

Travelling in the Classroom: Podcasting as an Active-Learning Tool for Interdisciplinarity

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ABSTRACT

Interdisciplinarity in the classroom is predominantly championed around a need to address pressing social problems by integrating knowledge from diverse disciplines. But can interdisciplinary teaching take shape without the usual problem-solving frame? And are there new methods/mediums through which to explore interdisciplinarity? These questions have led to new and promising developments related to podcasting, active learning, and interdisciplinarity in the classroom. Through the lens of Travelling Concepts, we reflect on our experiences in the making and using of the podcast series – Travelling Concepts on Air – to better understand interdisciplinarity. We show the value of students not only listening to podcasts as a supplementary means of learning, but also creating podcasts as a form of active learning.

Keywords: podcasting, travelling concepts, active learning, interdisciplinarity, education, reflection

INTRODUCTION

Interdisciplinarity in the classroom is most often championed and designed around a need to address a pressing social problem or complex global challenge, which can only be solved by integrating knowledge from diverse disciplines. But can interdisciplinary teaching take shape without the usual frame of solving problems or addressing complex challenges? And are there

new methods or mediums through which to explore interdisciplinarity? These two central questions have framed our collaboration and guided our work and have led to new and promising developments related to podcasting, active learning, and interdisciplinarity in the classroom.

In this article we reflect on our experiences with teaching interdisciplinarity by using podcasting as a learning tool. In line with this special issue, we take Travelling Concepts as the key medium to explore interdisciplinarity. As outlined by Mieke Bal (2002), travelling concepts refers to concepts that ‘travel’ within and across disciplines and this travelling often impacts the meaning, reach, and operational value of the relevant concept. Through the lens of Travelling Concepts, we have been able to explore interdisciplinarity without first identifying a complex problem to be solved. In order to develop this further, in 2020 we created a podcast series – *Travelling Concepts on Air* – to better understand and elaborate on the notion of travelling concepts and how they are related to interdisciplinarity, both in terms of research and education. In each episode of our podcast series, we focus on a particular concept and invite two scholars from different disciplines to join us and converse about how they use a specific concept. By elaborating on their approaches, experiences, understandings, and assumptions, we aim to uncover the potential ‘travelling capacity’ of a concept and to gain new insights into disciplinary boundaries.

It was through the making of this podcast series that we, as educators, gained deeper understandings of the promises and pitfalls of interdisciplinarity. The podcast was thus a means by which we were able to better appreciate interdisciplinarity. We were learning by doing and wanted to share this method of active learning with our students. We began using the various episodes in our education in two different ways to allow students to gain more insight into how interdisciplinarity can and cannot work. The first was as supplemental material in a diverse set of classrooms (i.e., listening to the episodes and discussing them in class), and the second was in the form of active learning in our own co-taught interdisciplinary seminars wherein students made their own podcast episodes.

In this article, we reflect on our experiences in the making and using of the podcast series to show how podcasting can be used as a learning tool to understand interdisciplinarity. First, we elaborate on core concepts underpinning our work, including interdisciplinarity, podcasting, and active learning. Next, we explain about the making of the podcast series and using it in the classroom. After presenting our findings, we provide some reflections. We emphasize the importance of intrinsic motivation to look beyond disciplinary boundaries, the significance of time and support in exploring interdisciplinarity exchanges both for students and teachers, the value of these exchanges being facilitated even outside the scope of a problem-solving frame, the usefulness of examining contestations as well as

common ground, and most importantly, the benefits of active learning. One of our main conclusions is that *both* students and teachers better understand interdisciplinarity when they are ‘doing’ interdisciplinary work. Our findings and reflections directly contribute to various areas of education scholarship including the role of podcasting in education (and interdisciplinarity more specifically); interdisciplinarity beyond the problem-solving frame; and the importance of active learning by both students and teachers.

INTERDISCIPLINARITY, PODCASTING, AND ACTIVE LEARNING

As noted in the introduction to this special issue, while interdisciplinary education is on the rise (Alexander, 2019), there is still much to learn about how interdisciplinarity can be used and taught in various educational settings. However, new scholarship and practice in this area is promising (Ashby & Exter, 2019; Angerer et al., 2021). We have drawn inspiration from our colleagues working with the Interdisciplinary Education Team at Utrecht University who employ a four-stage learning model for stimulating interdisciplinary thinking and learning interdisciplinary skills. This model draws from existing theories on interdisciplinary and cognitive development by Alan Repko and acts as a foundation from which interdisciplinary courses and learning activities can be designed. Below we discuss further how we implemented this model through podcasting and how podcasting can then act as a useful teaching tool, especially for interdisciplinarity.

