010, passim; Salmon and Wright, 2013, p.54). The value of the e-tivity is the way it helps to shift online practices away from being content-centred to being task-centred. Salmon, Jones and Armellini (2008, p.103) note that “learning to design e-tivities proved to be a catalyst for shifting participants’ understanding of pedagogy.”

Finally, all five papers noted the importance of the collaborative nature of Carpe Diem, adding that as well as the academic course team, the process involved learning technologists and academic librarians as well as a skilled facilitator (Armellini and Jones, 2008, p.19; Salmon, Jones and Armellini, 2008, p.100; Armellini, Salmon and Hawkridge, 2009, p.138; Armellini and Ayegbayo, 2010, p.924; Salmon and Wright, p.55).

Overall, the existing literature on the subject of Carpe Diem and CAiERO establishes that the process:

- goes considerably beyond what is generally considered staff development;
- is pedagogically focused, not tool focused;
- is collaborative;
- is concerned with the development of activities and tasks for the learner to do, rather than with the development of static content;
- is transformative for participants;
- generates useful and usable practical outputs;
- requires a skilled facilitator to get the most from the process.

In order to properly evaluate the extent to which CAiERO is (or is not) a worthwhile process, we needed to discuss it with participants who had had a chance to reflect on the process, and to give them the chance to discuss it with someone other than their CAiERO facilitator. Therefore the staff that we asked to be involved in our evaluation were people who had had at least a year to reflect on their CAiERO, and had had an opportunity to try and put some of the plans drawn up in the CAiERO into practice. We invited all staff who fitted this criteria (a total of 237 people) to take part in this evaluation of CAiERO, and twenty-two staff took up the opportunity.

We used Q Methodology (Watts and Stenner, 2012; McKeown and Thomas, 1988) as our research method. In Q Methodology participants are asked to agree or disagree with a series of statements about the subject in question. They place cards with the statements on upon a grid, the choice of placement location on the grid indicating the extent to which they agree or disagree with each of the statements. The participants’ responses are then quantitatively analysed, and those participants with similar response patterns are grouped together. Groups of people with similar responses (i.e. similar feelings, beliefs and attitudes on the subject) comprise a perspective. Thus the term ‘perspective’ used in the discussion below refers to a specific group of people with a shared outlook on CAiERO. In this study our participants were grouped into four perspectives (i.e., four different outlooks on CAiERO were identified). Perspective one was shared by seven participants, perspectives two and three by four participants each, and perspective four by one participant. Four participants did not share any of the perspectives, and two shared multiple perspectives: thus, as required by the methodology, these six responses were not used. In addition to the quantitative responses, qualitative comments were also gathered from each of the participants, as was information about their teaching experience and role within the university. Included in the appendices is more information relating to the research method and findings. This includes the Q sort grid design, the Q sort statements, factor array for statements and perspectives, and distinguishing statements for each perspective.
Perspective 1: CALEnRO as an opportunity for reflection on teaching and experimentation with teaching and learning activities

The participants who shared this perspective were usually highly experienced (over 12 years’ teaching experience). They reported choosing to undertake a CALEnRO rather than being required to attend, and having a strong sense of ownership of what was produced. Although this perspective recognises the development of transferable skills through CALEnRO, the views expressed indicate that everyone experienced staff have a preference for continuing with facilitated collaborative sessions. This suggests that staff may opt to take part in CALEnROs even when they have learned the skills of good course design through attendance at previous CALEnROs, because what they value about CALEnRO cannot be easily replicated outside of the CALEnRO process.

Supporting participants who share this perspective have specific implications for the facilitation of such sessions, and also for the scalability of the model, as it calls into question the idea that once they have attended a number of CALEnROs, staff will no longer want or need CALEnROs to assist them with course (re)design.

Perspective 2: CALEnRO as an opportunity for social learning and to build and strengthen relationships

Perspective 2 was shared by four participants, all of whom placed value on the collaborative aspects of CALEnRO. Although participants also valued opportunities for reflection, for example that the workshop “reminded me to start from the student” and “allowed me to consider and reflect on the ways students learn”, many of the strongest opinions here relate to the presence, absence or role of other people in the CALEnRO. The perspective is characterised by placing a high value on the input of colleagues and the support of professional services staff, and less value on the issues of ownership and control of what was produced in the CALEnRO.

