

CONCEPT MAPPING-MEDIATED REFLECTION ON THE DESIGN OF A NEW M.A. PROGRAMME IN HIGHER EDUCATION

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Abstract. After spending a year working on the development of a new online Masters programme in Higher Education, members of the development team were interviewed to reveal their thoughts about the nature of the programme. The dialogue of each interview was summarized as a concept map. Analysis of the resulting maps included a modified Bernsteinian analysis of the focus of the concepts included in terms of their semantic gravity (i.e. closeness to context) and the degree of resonance with the underpinning regulative discourse of the programme. Data highlight a number of issues for programme delivery that centre around the use of appropriate language to manage student expectations in relation to the process of learning and the emotional responses this can stimulate, as well as the tensions that can be fore-grounded between the demands of teaching and research within a university environment.

Keywords: Curriculum Design, Pedagogy, Semantic Gravity, Emotion,

1 Introduction

In setting out to develop a new and innovative M.A. in Higher Education, the programme team (consisting of academic developers and e-learning technologists) spent almost a year discussing the principles that would underpin the programme before starting to consider any of the more instructional aspects of the programme such as learning outcomes, content or assessments. This was revised and discussed on a number of occasions with members of the team free to comment and suggest amendments at any stage along the way. Having then tacitly 'signed up' to the foundations of the programme, colleagues then started to construct individual teaching modules and to develop the paperwork required by the university for programme validation.

At this point, the programme leader decided to interview members of the core programme team, as well as colleagues from within the Faculties who were linked with the programme development and who would be involved in 'marketing' and 'explaining' the MA to potential participants – mostly academic teaching staff within the university. The aim of these interviews was to see how different colleagues may have internalized the nature of the programme in personal and idiosyncratic ways, and whether observed differences and similarities could be used to better inform team preparations for course delivery.

At the outset the team shared a commitment that all modules would not only be *underpinned* by, but also *prefaced* by an explicit pedagogic framework to draw out the integration of the theories and values upon which the programme is built (summarized in Figure 1). Within that framework, the integration of contemporary educational theory was used to emphasize the key concepts of:

Connectivity: in terms of connections between concepts, theory and practice, teaching and research, disciplinary methods, teachers and students. These connections will be made explicit through the application of knowledge visualization using concept mapping (Novak, 2010). This will be explained to programme participants in the non-credit bearing introduction to the programme so that participants are equipped to engage with the pedagogy of the programme as well as the content.

Transformation: in terms of the structure of knowledge and how learning in different contexts requires recognition of the significance of different knowledge structures and how they interrelate. This is informed by contemporary theories such as: threshold concepts, semantic gravity, student-as-producer, meaningful learning. These concepts are emphasized in the integrated depiction of the theoretical basis of the programme offered in Figure 1, showing that participants' perspectives can start and end with a focus on their own disciplinary expertise. This requires a deviation from the normal concept mapping grammar that only permits a concept to occur in a single node on the map to allow 'disciplinary expertise' to form a *central corridor* between the conceptual and experiential components of the framework, with 'structural transformation' forming the threshold concept that links the regions of low and high semantic gravity.