Podcasting emerged in the early 2000s and is seen as a new digital revolution within aural cultures (Berry, 2016; Markman, 2012; Spinelli and Dann, 2019; Llinares et al., 2018). Podcasts are increasingly used in academia, both for research purposes (Fantini and Buist, 2021) and in education. There is growing research on how podcasts can be used in education, particularly as a means of engaging with students (Fernandez et al., 2015; Heiselen, 2010; Lin et al., 2013; Lee et al., 2008), and there is a prominent focus on the use of podcasting in language learning (Abdous et al., 2012). Advantages of podcasting in teaching have centered on listening (Clark and Walsh, 2004; Dunbridge, 1984), the time-shifting ability, i.e., being able to listen across time and space (Muppala and Kong, 2007), and accessibility (Hew, 2009). Heiselen, for example, argues that ‘students experience podcasts as a genuine improvement to the study environment’ and that podcasts are good spaces for ‘experimentation’ (2010: 1063).

In understanding how podcasts can be used in teaching, various categories have been identified (Vogele and Gard, 2006; Rosell-Aguilar, 2007) to differentiate between administrative podcasts (guides), special lecture series (guest lectures), and classroom podcasts (general curriculum teaching and content). Furthermore, podcasts can be used in a substitutional,

supplementary, and creative manner (McGarr, 2009). Podcasts are often used in a supplementary way, as a blended learning process wherein they are used alongside other teaching tools. This approach contrasts with more encompassing styles, namely ‘inverting the classroom’, where all in-class sessions are replaced with podcasts (Gannod, Burge, & Helmick, 2008). As highlighted by Heiselen (2010), much more longitudinal research on the usage and impact of podcasting in teaching is needed, and this article contributes to this growing body of work by exploring how podcasting can be used in interdisciplinary education. For our purposes, we are specifically interested in how podcasting can act as a teaching tool and can contribute to active learning. This means that students not only listen to podcasts as an important supplementary means of learning, but also create the podcasts themselves as a form of active learning.

Over the last few decades, active learning has attracted a good deal of attention in educational scholarship. Influential frameworks for describing the learning process, including Bloom’s Taxonomy and the 5E Instructional Model, call for active learning as part of higher order thinking (Bloom et al., 1956; Bybee et al., 2006). For many it is a clear departure from traditional instruction where students passively receive information from a lecture (Hyun et al., 2017). Generally, active learning is defined as any method of learning that engages students directly in the learning process, requiring them to undertake meaningful learning activities and to learn by doing (Bradberry & De Maio, 2019: 94; Bronwell & Eisen, 1991). This entails a process whereby students directly construct knowledge and actively engage with and critically reflect on the subject matter (CAS, 2017). Students acquire knowledge and skills from direct experiences outside of the traditional classroom setting. Often, the active learning is combined with collective or collaborative learning processes (Prince, 2004). There is extensive empirical support for active learning in the classroom (Prince, 2004; Michael, 2006), with research indicating an increase in content knowledge, critical thinking, and problem solving (Anderson et al., 2005; Kember & Leung, 2005), as well as an increase in an enthusiasm for learning (Hyun et al., 2017; Thaman et al., 2013).

Successful active learning is also important for teachers and the roles they take on (see Cook-Sather, 2011; Morrison, 2014). To achieve successful active learning, Børte et al. (2020) identified three prerequisites that are closely linked to the role of the teacher and broader institutional setting: (1) better alignment between research and teaching practices; (2) a supporting infrastructure for research and teaching; and (3) staff professional development and learning designs. Their work indicates the important relationship between teachers and students, as well as their broader environment. However, much of the literature on active learning and teachers focuses on how teachers can facilitate active learning in the classroom (see

Kudryashova et al., 2016) rather than on the active learning processes of teachers themselves. Our aim, with this article, is to address both points because very often the learning process of the teacher is taken for granted. Accordingly, before we could bring podcasting into the interdisciplinary classroom as an active learning tool for students, we first had to learn by doing it ourselves.

PHASE 1: MAKING THE PODCAST SERIES

To explore interdisciplinarity in the classroom through podcasting, our project included two different phases. The first phase revolved around our own process of learning by doing, i.e., making the podcast series, and the second phase involved using the podcast as a learning tool in education in two different ways.