Perspective 3: CALEnRO as an opportunity to protect time for a structured and holistic design process

Participants viewing CALEnRO from perspective three shared some of the views expressed by the other perspectives, around the importance of constructive alignment and collaboration, but prioritised more procedural elements. Four participants shared this perspective, which viewed supporting constructive alignment as the most valuable element of CALEnRO, but also placed a high value on storytelling. All the participants who shared this perspective were reflecting on a CALEnRO that included designing new programmes or modules, rather than redesign, and this may explain why this perspective expressed more strongly than any of the other perspectives that CALEnRO was an efficient use of time. In addition, they felt that CALEnRO did not generate a lot of additional work necessary to implement the changes.

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Perspective 4: People who don’t see the value of CAIeRO and who object to being forced to engage

The participant viewing CAIeRO from perspective four felt that CAIeRO took up valuable time to complete a job that they could have done more quickly on their own. Although only one person viewed CAIeRO from this perspective, their response was nonetheless statistically significant in terms of the research methodology and there are lessons to be learned from it. The person who saw CAIeRO from this perspective engaged in CAIeRO because they were told that they had to and felt the process was not an efficient use of time, because they “already know how to design courses”. While this is undoubtedly also true of some of the other participants, in this case it is possible that perceiving the CAIeRO as externally enforced may have led them to say that CAIeRO has not encouraged them to reflect on their teaching, that it has not helped them to think about student-centred learning, and that they would not recommend CAIeRO to others.

"People were frustrated from being there [at the CAIeRO], because they didn’t want to be there, they don’t have the time to be there, there are a thousand other things that are coming in while they were there, so it’s not seen as a good use of time.”

This view contrasts sharply with the sense of ownership and buy-in reported in the previous perspectives, suggesting that this may be one of the primary factors that determines the success of a CAIeRO workshop. It also links closely with the comments about protected time discussed in the third perspective, emphasising that unless participants are willing and able to set aside time for the process, the CAIeRO will not be effective. For this perspective, to make CAIeRO successful you have to have the right people in the room, for the right reasons, and crucially, that time has to be used well.

"I think having those people in the same room at the same time is incredibly valuable. Personally, the format of the CAIeRO event didn’t allow me to get the best value out of that time with those people. Having face-time with all those people was brilliant, I could’ve used it so much better.”

This last point indicates that a CAIeRO can fail, not only if a course team does not have shared goals, but also if the valuable time set aside on the day is not used specifically to address those goals. This highlights the importance of the pre-CAIeRO meeting not only for addressing participant expectations, but also in setting goals, which should be negotiated between the facilitator and the academic(s) responsible for the module or programme being (re)designed. This leads us to the importance of good facilitation, as noted by Armellini and Aiyegbayo (2010, p.925) and Fitzgerald (2016, pp.126-127).

Facilitation

All perspectives had insights into the requirements for effective facilitation of CAIeRO workshops. They all agreed that the facilitator should have some learning and teaching expertise, but that they should not be an expert in the subject of the module or programme being designed. The latter aspect was particularly important for people sharing the second perspective, suggesting that this would have significant implications for consensus building.

"I don’t think it’s something where you can just take someone and say, “Oh, do you fancy being a facilitator for a CAIeRO?” I think they need to be embedded in teaching and learning ... They have to have teaching and learning kind of coming from their core, otherwise I don’t think it’d work. I think you’d see through them.”

It is also notable that all of the first three perspectives disagreed to some extent with the statement “I want to be able to do CAIeRO a bit at a time, rather than doing all the stages in one go.” While it may be tempting to make concessions to people’s schedules in order to enable module and programme design work, those with experience of the process are clear that there is more benefit in making time to complete the whole process at once, particularly when designing from scratch.