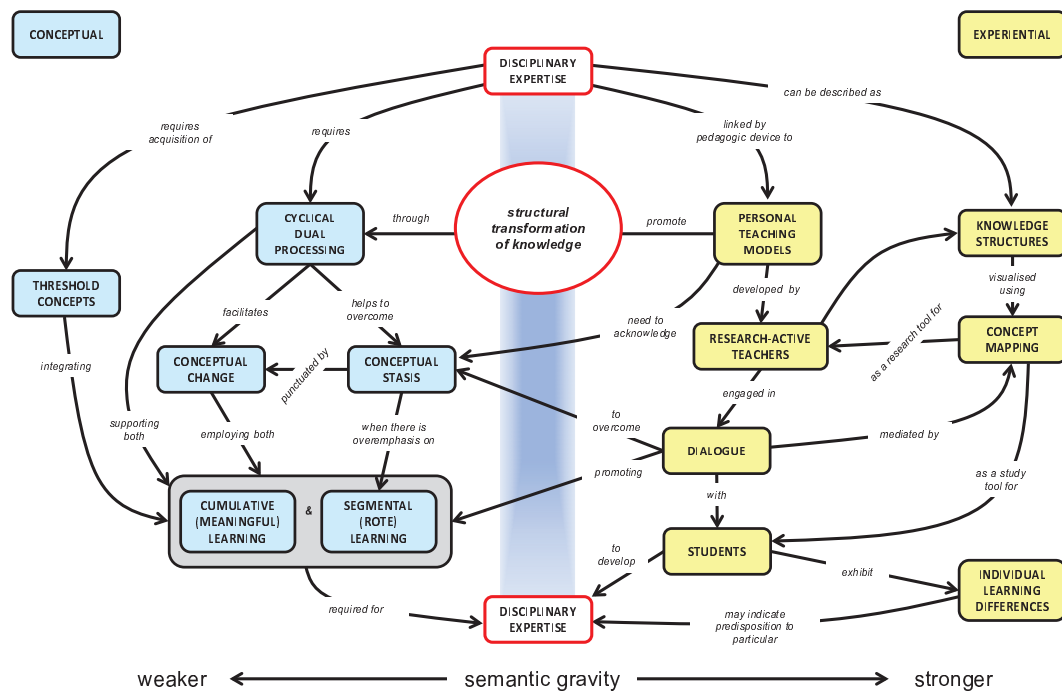


Figure 1: Pedagogic framework for the MA programme (redrawn from Kinchin, 2013).

2 Values underpinning the MA development

The online nature of the programme, and in particular its distance delivery mode, means that it is crucial to foreground the pedagogic framework within all the materials presented, as in the absence of extensive face-to-face contact with programme tutors, the participants need the programme structure to be explicit with the course materials. This framework will help to provide coherence across the diversity of content that will be offered. All modules will be guided in their construction by these pedagogic principles, which will also be used in programme evaluation.

2.1 Regulative Discourse underpinning development of the MA in Higher Education

Bernstein (2000) refers to curriculum in terms of its regulative discourse (RD) and instructional discourse (ID). The RD refers to the values that underpin the curriculum. ID refers to content selection, sequencing, pacing and assessment. Bernstein argues that the ID is *always* embedded in the RD, whether the RD is explicit or implicit. Our observations of other programmes suggested that programme teams often focused on the ID without paying explicit attention to the RD, as if the underpinning values were assumed to be a 'given'. We chose to foreground the key RD components as four key programme principles (after Vorster & Quinn, 2012):

- Contribute to the development of participants' theoretically informed understandings, and teach in ways that support epistemological access for a diverse student body.
- Respect participants' disciplinary backgrounds, and to encourage participants to interrogate the nature of their own disciplines and relate this to ideas presented in the programme.
- Promote reflective practice, requiring critical engagement based on evidence and theory with the roles and practices of higher education teaching, rather than having as its goal the teaching of a set of generic skills and techniques.
- It is often necessary to disrupt participants' existing beliefs about teaching and learning.

This then flows on to the consideration of the 'powerful knowledge' (*sensu* Wheelahan, 2010) that participants should develop over the course of the programme that is required to develop 'expertise' rather than 'procedural competence'. This form of knowledge is a pre-requisite for participants to contribute to the evolution of the theory and practice of the academic field in which they are practitioners – university teaching.

Powerful knowledge is a product of learning described variously as deep (Marton & Säljö, 1976), meaningful (Ausubel, 2000; Novak, 2010) and cumulative (Bernstein, 2000; Maton, 2009), in order to generate qualitatively rich understanding that is in turn related to appropriate practice knowledge (Kinchin and Cabot, 2010, Maton, 2014). Young and Muller (2013: 245) consider knowledge as being powerful when it *'frees those who have access to it and enables them to envisage alternative and new possibilities.'* Maton (2013) described a universal desire for the construction of this type of knowledge that aims to generate ideas that have utility beyond the specifics of their originating contexts. He has developed this argument to make the statement that:

"A spectre is haunting education – the spectre of segmentalism. This affliction occurs when knowledge or knowing is so strongly tied to its context that it is only meaningful within that context."