We are independent and non-professional audio podcasters, and this podcast series was set up through a combination of both personal and professional motives (see Markman, 2012). We met in 2016 as members of the Utrecht Young Academy (UYA), and there was an immediate connection between us. The first author is an anthropologist and conducts research on violence, security, and policing in South Africa and Kenya. The second author is a legal scholar specializing in international human rights law, transitional justice, international criminal law, and victims' rights. This combination of law and anthropology, along with our friendly relationship, would assist in the informal and spontaneous atmosphere of the podcast. Furthermore, as women, we also wanted to counteract the male dominance within the podcasting world (see Markman, 2012). We explicitly mention our collegial relationship, as we think that this is a key part of how this podcast series, and interdisciplinarity works. As we discuss later, and as shown throughout this special issue, interdisciplinarity often works with people that establish certain understandings and relationships with each other. Our relationship, we argue, was crucial to the setting up and execution of the podcast and the successful use of podcasting in an interdisciplinary classroom.

After the preparatory work that included various technical and logistical issues, we then recorded episodes in a recording studio provided by the university. To minimize the politicization of editing (see Fantini and Buist, 2021), our recording sessions generally do not exceed the 45-minute mark. In Season 1 of the series, we covered nine concepts: *war, sustainability, time, civil society, heritage, agency, legitimacy, transformation, and diplomacy*. In Season 2, we covered 10 concepts: *sea level, surveillance, equilibrium, security, facts, sovereignty, queer, violence, youth, and crisis*. We knew early on that our audience would be a scholarly/academic one, namely people who like to discuss and think about concepts across disciplinary borders and listen to others doing so. Although it is difficult to

ascertain who listens to which podcasts, there is a general observation that podcasts ‘attract people who are already somewhat interested in the subjects covered in the podcast they subscribe’ (Birch and Weitkamp, 2010: 892).

In developing the podcast series, we structured each episode around five main questions:

1. How did the concept originate (in your discipline) and how do you use it in your research?
2. Are you aware of the ways in which other disciplines approach the concept?
3. How are the various usages complementary?
4. Where is the friction in the various usages of the concept?
5. What are ways to move forward?

These questions were intended to prepare our guests for the conversation, although bearing in mind that discussions often take their own course, and the questions get weaved in and out throughout the conversation. These five questions are aligned to the four-stage learning model used at Utrecht University, which is based on Repko’s work, namely: disciplinary grounding, perspective taking, finding common ground, and integration. The first stage of the model – disciplinary grounding – provides the foundation for interdisciplinary understanding (Miller and Boix Mansilla, 2004).

To start the substantive part of the show, we ask the guests a two-part question: how did the concept originate (in their discipline) and how do they use it in their research? The disciplinary grounding element of our show has two key functions. First, very practically, it gives the guests a basis from which to start the discussion. Even if they are engaged in interdisciplinary research and teaching, they likely first worked with the concept when they were carrying out more disciplinary work. Moreover, it is a comfortable question to ease them into the conversation and in almost all the episodes, the guests had a clear starting point from which to begin engagement with the concept. This could be the start of their studies or the commencement of a new research project, showing the temporal differences in terms of how long or in what ways the academics have worked with a particular concept.

Second, by starting with disciplinary grounding, it gives listeners, many of whom are students, a basis from which to understand how the guests work with a concept. Because we invite scholars from a variety of disciplines, it positions them on the academic disciplinary spectrum. Thus far, we have invited scholars from anthropology, chemistry, conflict studies, criminology, earth sciences, economics, ethics/philosophy, governance, history, physics, literary studies, law, psychology, and sociology. Each of these disciplines has its own *perspective* or distinctive way of seeing things that is ‘based on commitment to a system of theories, a body of professional knowledge [...]

or a discourse community’ (Miller and Boix Mansilla, 2004: 4). By making this clear, guests and listeners are better positioned in the later discussion around interdisciplinary understandings around the concept.

After grounding the concept in two separate disciplines, we often ask the guests—if not already offered voluntarily: Are you aware of the ways in which other disciplines approach the concept? This question is all about perspective taking. In interdisciplinary studies, perspective taking theory is the ability to look at a certain phenomenon, issue, problem, or *concept* from the perspective of another discipline and then being able to identify similarities and differences between them (McElreavy, 2016). For the purposes of the podcast, it is not only valuable for both guests and listeners to realize that there are different opinions about a concept, but also that such understandings can lead to new insights. We especially want listeners to understand how incorporating other disciplinary perspectives can be a way of enriching one’s own understanding and/or positioning of a concept (Carmichael, 2018).

The third stage, following perspective taking, is about finding common ground and contestation, and the third and fourth questions focus on that. These questions allow the guests to expand upon their perspective taking exercises. According to Repko and Szostak (2021), a key step in getting to integration for purposes of interdisciplinary learning is finding common ground between disciplines. Yet, because we are interested in both the promises and pitfalls of interdisciplinarity, we were interested in hearing about commonalities as well as contestations. In terms of travelling concepts, this is where a concept or conceptual understanding may or may not have travelled for a particular reason.