The first three perspectives also agreed on the mode of delivery, reporting strong opposition to the idea that some of it could be carried out online rather than face-to-face. This suggests that the online approach that has been trialled for Carpe Diem at other institutions (Salmon et al. 2015) may not be widely applicable.

"I thought that while [CAIeRO] might reveal some useful ideas, it was going to take up two days unnecessarily. Having completed the process, I became a convert.”

None of the perspectives found it easy to take the time to engage with CAIeRO, and all reported that it was difficult to get all the staff who needed to be in the CAIeRO to participate. But despite these challenges, there was a broad disagreement with the idea that CAIeRO might be better if completed piecemeal, and very strong opposition to the idea that some of it could be carried out online rather than face-to-face.

The benefits and limitations of CAIeRO

Our research indicates that the CAIeRO process is useful for:
- developing transferable module or programme design skills and designing courses from a student-centred perspective;
- developing constructive alignment between learning outcomes, teaching and learning, and assessments;
- creating a coherent visual overview of the student journey (storyboarding);
- collaborating with and learning from colleagues, including those outside of the module/programme team;
- blocking out dedicated time to engage with programme/module design that staff might not have otherwise found.

The CAIeRO provided an opportunity to focus on learning and teaching practice rather than subject content. It reminded me to start from the student.”

The limitations of CAIeRO are that:
- CAIeRO was not considered to be directly transformative in terms of teaching practice (although there was strong agreement that it supported reflection on practice, there was low agreement that it had “changed the way I teach”);
- It was not seen to directly increase effective use of technology in teaching;
- It was not easy to take the time to participate in CAIeRO, or to ensure all the necessary staff were there.

"I think the learning outcomes are the bits that are easy to achieve with teams. The changing of teaching is the harder bit to achieve.”

The fact that CAIeRO was not perceived by participants to change their teaching practice or to increase their use of learning technologies is, on the whole, not surprising. The use of learning technologies is now ubiquitous, and, for this reason, CAIeRO has moved away from its earlier emphasis on developing participants’ use of technology to support learning, to developing participants’ skills in designing modules for active blended learning. Furthermore, CAIeRO is not an obvious teacher training workshop, rather its focus is on module and programme design. Nevertheless, because modules that have been through CAIeRO tend to be more active and student-centred than they were before, there is a strong possibility that they do change teaching practices over time, but because..."
this process happens slowly and sometime later, CAIeRO is less likely to be seen as one of the causes of this change in teaching practice. And while it is noted that CAIeRO is not obviously a teacher training workshop, it is our contention that most CAIeROs across the four perspectives are:

- CAIeRO encouraged me to reflect on and re-examine the way that I teach;
- CAIeRO has helped me to think about teaching in terms of the activities students do in order to learn, rather than in terms of the content I should deliver;
- CAIeRO helped me to align my learning outcomes with my teaching activities and my assessments.

While there is broad consensus about its value, the research also identified conditions and limitations. The strong emphasis placed by participants on the value of the collaborative aspects of CAIeRO suggests that it needs to be facilitated in a face-to-face environment, and also suggests that this process has value as a development opportunity for all teaching staff, not just those leading the modules being designed. Also, while some participants are already using their learning design skills in contexts outside CAIeRO, even experienced staff maintain a preference for coming together with others, as well as having an objective facilitator on hand to support the design process. This has implications for the scalability and sustainability of the process; because CAIeRO participants value the external facilitation and the collaboration with colleagues, some are likely to want to use CAIeRO each time they (re)design their programmes and modules. This is one aspect of what Armellini and Ayegbayo (2010, p.924), Salmon and Wright (2014, p.55) and Salmon, Jones and Armellini (2008, p.100) meant when they referred to Carpe Diem as being unlike traditional staff development processes. Whereas traditional staff development workshops are aimed at developing a specific set of skills and enabling staff to complete a specified task without support, CAIeRO is a workshop that many staff will want to come back to time and again.