(Maton, 2014: 106)

Characteristics of teaching that will support a move away from segmentalism have been specified by Biggs (2003: 17), including:

- Make the structure of the subject explicit
- Encourage the active participation of students
- Build on what the students already know
- Assess for structure rather than independent facts

The regulative discourse underpinning the programme will inevitably have a weaker semantic gravity (i.e. it is less context-specific) than the more transparent (and practicum-focused) instructional discourse (figure 1), and so it is anticipated that initially it will prove more challenging to most programme participants. It is within the aims of the programme to help participants to relate these discourses and their concomitant knowledge structures as they *'ride the semantic wave'* (*sensu* Maton, 2013; 2014), and develop their expertise in the field of higher education.

3 Concept mapping-mediated interviews

An aspect of the method we have adopted in this research project that requires further discussion is the nature of the concept mapping-mediated interview (Kandiko Howson & Kinchin, 2014). The standard interview set-up requires the interviewer to present questions to the interviewee in order to gain access to the interviewee's individual insights and personal perspective. This is achieved by engaging in dialogue (verbal or textual) that is by its very nature linear in structure. Within that linear narrative, it is then up to the researcher-interviewer to determine the underlying structure within that dialogue to construct an interpretation of the interviewee's understanding. In essence, the interviewer has to interrogate the interviewee's invisible knowledge structure.

Within the concept mapping-mediated interview, the dynamic between the interviewer and interviewee is changed in a subtle, but important way. Here it is the interviewee that exposes his/her knowledge structure through the emerging concept map, shown in previous studies to be the ideal tool to make learning visible and externalize the relationship between public and personal learning in higher education (Hay et al., 2008; Kandiko et al, 2013;). The interviewer's job is then to prompt the interviewee with questions that will encourage him/her to interrogate his/her own knowledge structure. This means that the interviewer no longer has to impose a structure on the linear narrative, but rather interpret the structure that has emerged from the dialogue (Kinchin, Streatfield and Hay, 2010). This process makes it less likely that the interviewer will impose an inappropriate knowledge structure based on his/her prior conceptions. Whilst no restrictions were verbalized to the mapper in terms of the number of concepts to be included, the process used 38 x 50mm self-stick notelets to act as the nodes on which the concept labels were written, and these were affixed to a sheet of A3 paper, so that once the sheet was becoming full, the interviewees tended to stop adding new ideas.

4 Map analysis

Ten concept maps were produced: three by academic developers, four by e-learning technologists and three by faculty representatives. Within the ten maps, 96 different concept labels were recognized, with 74 of these each used only once by a single mapper. Only 8 concept labels were used 3 or more times: practice (7); discipline (5); research (5); new technology (3); online (3); PGCAP/Grad Cert (3); career (3) and teaching (3).

That only ‘practice’ (in terms of ‘professional practice’ and ‘academic practice’) was included in all the maps produced by the seven members of the programme team is of interest, as it was seen by the team to be crucial to link the theory presented within the programme with the practical activities of the participants’ working lives. The use of practice seems to emphasize the processes involved in professional development. In contrast the three maps produced by the faculty representatives did not feature ‘practice’ at all, but referred to the more goal-orientated products of the programme – in terms of career development and promotion. This difference in perspective (from process to product) may have important consequences for the language used in marketing the programme to colleagues based in the academic faculties.

4.1 An academic developer’s map

Space allows for the discussion of just two of the maps gained in this study. The map in figure 2, was produced by an academic developer who was involved with the programme development from the outset and was ultimately responsible for the development of one of the teaching modules.