In the final and crucial step towards greater interdisciplinarity, integration is key. Integration is about combining disciplinary insights and understandings to develop something new that would have been unachievable through single or even multi-disciplinary means (Miller and Boix Mansilla, 2004). While the podcast does not really aim for integration of perspectives between the guests, we do ask: What are ways to move forward? Through this question, we have sought to move past the commonalities and contestations, to get the views of the guests on new areas of research. Ideally, however, the podcast series can act as a bridge and tool for students to engage in integration, as we discuss below.

Through our guiding questions for the conversations within the podcast that were aligned to the four-stage learning model for interdisciplinary, we, as researchers and educators, learned a great deal about both podcasting as a tool and about interdisciplinarity – this was our own way of learning-by-doing. The next phase centered around using podcasting in the classroom.

PHASE 2: USING THE PODCAST SERIES

We implemented the podcast series in the classroom to teach students about interdisciplinarity in two ways. The first was as a supplementary tool, wherein we requested teachers to assign the various podcast episodes in their classes and then invited their students to fill in a short survey. As a result, across very diverse settings, namely in courses taught in different faculties, in different educational programs, and with students from different levels and exposure to interdisciplinarity, students listened to an episode alongside other required readings. For example, the episode on Sustainability was used in an undergraduate anthropology course on ‘Anthropology and Sustainability’, and the episode on Civil Society was used in a law module on ‘Civic Space and Civil Society’. As a result, the students who filled in the survey had diverse disciplinary backgrounds and levels of experience and expertise.

The survey consisted of the following ten questions:

1. Which episode(s) have you listened to?
2. Did you find the podcast useful in improving your understanding of that particular concept? (if you listened to more than one episode, please make a generalisation across the podcast series)
3. Were you familiar with the idea of a ‘travelling concept’ before listening to the episode?
4. If ‘yes’ to question 3, how and where?
5. What do you think of the idea of travelling concepts?
6. Were you familiar with what interdisciplinarity entails before listening to the episode?
7. If ‘yes’ to question 6, in what ways did you become familiar with interdisciplinarity?
8. How did this podcast shape your ideas on what interdisciplinarity is or can be?
9. What do you think about the use of podcast episodes in teaching?
10. How would you compare listening to a podcast versus reading an article/book chapter for a course?
11. Do you have any additional feedback?

To ensure that it was not too time consuming for the students, the survey consisted of 10 simple questions that focused on knowing more about prior knowledge on traveling concepts and interdisciplinarity and the role of podcasting as a teaching tool, both more generally and specifically for interdisciplinarity. The last open question was meant to provide space for further explanatory dimensions that we may have overlooked. At the time of writing, a total 53 students filled in the survey. Despite the low response, we were able to gain quite some insight into their experiences, as we will discuss

in the following section. Furthermore, we will continue to use this survey in the future with similar and new courses and this will allow us to continue collecting data about students' experiences.

The second way we utilized the podcast in education was through a four-week honors seminar series on interdisciplinarity, which we co-taught together. At Utrecht University, we have various programs for honors students at the undergraduate and graduate level. At the master's level, one program is the Graduate Honours Interdisciplinary Seminars (GHIS), which is an extracurricular program that is open for master students across the entire university who are looking for a unique intellectual exchange. In the academic year of 2021-2022, we were invited to organize one of these seminar series, which included four seminars wherein we explored our experiences of interdisciplinarity. In the first two seminars, we focused on our interdisciplinary research experience and how our interactions with one another within the Utrecht Young Academy and Transformative Policing Research Group led to our making of the podcast.

In the third and fourth seminars we focused on the podcast series. As preparation for the third seminar, we asked the students to first listen to some of the episodes (they got to choose) and reflect on the disciplinary grounding that took place, the perspective taking, and whether guests were able to find common ground and, in some cases, share examples of integration—essentially using the Repko approach to interdisciplinarity. During the third seminar, we extensively discussed the various stages within the different episodes in the classroom. With the consent of the students, we recorded and transcribed this conversation, in order to capture their experiences.

In the second half of the third seminar, we implemented a 'Travelling Concepts' pressure cooker, as a starting point for their assignment, i.e. making a podcast episodes. This pressure cooker is an intense (time constrained) session where the students were split into pairs and then, based on their different disciplinary backgrounds, asked to select, and discuss a concept where they could see 'travelling' possibly occurring. We purposely paired students up from different faculties, so that they were really coming from different disciplinary backgrounds. During this pressure cooker of 20 minutes, the students selected a particular concept that they would create an episode on. In total we had 10 students and thus five different pairs and concepts. The homework was then to make a short episode of maximum 15 minutes discussing how their disciplines view and use a certain concept and explore whether there is any common ground. We provided the students with material and support on how to make the podcast. We were thus not only getting the students to listen to podcasts on travelling concepts and interdisciplinarity but asking students to actively make a podcast recording and go through the exercise of an interactive dialogue with their peer.

