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EVALUATING STAKEHOLDER DESIGNED INTERDISCIPLINARY AND INTERSECTORAL DOCTORAL MODULES

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Abstract

Collaborative doctoral programmes assist the knowledge society in finding innovative ways to address sustainable development goals by asking creative questions and finding creative solutions. The aim of CHAMELEONS (Championing A Multi-Sectoral Education and Learning Experience to Open New Pathways for Doctoral Students, H2020-SwafS-2018-2020), is to develop interdisciplinary, inter-sectoral and international modules that broaden the skills of PhD graduates improving their employability in academic and non-academic environments. Through a co-design process 4 learning outcomes were developed which formed the foundation for 3 modules. Each module advanced the students' depth of knowledge and understanding. The 4 learning outcomes were as follows:

- Develop networking and communication skills;
- Understand user-centred design;
- Market research capacity and research skills; and
- Build an understanding of themselves and others.

Fifteen doctoral students from five European universities were recruited. This paper represents evaluation conducted on the first two modules which, due to COVID-19 restrictions, were delivered via Zoom. At the conclusion of each module the students were invited to complete a questionnaire consisting of sixteen questions, thirteen of which were on a five-point Likert Scale, and three of which were free text. The closed questions explored student perceptions of: programme objectives; programme delivery; opportunities to engage; satisfaction; and links between theory and practice. Students were asked to identify three aspects of the module which assisted their learning, three changes they would suggest to enhance their learning, and were offered the opportunity to provide additional comments.

Programme content: Students perceived that real-time assessment, reflective learning, engagement with course coordinators and the opportunity to engage with practical research tools (Photovoice, Ecosystem Mapping and Walk My ID) all enhanced their learning. They suggested more group activities, breakout groups (possibly themed), and real-life coffee breaks, to enable them to better network with their doctoral colleagues. There was a desire for more practical activities with some suggesting the development of career-pathway skills (Curriculum Vitae, Interviews).

Programme delivery: A theme that frequently appeared was the desire to have more physical face-to-face engagements in Module Three. The students understood the Covid-19 constraints but expressed a strong desire for meeting face-to-face. When given the opportunity to add freeform and unprompted comments, students almost without exception expressed their satisfaction with both modules, and their appreciation for them. Nevertheless, a number of participants reiterated their desire to undertake Module Three in person.

Programme outcomes: One student expressed an aspiration to be "more sure" of their skill set and marketability upon completion of Module Three complimenting the focus on practical learning in the programme content review.

Keywords: *Doctoral education, programme evaluation, stakeholder design, interdisciplinarity, intersectorality.*

1. Introduction

Chameleons is an EU H2020-SwafS Science with and for Society, Coordination and Support action (www.chameleonsproject.eu). The objective of this project is to develop new and innovative educational interventions to improve the learning experience offered by higher education with the intention of shaping more adaptable, entrepreneurial, and employable doctoral graduates, ready to meet

the challenges of the future1. Ten years from now, jobs will be more knowledge and skills-intensive than ever before2. Globalisation and technological advances indicate that there will be changes in sectoral structure and demand for new types of skills we are not even currently anticipating3.

The Chameleons project commenced in March 2020 just as the world was in the grip of a global pandemic and as Europe completely locked down. We saw the closure of all sectors of society including education. The original intention of Chameleons was to design and deliver three in-person modules for doctoral students in the field of Connected Health, from five educational institutions across Europe. However, the pandemic required Chameleons to move on-line. The modules were designed online through collaboration with stakeholders from industry, charitable organisations, recent doctoral graduates, academics, patients, educational technologists, and librarians.

Module 1 took place in April 2021, Module 2 in September 2021 and Module 3 in February 2022. As each module was completed the evaluation and feedback from the students informed the development of the next module. The iterative design process used in this project ensured that the module designs were informed by key stakeholders including those who had experienced the curriculum itself.