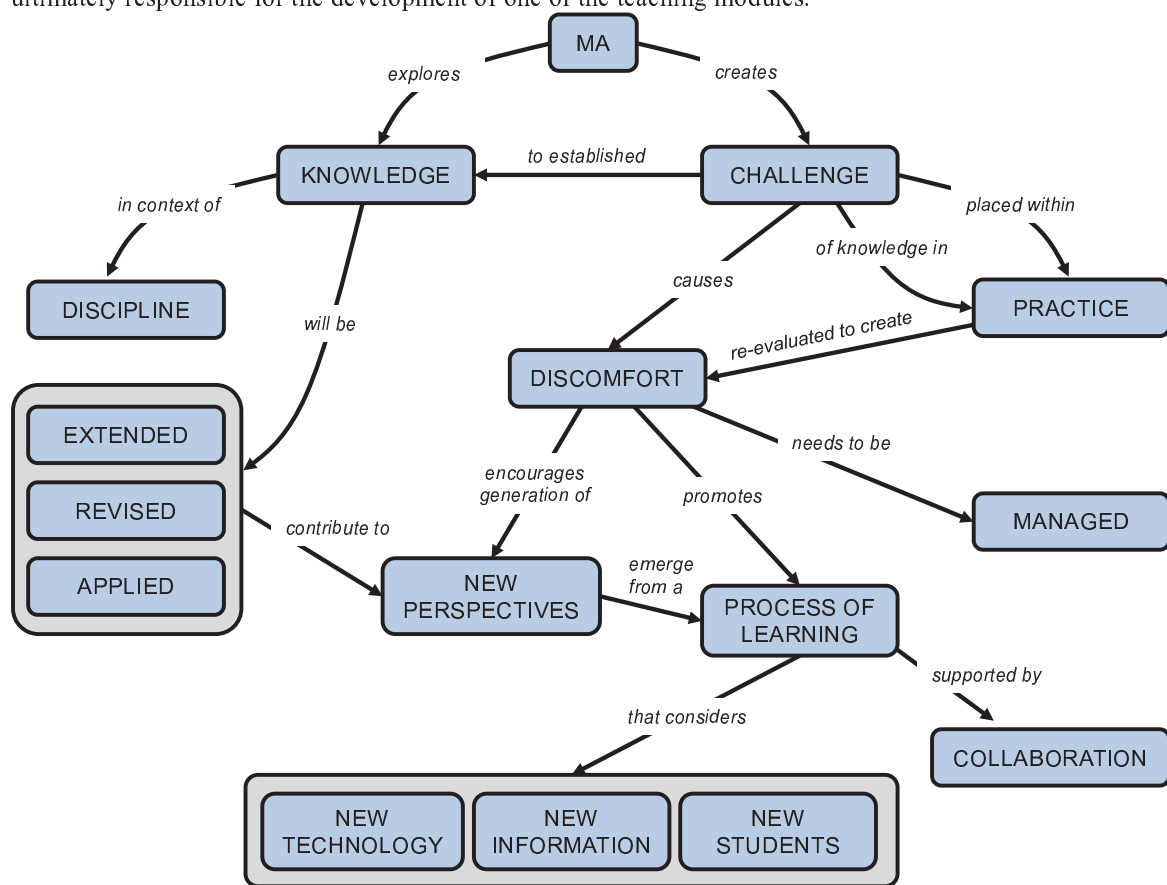


Figure 2. Map produced by an academic/faculty developer.

The map in figure 2 concentrates on the MA’s role in extending and revising knowledge to offer new perspectives. In the classic paper by Posner *et al* (1982), those authors present a model of conceptual change which articulates the process by which people’s central, organizing concepts change from one set of concepts to another set that is incompatible with the first. They consider learning to be a rational activity whereby ideas are accepted because they are intelligible and fit with available evidence. Students use existing concepts to deal with new phenomena (assimilation), but when these concepts are inadequate, the student must replace or reorganize the central concepts (accommodation). The authors propose the following conditions as necessary for conceptual change: there must be dissatisfaction with existing conceptions; a new conception must be intelligible; a new conception must appear initially plausible; and a new conception should have the potential to be extended.

The map author of figure 2 has not described this in terms of the ‘cognitive conflict’ described by Posner *et al* (1982), but has opted for the term ‘discomfort’, that suggests a greater consideration of the affective domain within the process of learning (e.g. Beard *et al.*, 2007). Rowe *et al.* (2013) have considered the role of positive emotions in the learning process and have referred to ‘passionate inquiry’ as a source of such emotions.

Specifically, positive emotions (particularly *interest/excitement* and *love*) were seen to be associated with a curriculum perceived to be relevant to the learners' needs, and delivered by genuinely engaged teaching staff. The RD of the programme here was developed with the explicit intention of "*starting and ending with the participants' discipline*" (Figure 1), to ensure relevance to practice. This has re-emerged in a number of the programme team's maps, although in practice 'relevance' may be a more difficult notion to foster among students in the early weeks of a programme when working at distance in an online environment (Marchand & Gutierrez, 2012).