Eventually, the students produced five episodes on the following concepts: *resilience, consciousness, environment, memory, and uncertainty*.

During the fourth seminar, we listened to the episodes together and discussed both the process and content together. The students then helped select which student podcast would be included in our Christmas Special for Travelling Concepts on Air. In the following sections, we draw from our experiences in making the podcast series, our discussions with these students, and the results from the surveys and class evaluations to outline some of our findings on using podcasting to explore interdisciplinarity in the classroom.

FINDINGS

In this section, we discuss our findings for the two different phases of our project, focusing on both teachers and students.

Learning for teachers

Our first key finding is that it is crucial for teachers to undergo a process of active learning themselves. Through the four-stage learning model that outlined the format of our discussions in each of our episodes, we were able to, together with our guests, identify how interdisciplinarity can and cannot work. The discussions we had, as well as the reflections we have had since then, have been pivotal for our own development and learning as educators. Without our own process of active learning, we would not have been able to teach students certain underlying processes about interdisciplinarity or about skills around podcasting.

In terms of disciplinary grounding, we could see that most guests found the second part of the disciplinary grounding question (how they use the concept in their research) relatively easy to answer. Interestingly, the first part of the question (the origins of the concept in their discipline) was not always self-evident. For example, during the episode on Surveillance, both guests were not sure about how the concept had emerged in their own disciplines. We provide the guests with the questions in advance of recording, and by doing so, this has triggered several guests to carry out independent research into the origins of the relevant concept in their fields of study. One of our legal scholars in the episode on War, for example, explicitly mentioned that she had to dig into legal archives to see how the concept originated in her field, and other guests had similar remarks. Furthermore, many mentioned that they had never thought about the origin of a concept in their field before. This is not because they had not been interested but because it had never occurred to them to question the origins of a concept as used in their own discipline. Additionally, with some concepts, the disciplinary origin was not always known. With the concept of legitimacy, for instance, both scholars (from governance and sociology), were not certain about the disciplinary

origin, perhaps pointing to the fact that some concepts are used by various disciplines at the outset and not necessarily grounded from a specific discipline.

The next step, of perspective taking, was probably the most important component of the podcast series and it was enlightening to see this happening during the conversations we had. Perspective taking allows the guests, as well as the listeners, to better appreciate the complexity around so-called ‘simple concepts’. What we have experienced in the episodes regarding perspective taking has been quite varied. Some guests have indeed thought deeply about how other disciplines have engaged with a concept and drew from those perspectives in their own work. During the episode on Legitimacy, the two scholars from governance and sociology were very aware of the perspectives from other disciplines and drew heavily from them in their own work. Other scholars, such as those from the episodes on War and Transformation, noted understandings from other fields but found them problematic. For the episode on Transformation, while the underlying aspects of the concept were relevant, the term itself had not entered the economic disciplinary sphere. Here, it was clear when limitations of travelling occurred and why. More often, however, after hearing about the guest’s perspective taking, conversations lead to discussions about common ground and contestations.

With regards to common ground and contestations, we essentially saw one of three general outcomes: (i) there was a good deal of common ground and understanding between the perspectives; (ii) there was some common ground between the perspectives of the guests; or (iii) there was little common ground. In the episode on Civil Society, for instance, we had guests from law and conflict studies. These are two closely aligned fields of study and the guests had previously worked together in both research and teaching. The discussions showed a good deal of common ground, including the use of common literature sources, theories, and understandings. However, key distinctions were still made clear, thereby showing that full integration may not be achievable or desirable given the divergent audiences of the guests. In the episode on Sustainability, the guests, from anthropology and earth sciences, had some common ground between the ways in which they worked with the concept, such as definitional understandings and literature sources, but departed sharply in terms of how they approach their research more broadly. The anthropologist was much more engaged with critical scholarship whereas the earth scientists/futurist seemed more of a challenged-based scholar—acknowledging the critique, yet more focused on addressing problems and providing solutions. Finally, an example of where little common ground was apparent was the episode on Agency where we invited scholars from law and ethics/philosophy. The conversation was rich and insightful, and the scholars recognized the other field’s contributions; yet there was little overlap or common ground.