There is also clear value in giving institutional support for staff to take time out of their schedule to undertake CAIeROs, particularly, but not exclusively, for the design of new modules and programmes. In terms of facilitation, the evidence supports the idea that facilitators should not deliver CAIeROs in their own subject area, and also that strong and flexible facilitation, properly negotiated goals, along with adjustment and tailoring of the workshop itself, is vital to the success or failure of CAIeRO.

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Very special thanks are due to Rosni Khatri for her continuing support and mentoring in the use of Q methodology.

Research ethics

Ethical approval for this project was granted by the Library and Learning Services Research Ethics Committee at the University of Northampton.
I was able to get all of the academic staff who needed to be at the CAIeRO to implement the changes I had planned in the session. I had enough time after the CAIeRO to implement the changes I had made. During CAIeRO, I understood why it needed so much time to do all the stages properly.

After doing the CAIeRO, I understood why it needed so much time to do all the stages properly. Booking a CAIeRO allowed me to block out dedicated time for course/module design, that I would otherwise have struggled to find.

Implementing the plans I had made in the CAIeRO was more difficult than I had expected. My CAIeRO was not an efficient use of time, I could have done what we did in the CAIeRO in less time on my own.

The CAIeRO provided me with opportunities to try out new things with technology. The CAIeRO facilitator needs to have a good knowledge of teaching and learning. The CAIeRO facilitator needs to be someone from outside the teaching team.

The CAIeRO facilitator needs to be a specialist in my subject. Students were positive about the changes made to the course/module design. CAIeRO encouraged me to reflect on and re-examine the way that I teach.

The CAIeRO helped me to align my learning outcomes with my teaching activities and my assessments. CAlERO generated a lot of additional work for me to refine and implement the changes I had planned in the session.

I had enough help after the CAIeRO to implement the changes I wanted to make. I didn't feel I had enough ownership and control over what I produced during CAIeRO.

I engaged in CAIeRO because I needed to improve my module in response to the views of students and/or other stakeholders. My line manager was supportive of my taking part in CAIeRO.

I engaged in CAIeRO because I had a course/module (re)validation requirement for validation/approval at the University. The course/module design I produced in the CAIeRO benefited from the collaborative input of colleagues.

Implementing the plans I had made in the CAIeRO was more difficult than I had expected. Implementing the plans I had made in the CAIeRO was more difficult than I had expected.

In a CAIeRO, it's important to keep moving and complete all the stages, rather than spending too much time on one part of the design. In a CAIeRO, it's important to keep moving and complete all the stages, rather than spending too much time on one part of the design.

Students' views strongly influenced the design produced in the CAIeRO. I had enough ownership and control over what I produced during CAIeRO.
Appendix 3:
Distinguishing statements for perspective 1.

<table>
<thead>
<tr>
<th>No.</th>
<th>+/-</th>
<th>Statement</th>
<th>Perspective 1</th>
<th>Perspective 2</th>
<th>Perspective 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>+</td>
<td>CAIeRO encouraged me to reflect on and re-examine the way I teach.</td>
<td>5*</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>36</td>
<td>+</td>
<td>I would recommend CAIeRO to others.</td>
<td>4*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>+</td>
<td>CAIeRO provided me with opportunities to try out new things with technology.</td>
<td>2*</td>
<td>-4</td>
<td>-1</td>
</tr>
<tr>
<td>2</td>
<td>+</td>
<td>As a result of the CAIeRO, I have changed the way I teach.</td>
<td>1</td>
<td>-1</td>
<td>0</td>
</tr>
<tr>
<td>29</td>
<td>+</td>
<td>The course/module design I produced in the CAIeRO benefited from the collaborative input of colleagues.</td>
<td>1*</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>+</td>
<td>The CAIeRO facility needs to be someone from outside the teaching team.</td>
<td>0</td>
<td>-1</td>
<td>-2</td>
</tr>
<tr>
<td>31</td>
<td>+</td>
<td>I think my CAIeRO would have been a better use of time if more preparatory work had been done before we got into the room.</td>
<td>0*</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>24</td>
<td>/</td>
<td>I engaged in CAIeRO because I had a course/module (re) validation coming up.</td>
<td>-1</td>
<td>2</td>
<td>-2</td>
</tr>
<tr>
<td>17</td>
<td>-</td>
<td>I engaged in CAIeRO because I was told to.</td>
<td>-3*</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>-</td>
<td>I engaged in CAIeRO because I was told to.</td>
<td>-5*</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Distinguishing statements for perspective 1 (P < .05 ; Asterisk (*) indicates significance at P < .01)
+/- refers to responses in pre-Q sort phase: + = agree; / = neutral; - = disagree.