When constructing a curriculum there is an implicit view of the student embedded within the pedagogical framework and in the selected content to be covered within the programme. Ulriksen (2009) has developed the concept of '*the implied student*' to make explicit the relationship between the expectations of the students, teachers and institution. Ulriksen (2009: 522) sees the implied student as drawing attention to the unspoken anticipations about what studying is and what the meaning of the study is whilst emphasizing the structure of the programme, the mode(s) of teaching and the teachers' expectations. He summarizes this as:

"the study practice, the attitudes, interpretations and behaviour of the student, that is presupposed by the way the study is organized, the mode of teaching and assessment, by the teachers and in the relations between the students, enabling the students to actualize the study in a meaningful way."

As the 'students' on this programme will also be university staff, who by various measures will already have been 'successful students' within their home discipline, there will be some expectation that programme participants will already possess some study skills (though these may be discipline-specific), and that participants will also be proactive in their studies, with some internal motivation for undertaking this particular programme. The experience of the academic developers within the programme team was such that they anticipated the primary focus of their implied students would be their home discipline (rather than education *per se*), and that the motivation for engaging in this programme would be to further their disciplinary standing, rather than to 'migrate' into education or the social sciences more generally.

4.2 A faculty perspective map

The two main clusters of concepts within the map in figure 3; the network to the left starting with 'pedagogy' and the chain to the right starting with 'professionalism', indicate a structural divide that suggests a conceptual component and a procedural component that also reflects difference in semantic gravity. The pedagogy network indicates a low semantic gravity, whilst the professionalism chain indicates a high semantic gravity (a close link to practice). The challenge for the MA programme is to build a bridge between these opposing elements that provides an indicator of expertise (Kinchin and Cabot, 2010).

The small cycle at the top left of the map (between pedagogy and discipline) is also of great significance to the author of this map who explained that the pedagogy of the discipline is embedded in the discipline rather than being something that is imposed on the discipline from the outside. The map author sees this as a major obstacle in getting academics to see teaching as an integral part of their role within the university, rather than something that is in conflict with their role as researchers. This view resonates strongly with the position outlined by DiCarlo (2006) when he stated that *biology should be taught as science is practised*, and also with the study by Aydeniz and Hodge (2011) who found that the identities of a professor as a teacher or a disciplinary expert can be in tension with structural elements of the workplace that discourage the enactment of teacher identity. A similar phenomenon has been noted in the Arts where tutors report experiences of 'being in two camps with tension and separation between them' (Shreeve, 2011: 89). Therefore, whilst the dynamic tension illustrated between 'pedagogy' and 'discipline' is framed in a very positive and mutually beneficial manner here (e.g. 'complementary to', 'feeds into'), if this relationship becomes more negative, it may put the enactment of the whole pedagogy network (on the left hand side of the map) under threat.