In terms of contestations, there were less obvious tensions between disciplines. This was largely since many of our guests are actively involved in interdisciplinary research and education. Nevertheless, some tensions did come out. In the episode on Heritage, the two guests, one from anthropology and the other an historian, seemed to have a good deal of common ground between their understandings of the concept. However, both were frustrated by and critical towards the way legal processes and frameworks shape the concept. As such, the tensions highlighted were not between the disciplines represented by the guests but rather a third discipline identified by both guests (and represented by the second author). In the episode on War, there was a clear dispute about the usage of the concept: whilst the legal scholar argued that the notion of ‘conflict’ is more productive than ‘war’ since a finding of international armed conflict triggers specific legal obligations and protections, the conflict studies analyst was a proponent of using the phrase and concept of ‘war’ more broadly to understand contemporary realities around armed violence. The relevance and impact of the concept, as well as the meaning, were points of contestation here.

As we had hypothesized before making the podcast series, most episodes did not result in integration. The episode where integration was most evident was that on Sea Level. In this episode, the two guests discussed explicitly how they came together due to a specific problem (i.e., knowledge-gap) and that due to their different disciplines, they were able to reach new academic insights and practical solutions. Through their collaboration, they were able to reach entirely new ways of measuring and defining sea level – i.e., integration.

By making the podcast series, and thus having these discussions, we, as researchers and teachers, learned a great deal about interdisciplinarity (elaborated below in the section on reflections). We were able to identify the four-stage learning model and these experiences were crucial for us to implement this within our teaching. Furthermore, we also argue that this was due to us working together as an interdisciplinary team. Ample research has shown how team teaching can be effective in education (see Self and Baek, 2017), and we argue that interdisciplinary teaching teams are beneficial for an interdisciplinary classroom.

Learning for students

With regards to learning for students, our first set of findings concern the use of podcasting as a passive learning tool. As discussed, the episodes from our podcast series were firstly used in a supplementary manner, often used as compulsory listening next to other required readings. Several students highlighted a preference for listening to a podcast rather than only reading articles. This was indeed due to the flexibility podcasts offer, i.e., being able

to understand content in a more flexible manner, as highlighted in the following quotes:

I really enjoyed it... it helped for me to focus only on audio. I listened to it while taking a walk outside, and it was a really wonderful way of learning.

I think it is a good addition to the usual methods because you can do it from anywhere and still receive the information necessary. It is also nice to be able to pause and rewind ;).

I think, listening to a podcast doesn't really feel like an assignment for school, which makes it more fun to learn while listening to it.

Big fan! It's something different in-between all the reading and I can do some work while going on a walk outside.

Some of these sentiments were also echoed by our honor students, especially the time-shifting ability, and thus the ability to rewind, pause, and listen again. Yet, despite the general enthusiasm, a few students also indicated that they preferred books and/or articles and at times were more easily distracted while listening. One student highlighted:

I think I am more of a visual learner, so I do remember slightly more from reading, but at this time I am always on my computer so it was good to change from always reading to listening.

Another issue that particularly emerged from our discussion with the honor students, and which largely also comes from the format of our podcast series, is the potential for interaction and dialogue. Although podcasts vary in format, ranging from interviews, to storytelling, to investigate journalism, most podcasts center around interaction between two or more individuals. This is limited in academic texts: although scholars often position themselves within a particular debate or field within a scholarly text, the interaction is not live, and we are not immediately exposed to comments and reactions. A podcast provides a space where immediate responses can be voiced. This element of interaction is also crucial to the process of perspective taking. Like other forms of social media, with podcasts there is space for feedback. However, unlike other science-based podcasts, we have not used integrated online discussion forums (IODFs) for further feedback and discussion (Birch and Weitkamp, 2010). Yet our research so far does show promising results, indicating that students enjoy podcasting, particularly as a supplementary tool in their courses.

In addition to podcasting acting as a learning tool more generally, we also wanted to know more about how it is a learning tool for interdisciplinarity more specifically. Although one student mentioned that the podcast: ‘just furthered my knowledge on sustainability, not on interdisciplinary’, most students did emphasize that the podcast helped them understand how interdisciplinarity works. The podcast introduced many of the students to the notion of travelling concepts. While students had an inherent understanding that concepts travel, they had not been exposed to that phrase as such. One student noted: ‘I was not familiar with the term “travelling concept”, but I did notice during my reading that some words mean different things across disciplines’. Other students noted:

I have studied international law, international political science and international economics and have often encountered situations in which one concept meant completely different things in different disciplines - the idea of travelling concepts is thus absolutely crucial for interdisciplinary work in order to avoid misunderstandings.

Just brilliant! Really contributes to bridging the communication gap multi/interdisciplinary scholarship/work.