2. Methods

One week after each module was completed the students were invited to complete an anonymous questionnaire which consisted of sixteen questions. The questionnaire was hosted on Google forms. The questionnaire consisted of sixteen questions, comprising thirteen closed questions with a five-point scale Likert Scale, and three further open-ended questions. The use of the Likert Scale model for questions 1-13 aided in providing a quantitative evaluation of the module while the final three free text questions provided a qualitative insight into the participants' perceptions of the Chameleons modules.

Questions 1 and 2 asked students about the module objectives and whether they felt that they had achieved these objectives. Questions 3 to 5 related to the online context of module delivery and asked students whether they found the module to be inclusive and/or engaging both in terms of content and context. Question 6 asked students to reflect on whether they had benefitted from the module, with question 12 asking them to qualify this response. Question 7 asked for comment on whether the practical elements of the module had allowed them to link theory and practice. Question 8 and 9 enquired as to whether the assessment method had consolidated their learning and whether they saw this learning as relevant to their future career. Question 10 asked whether they would have enrolled in the module if they had had more prior information on its content, while question 11 asked how they now felt about enrolling having completed the module. Question 13 asked them if they intended to attend the next Chameleons module. Questions 14 and 15 were free text responses that asked students to identify three aspects of the module which assisted their learning and three changes they would suggest that would enhance their learning. Finally, question 16 offered students an opportunity to provide additional comments on the module in a free text format.

3. Findings

Fifteen doctoral students from across five European universities (University of Porto, Portugal; Oulu University, Finland; Aristotle University, Greece; Maynooth University Ireland; University College Dublin Ireland) were recruited to Chameleons. All students attended modules 1 and 2, both of which took place online over a one-week period in April 2021 and September 2021. The findings from the evaluation questionnaires for both modules are presented in the following sections.

Fourteen of the fifteen students responded with feedback from module 1 and 15 responded in relation to module 2. The students who participated in both modules perceived that the objectives were in the main clear/extremely clear (module 1 (M1) n=11, module 2 (M2) n=12) and the majority believed they had achieved these objectives. The students deemed that despite the modules being delivered remotely that they were inclusive/extremely inclusive (M1 n=10, M2 n=13) providing much opportunity for engagement (M1 n=11, M2 n=11). The majority believed they had benefitted from the use of breakout rooms (M1 11, M2 11), with many believing the practical elements of the modules assisted them in linking theory and practice (M1 n=12, M2 n=9).

3.1. Programme Content

Participants were asked what had most enhanced their learning. Students identified real time assessments and reflective learning as particularly helpful, as outlined by the following participant free text comments:

"Allocated time for working alone on the first day. Having 15-20 minutes to reflect on an exercise alone was really helpful in digesting what we learned." (Module 1, Respondent 12)

"Reflective learning was quite useful, because after a long day we were urged to remember what we learned and think of scenarios that it would be helpful, thus developing a stronger connection with the learning material." (Module 1, Respondent 13)

"Reflective diaries, self-assessment assignments, refresher quizzes." (Module 2, Respondent 3) were important components of learning.

The participants identified that they took inspiration from engagement with course coordinators and potential employers from academia and industry

"I think that the most valuable aspect was that we had the opportunity to freely chat with the speakers and ask them questions." (Module 1, Respondent 7)

"Opportunities to speak to people working in industry, with a blended academic/industry approach who spoke candidly" (Module 1, Respondent 3)

The opportunity to engage with practical tools such as the Photovoice research methodology was also highlighted as important:

"Photovoice- learning a practical skill that we can use personally or for our research." (Module 1, Respondent 12)

In relation to module 2, participants highlighted the opportunity to engage in practical activities as important, namely Walk My ID, this is illustrated as follows:

"Walking my ID activity allowed me to reflect on my personal motivations, worthwhile exercise

Checking in with the group again was a nice element for interaction and engagement with flow students during a time when interactions have been limited" (Module 2, Respondent 2).

3.2. Programme Delivery

There was a strong desire for more physical and face-to-face engagements. The participants acknowledged the complications of Covid-19 on having in-person sessions but expressed a strong interest in meeting face-to-face.