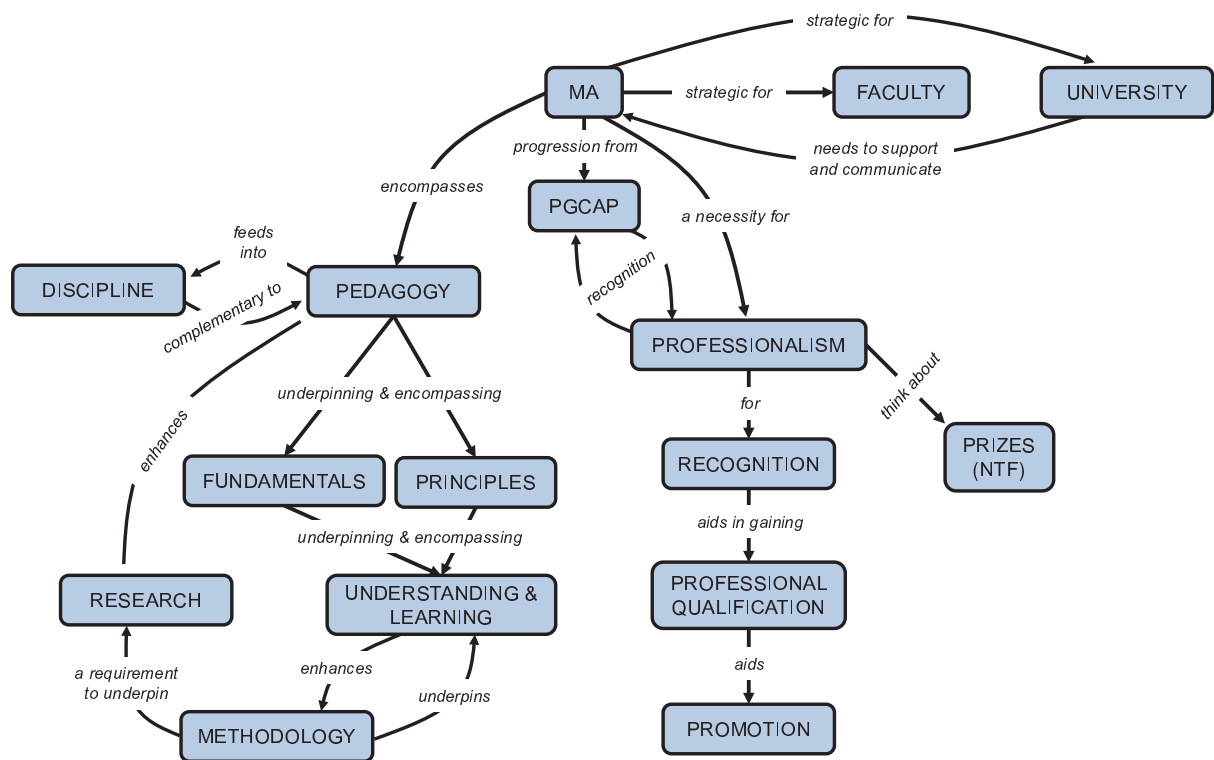


Figure 3. A faculty perspective map.

The culture of the workplace could be seen to favor ‘discipline’ in a manner that is detrimental to the development of reflection on the fundamentals and principles that are seen to underpin learning, with research productivity perceived to be of higher value than teaching productivity (as described by Young, 2006 and reiterated by Alpay and Verschoor, 2014). It is exactly this sort of tension that has been seen to drive institutions towards reliance on ‘non-learning outcomes’ (*sensu* Kinchin, Lygo-Baker and Hay, 2008). Novice university teachers have been shown to view teaching and research within the same discipline to be epistemologically separate (Kinchin et al., 2009). Unless this issue is addressed, and the pedagogy of the discipline is recognized as being a fundamental *part of the discipline*, the structural separation of teaching and research is likely to persist. The author of map 3 appears to be suggesting that if an academic is not an expert in the pedagogy of his/her discipline, then they are not expert in the discipline.

5 Summary

A number of general issues were raised by this concept map-mediated reflection on programme design and delivery:

- The language used within the team of academic developers and e-learning technologists may not quite fit with that used within the faculties. Whereas the use of ‘practice’ is understood within the programme team and may indicate a focus on processes, the preferred use of ‘career’ or ‘professional development’ seems to suggest a more goal-orientated focus within the faculties.
- There are implications within these data for the usefulness of online staff profiles. Many academic staff profiles will include a very few lines to summarize, “I teach on Education 101”, but the contents of the maps presented here really ask questions about what that actually means and how much variation in interpretation of ‘teaching’ there may be. Whilst a student may interpret the statement as, “I tell you what you need to know to pass Education 101”, some of the staff represented here may actually be saying, “I help to manage your discomfort while you learn Education 101”, or “I will engage in dialogue with you about Education 101, and expect you to respond”. The teaching staff represented here will be encouraged to revisit their online profiles to offer a more detailed perspective on their teaching and the expectations they will place on the students within the programme.
- Management of discomfort will require that programme participants are comfortable with aspects of their practice (often the procedural aspects of their jobs) to allow them the confidence in exploring the discomfort in other aspects (often the more conceptual aspects of their roles). Discomfort should

therefore be focussed on the areas of weak semantic gravity – the conceptual. The areas of strong semantic gravity need to provide stability as a platform for their learning to be realised.

- The importance of emotions in the learning process was recognised by members of the programme team, but was often expressed in a potentially negative manner (in terms of ‘discomfort’ or ‘disruption’) which may create anxiety among course participants. Whilst this language was considered appropriate for the internal dialogues between the team members, it was considered sensible to develop a language for a more positive transmission of emotions with the programme participants, and this was a function of the ‘exploratory space’ offered by the programme in which dialogue could be used to support learning rather than generate anxiety.

The reflective process described here can help to stimulate discussion among the programme team, and emphasizes the need to make assumptions about teaching and learning explicit to students on the MA programme. Future iterations of this reflective process will incorporate reflection on students’ maps to help evaluate how the programme has addressed the students’ learning needs.

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