In some of the comments from the survey, there was a clear engagement with the four-stage learning model. Several students highlighted how the episodes allowed them to listen to and identify the process of perspective taking, as can be seen from the following quotes from the survey:

I liked that [the concept of] civil society was not simply discussed from various perspectives, but that you were trying to find a common understanding of the term.

A podcast is more interactive since it is not just one point of view, you’re receiving information from. It is mostly a conversation where we get to know different perspectives which I think is great.

Due to the format of the series, i.e., the conversation with different guests, students who filled in the survey were able to identify perspective-taking. Therefore, podcasting, used in a supplementary way, allowed students to identify the four-stage learning model and thus the potential stages of interdisciplinarity.

With our honor students, this was also the case: podcasting served as a useful learning tool. Yet with them, this was even more the case due to the centrality of active learning, i.e., making an episode themselves. During the discussions we had with the students, they all expressed how much they

enjoyed listening to the podcast. As one of them stated in their evaluation form of our GHIS seminars:

The podcast assignment was also a massive deviation from anything I had previously done and the chance to use the UU podcasting room equally really made this a much more special experience that I would definitely recommend to others.

In addition, they also explicitly mentioned how the episodes helped them understand interdisciplinarity, especially the processes of disciplinary grounding and perspective taking. It was the last two stages, namely finding a common ground and integration, that they experienced as more difficult. Although they recognize that this is the goal, as highlighted by one student: ‘That it is an ongoing conversation between different disciplines to create a consensus or an integration of ideas’, students found it difficult to execute this themselves. Even though they all were able to find some type of common ground, this did not always feel natural. One pair of honors students, for example, highlighted that they had to have several conversations to really identify where there was a mutual understanding.

The students highlighted that although it was rather challenging to make the podcast episode, it was also rewarding and provided them with a deeper understanding of both the concept, as well as the way interdisciplinarity works. As a result: by having to find a concept, think about disciplinary grounding, having conversations together, and putting together a podcast, i.e., learning by doing, they were able to learn more.

DISCUSSION AND REFLECTIONS

Through the survey and our own experimentation with co-teaching the seminars, we realized that using podcasts in teaching can be a very helpful tool for students to learn more about interdisciplinarity. Many of the results of the survey confirmed some of our initial thoughts and assumptions about the use of podcasts as supplementary material. For instance, an overwhelming number of students found the podcasts useful for understanding a particular concept from different perspectives. This is something that we expected to see in the results of the survey since our own understandings of certain concepts had been enriched while making the podcast.

With regards to interdisciplinarity, the views are more varied. From the survey, namely from those students who had listened to one or two episodes in their courses, it was not that apparent that the episodes were useful to understanding interdisciplinarity. However, from the honor students, this was more the case, and we conclude that this is due to the method of active learning. We saw that when the students were tasked with creating a particular

product, there was a heightened sense of understanding and enthusiasm. This finding is in line with research done, across disciplines, on active learning in the classroom (Michael 2006; Prince 2004), with research indicating an increase in content knowledge, critical thinking, and problem solving (Anderson et al., 2005; Kember and Leung, 2005), as well as an increase in an enthusiasm for learning (Thaman et al., 2013).

In line with this, we also conclude that active learning is equally important for teachers. By making this podcast series, we gained a deeper understanding about how interdisciplinarity can and cannot work and this was crucial for our own teaching. In addition, we also identified some other issues during our experiences of experimenting with podcasting, as a way of understanding interdisciplinarity, and using podcasts within education. The first is the importance of *passion or intrinsic motivation* to engage with others across disciplinary boundaries. From our conversations, with colleagues and students, a key factor in successful interdisciplinary collaborations has been a curiosity to learn from or interact with someone from outside their field or discipline (Angerer et al., 2021). There are scholars (and students) who may not see the merit of interdisciplinary engagement and prefer to solely interact with their disciplinary peers. That is fine. Disciplinary studies are also incredibly valuable. However, we believe that for students in particular, exposure to other disciplines already from their bachelor studies is important. It may ignite a passion or curiosity to learn from and engage with others.

Next, we noticed the importance of *time* in fostering successful interdisciplinary collaboration or exchanges. As highlighted by multiple guests, ‘it takes time’ to really understand other scholars and their usages of a different concept. The first example is our own friendly relationship: we invested time in our partnership in both making the podcast and in using it in education together for our own journey of understanding interdisciplinarity. With the heavy workload inherent to academia, many scholars may have the motivation to interact across borders but simply lack the time to have such discussions. This was beautifully evident in the episode on Time, which included a literary scholar and a geologist. They shared how they, through various collaborations in education, started with perspective taking and only after many conversations and interactions moved onto common ground and even integration, developing their own categories and tools to analyze time. They shared how they still experience new breakthrough moments where their understanding of each other’s perspectives increases. As one of them recalled during our session: ‘And I remember, we had this epiphany and I look at [name], and... oh, no, I don’t think I understood you until now. I think I just got what you mean by that. And that’s so interesting!’ Similarly, students may be so bogged down in their demanding study programs to take the time to engage with peers across disciplines. For this reason, opportunities like the GHIS for students or similar programs for teachers, such as the UYA or

interdisciplinary research groups, are so important. University funding and policies should create spaces and opportunities for teachers and students to experiment with interdisciplinarity through different types of assignments and means of assessment. This finding further supports the research carried out by Børte et al. (2020) on the importance of supportive infrastructures.