"I think mostly helpful for learning would be to get to meet everyone and collaborate face to face. Even though I think everything has worked well remotely." (Module 2, Respondent 11)

"Despite being held online, the module was interactive enough to facilitate the learning." (Module 2, Respondent 15)

"….. I would probably like is having more time for the breakout sessions because it would enable participants to be more engaged with each other. Notwithstanding that the level of engagement was fantastic, I felt that during the main sessions, we could not really engage with other participants. We could only use the chat box. I know that this is a problem related to the distance learning and the module organization was excellent. In a face-to-face module, engagement between participants would have been assured by the coffee breaks." (Module 1, Respondent 7)

A number of module participants indicated the need for more breaks in the timetable: "*A little more space in the timetable or bite sized learning. Regular breaks for zoom sessions I find are really helpful" (Module 1, Respondent 3). Echoing this sentiment, another* participant commented "*The overall schedule was too intense with very short breaks. I had expected to catch up on my own PhD work/emails in the morning and evening but* this wasn't always *possible as I was so exhausted from looking at the screen. I also did not expect that I would need to stay on Zoom longer in the evening for group work." (Module 1, Respondent 12)*

"Face to face for module 3 will be great, I think zoom fatigue very difficult to avoid towards the end of the week…." (Module 2, Respondent 2).

3.3. Programme Outcomes

One participant expressed an aspiration to be "more sure" of their skill set and marketability upon completion of Module Three, complimenting the focus on practical learning in the programme content review. They identified *"Building an understanding, research methods & design, marketing research capacity & skills" (Module 2, Respondent 11)* as important. This echoed a similar request in the review of the earlier Module 1 that suggested the need for *"more practical methodologies to build our career" (Module 1, Respondent 11).*

Another participant identified the need for *"more focus on how to communicate better my work, discuss the commercialization of research finding" (Module 2, Respondent 6).*

While another participant commented *"I used the module to take some concrete career planning steps, I am more active on linked in and twitter and arranged a site visit to a research centre and met some new contacts" (Module 2, Respondent 2)*

4. Discussion and Conclusions

Despite the need to pivot the delivery of Chameleons, from face to face to on-line, it is clear that the Chameleons doctoral students benefitted from engaging with the two modules already delivered. The iterative design process employed for these modules enabled the participant evaluation to inform the module design process swiftly and meaningfully. By default, the module designers also learned about online education delivery.

Participants valued the development of reflective skills (reflective writing, Walking my ID) and research methodologies (photovoice, ecosystem mapping). It is interesting to note that they highlighted the importance of 'protected' time within the module to develop these skills. Both modules were delivered over a five-day period with an intervening weekend. This proved to be important in order to give students an opportunity to reflect on their learning, to develop their skills (they undertook a photovoice project in module 1, and a Walking my ID project in module 2). However, the participants also stressed that engaging in online education is tiring and that regular breaks away from the screen are necessary.

It was clear that participants would have preferred a face-to-face engagement had the health situation permitted. The participants lost a number of elements of their education owing to the online environment. The 'hidden curriculum'5 which is not predetermined by educators is limited in the online context. Skills which are important for professional development such as networking, learning to make research links, disseminating your research, and socializing with peers were not available to the participants. The sense-making and sense-giving activities6 that take place in the informal spaces between the formal curriculum elements were more difficult to achieve in an online environment.

In relation to programme outcomes, this concept of enabling doctoral students to be "more sure" of their skill set and marketability was taken up in module 3. In order to build student confidence, while developing their skills, each student undertook 2 'mock' interviews. Each student was tasked with identifying three job opportunities. They were asked to apply, as part of the module task, for each of these jobs. The applications were submitted in advance of the module. The students were interviewed by a panel of 2 people who role played as interviewers for the companies/institutions represented in the job advertisements. The interviews were conducted in a close to authentic conditions as possible, mimicking a job interview. On completion of the interviewers the interviewers gave the student feedback. This task offered students the opportunity to market themselves to potential employers through a variety of communication channels. The feedback served to support them in this endeavour. This real-world experiential learning enabled them to apply what they had learned during the two modules.

The careful evaluation of module 1 and 2 guided the development of module 3. Developing student informed modules for doctoral students ensures that we are developing engaging education which meets the needs of the next generation of doctoral graduates.

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