Appendix 4:
Distinguishing statements for perspective 2.

<table>
<thead>
<tr>
<th>No.</th>
<th>+/-</th>
<th>Statement</th>
<th>Perspective 1</th>
<th>Perspective 2</th>
<th>Perspective 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>34</td>
<td>+</td>
<td>The CAIeRO facilitator needs to have a good knowledge of teaching and learning.</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>33</td>
<td>+</td>
<td>The CAIeRO facilitator needs to be flexible and responsive, and adapt the process rather than following it rigidly.</td>
<td>1</td>
<td>3*</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>+</td>
<td>I think my CAIeRO would have been a better use of time if more preparatory work had been done before we got into the room.</td>
<td>-1</td>
<td>2*</td>
<td>-2</td>
</tr>
<tr>
<td>11</td>
<td>+</td>
<td>Implementing the plans I had made in the CAIeRO was more difficult than I had expected.</td>
<td>-2</td>
<td>1*</td>
<td>-2</td>
</tr>
<tr>
<td>8</td>
<td>+</td>
<td>CAIeRO encouraged me to reflect on and re-examine the way I teach.</td>
<td>5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>/</td>
<td>The CAIeRO enabled me to make changes to my course/module that I otherwise would not have made.</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>/</td>
<td>My CAIeRO was not an efficient use of time, I could have done what we did in the CAIeRO in less time on my own.</td>
<td>-4</td>
<td>0*</td>
<td>-5</td>
</tr>
<tr>
<td>41</td>
<td>/</td>
<td>I didn't feel I had enough ownership and control over what I produced in the CAIeRO.</td>
<td>-3</td>
<td>0*</td>
<td>-2</td>
</tr>
</tbody>
</table>

Distinguishing statements for perspective 2 (P < .05 ; Asterisk (*) indicates significance at P < .01)
+/- refers to responses in pre-Q sort phase: + = agree; / = neutral; - = disagree.

Appendix 5:
Distinguishing statements for perspective 3.

<table>
<thead>
<tr>
<th>No.</th>
<th>+/-</th>
<th>Statement</th>
<th>Perspective 1</th>
<th>Perspective 2</th>
<th>Perspective 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>40</td>
<td>/</td>
<td>CAIeRO was ‘hands on’ and helped me to create things that were of practical benefit to my teaching.</td>
<td></td>
<td>3</td>
<td>-1*</td>
</tr>
<tr>
<td>12</td>
<td>/</td>
<td>To implement the plans developed during CAIeRO, I had to challenge the accepted practices and norms of my department/faculty.</td>
<td></td>
<td>0</td>
<td>-2*</td>
</tr>
<tr>
<td>38</td>
<td>-</td>
<td>Students’ views strongly influenced the design produced in the CAIeRO.</td>
<td>0</td>
<td>-3*</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>CAIeRO provided me with opportunities to try out new things with technology.</td>
<td>2</td>
<td>-4*</td>
<td>-1</td>
</tr>
<tr>
<td>28</td>
<td>-</td>
<td>I was able to get all of the academic staff who needed to be at the CAIeRO to participate.</td>
<td>-1</td>
<td>-4*</td>
<td>-1</td>
</tr>
<tr>
<td>32</td>
<td>-</td>
<td>The CAIeRO facilitator needs to be a specialist in my subject.</td>
<td>-2</td>
<td>-5*</td>
<td>-3</td>
</tr>
</tbody>
</table>

Distinguishing statements for perspective 3 (P < .05 ; Asterisk (*) indicates significance at P < .01)
+/- refers to responses in pre-Q sort phase: + = agree; / = neutral; - = disagree.