Through our podcast and interactions with guests and later with students, we noticed that very often people think that interdisciplinarity only takes place to solve a problem. This is because interdisciplinarity is often promoted in this way—as a means through which to address global challenges that require ‘out of the box’ and integrated ways of thinking. However, we have found that interdisciplinary exchange is also valuable on a more conceptual level—even when not looking to solve problems. Using the four-stage learning model for stimulating interdisciplinary thinking, we were able to delve in the different goals or approaches scholars taken when thinking about, working with and teaching specific concepts. In the episode on Sustainability, for example, one guest clearly had a problem-solving mentality while the other scholar focused more on critiquing and conceptual thinking. Both found the podcast discussion fruitful. With the episode on Heritage, one of the guests was actively engaged as a practitioner, working with several foundations on issues pertaining to conserving heritage sites, while the other did not. Again, the conversation was appreciated by both as it gave them an opportunity to interact without needing to necessarily solve a problem. We hope that our guests (and students) see these exchanges as a valuable source of inspiration and to enrich one’s own understanding and approach—whether that be problem-solving, critical, or conceptual. Overall, we feel that it is important for universities, teachers, and students to value interdisciplinary learning beyond the problem-solving frame.

Another takeaway that we had from our experiences with podcasts and interdisciplinarity, which we also tried to bring out in classroom discussions, is about the level of contestation between the disciplinary exchanges. Very often teaching interdisciplinarity focuses too much on common ground and integration. But contestations and a lack of travelling are equally important to understand and even value in some cases. Here we found the *scope of a discipline and its relation to each other* as a crucial factor in better understanding interdisciplinarity. Sometimes it felt like friction was more likely to occur between scholars who came from rather similar fields. This was evident in the episode on War: although from different fields, the two fields (international humanitarian law and conflict studies) are closely related. One guest was advocating for the use of the concept of war, while the other was not. Due to the closeness of their fields, this divergent viewpoint mattered, as it would impact how other scholars working in their field view and understand their work. With very contrasting disciplines who may not encounter one another, it seems like difference was more easily accepted and

even provided a space to allow for pure curiosity-driven exchanges. For example, in the episode on Equilibrium, with a chemist and economist, there were fundamental differences and similarities. Yet, because their perspectives on the notion of equilibrium will not impact the other, the scope for differences was experienced as interesting and not potentially confrontational; it is not something that they would have to address in their work. We saw a similar case with one of the student pairs. Although from different faculties (Science and Social Science), the science student had a background in the social sciences as well, and it was thus rather easy for him to make the disciplinary shift. His disciplinary grounding was thus more diverse and in line with that of his counterpart. This allowed them to find common ground more easily and collaborate.

Finally, reflecting on our experiences, we realize how much we have been learning while doing both in the making of the podcast and in our teaching. Active learning is not just important for students. It is equally important for teachers. Actively experimenting with podcasting and podcasting in education, around interdisciplinarity, has made us better scholars and educators. And, just as with students, reflection is a key part of any active learning process. There are many things that we would also do differently. For example, because we were largely drawing on our own university network, the selection of our guests could have been more diverse. There is a large scope for awareness and improvement here and something we are taking on board for season 3. For us, podcasting has unquestionably been a ‘fun and enjoyable activity’ (Markman, 2012: 557): in addition to expanding our knowledge on certain concepts and the dimension of travelling, it has also been a way for us to engage across disciplines and has given further insight into the everyday workings of academia.

CONCLUDING REMARKS

When we started, our aim was to do a few episodes and see how things went. We never imagined that so many scholars and students would find our conversations useful. At the time of writing, we have over 5800 downloads, and as also discussed by Markman (2012), were thrilled by the positive feedback we received. We are now looking into a possible third season and hope to share our experiences around podcasting, interdisciplinarity, and teaching with other teachers and educators beyond the geographic borders of the Netherlands. We believe there are boundless possibilities around podcasting as a method of teaching and learning how to do interdisciplinarity and hope to see it grow as a teaching tool in the years to come.

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