

# Pedagogical reflections from a PhD course in ageing – How to facilitate preconditions for resonance?

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## Abstract

This article is based on an interdisciplinary PhD course on ageing societies. The course brought together researchers, practitioners, and PhD students representing diverse welfare regimes and scientific traditions. It departed from the assumption that learning is a process involving both cognitive, emotional, and social dimensions. It was inspired by three collaborative learning theories and contained a number of non-traditional learning activities.

The students' motivation during the course was exceptionally high, and as teachers and organisers we became interested if this could be understood through the theory of resonance pedagogy.

The article presents parts of the course documentation. Activities and students' responses are described and discussed in relation to the pedagogical inspirations. Rosa's resonance pedagogy is used as a theoretical framework in a final synthesising discussion.

Diversity in scientific orientations, national backgrounds, learning activities, and using collaborative pedagogical thinking can support a learning environment with potentials for resonance.

## Introduction

This article is based on an interdisciplinary PhD course on ageing studies, "Ageing and demographic changes in late modern society", organised as part of the AgeSam® project (2019-21). The main aim of AgeSam® was to create an international course for PhD students that would not only provide the students with critical knowledge of topics and challenges in relation to an ageing society. The intention was also to bring together researchers, practitioners, and PhD students from different national backgrounds, representing diverse welfare regimes, to discuss how we can research these topics and challenges. The course provided theoretical and methodological perspectives on research in ageing societies stemming from the field of sociology and the humanities. It focused on developing the students' capacity to reflect upon key concepts and theories, mixed methods, and qualitative approaches. The PhD students' research and fields of interest were integrated into the course.

Twenty-three doctoral students from Sweden (5), Finland (5), Denmark (7), Poland (2), Belgium (1), Netherlands (1), and France (2), representing 16 universities, attended the course. The participants' research areas covered several subjects: Ageing Studies, Health Science, Social Work, Nursing Science, Psychology, Political Science, and Media Education.

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The design of the course was based on the preunderstanding that learning is a cognitive, emotional, and social process (Illeris 2003) and inspired by the main points of three collaborative pedagogical theories: Challenge-based learning (CBL), contextual teaching and learning (CTL), and the theory of communities of learning and practice (CoP). The approaches are interested in different dimensions of learning processes and thereby supplement each other. Challenge-based learning forms a multidisciplinary and collaborative approach that encourages learners to engage with real-world problems (Gallagher & Savage, 2020). As the course was interdisciplinary, and as we as organisers see ageing societies as a major challenge for welfare states, we aimed for a teaching that explicitly addressed the societal contexts, and the practises in eldercare. Contextual Teaching and Learning underline the importance of the connection between academic content and real-life practice. CTL argues that contextualisation provides meaningfulness in learning processes and that contextualisation should also be in relation to the everyday life of students (Hudson & Whisler, 2007). The idea is that applying new knowledge to one's life fosters motivation. Our former experiences as teachers told us that relating subject matter to the life of students when possible is a key to raising engagement. Whereas CBL and CLT do not especially focus on the social dimensions of learning, we found this dimension in the theory of Communities of Learning and Practise (Wenger, 1998).

In all three theories, learning is understood as having the potential to enable learners to understand themselves from a broader perspective, strengthen their professional identity, and act on their new knowledge. These ideas are reflected in the concrete course activities, organisation, and aims for learning outcomes. As teachers and organisers, we found the students' motivation during the course to be exceptionally high, especially considering that it was held virtually due to COVID-19. The students were in full presence throughout all scheduled days. We had a continuous dialogue with the students, not only focusing on the scientific content but as well on their experienced participation. The formal evaluation reflected their active engagement, as several students expressed that the whole course made a substantial contribution to their personal and professional development. As teachers, our impression was that an open curiosity characterised the interactions between teachers and students as well as among the students. We became interested in understanding how this could be explained through pedagogical theory.

While the abovementioned theories informed the design of the course, we did not find that they fully supported an understanding of the enthusiasm we experienced among the students during the course. Reading Rosa's theory of resonance pedagogy after having held the course, we wondered whether our experiences could be understood through this lens. We found that his theory was able to integrate aspects of the theories that informed the design of the course, but it also provided a more abstract, overall understanding of the potential of engagement in learning. We, therefore, chose to apply Rosa's theory of resonance pedagogy as a framework for a discussion of dimensions of and activities in the course (Rosa & Endres, 2017).

We will focus on the non-traditional learning activities that were particularly informed by the chosen theories. These activities, of course, only constituted parts of the course, which also consisted of traditional activities such as lectures, preparatory readings, and a written exam. As it is in connection to the non-traditional activities, we especially find expressions of student engagement, we see these as relevant to explore in order to understand how teaching could provide potentials for open axes of resonance.

## **Aim**

The aim of the article is twofold: 1) By describing the design of the course "Ageing and demographic changes in late modern society", its non-traditional learning activities and its pedagogical inspirations, we aim to provide suggestions as to how higher education can advance students' knowledge of complex societal challenges in

contemporary ageing societies, 2) By reflecting on selected documentation generated during the PhD course, we discuss the course through the perspective of Rosa's theory of resonance pedagogy.

### Research question

How can diversity in scientific and national backgrounds in combination with non-traditional learning activities in the design of a PhD course in ageing studies facilitate a learning environment with potentials towards open axes of resonance?

### Context

#### *The AgeSam® project*

The overall goal of the AgeSam® project was to create a course at PhD level focusing on research in ageing societies and on the multiple, interwoven aspects of ageing, which we as organisers think of as wicked problems (Riva et al. 2014; Rittel & Webber, 1973).

The course was developed as part of the AgeSam® project during 2018-2021<sup>2</sup>. The project brought together researchers and practitioners from eldercare with different national backgrounds to discuss how we can teach and research into the challenges and opportunities that ageing societies represent<sup>3</sup>. The aim was to create a course for PhD students with an interest in ageing research who came from the humanities and social sciences and from different national contexts. The course actively integrated the PhD students' research projects and focused on developing their ability to reflect on central concepts and theories within ageing research, as well as introducing different theoretical and methodological perspectives on research into ageing societies.

AgeSam® included researchers from Denmark, Sweden, Finland, Poland, and Lithuania and was financed by Erasmus+ funds, targeted at transnational educational development. The researchers not only represented different professional disciplines but also societies with different welfare logics (Esping-Andersen, 1990). This gave us, as project participants, an awareness of the diversity in which ageing takes place and how eldercare is organised within different welfare regimes. In addition to the field of research and higher education, practitioners within eldercare participated in the project. They contributed to the development of the course and with 'real life' cases that they presented as part of the teaching.

This broad representation was intended to ensure awareness of the diversity of ways ageing takes place, and eldercare is organised while also making the course interesting for students with different national backgrounds. A key motivation for interdisciplinary collaboration is that multiple perspectives can lead to more holistic research and solutions, which are particularly necessary for complex problems (Frank, 2017; Lam, Walker & Hills, 2014).

### Design of the course

In the following section, we describe the design of the PhD course and select course activities.

The course had three parts: an initial part (number 1 in Figure 1), an intermediate part (numbers 2-5 in Figure 1) and a final part (Individual assignment in Figure 1).

The intermediate part of the course took place over five full days. Each day focused on a different topic: cross-border collaboration, care work, dementia and research ethics, technology in care, and opponent sessions (Figure 1).

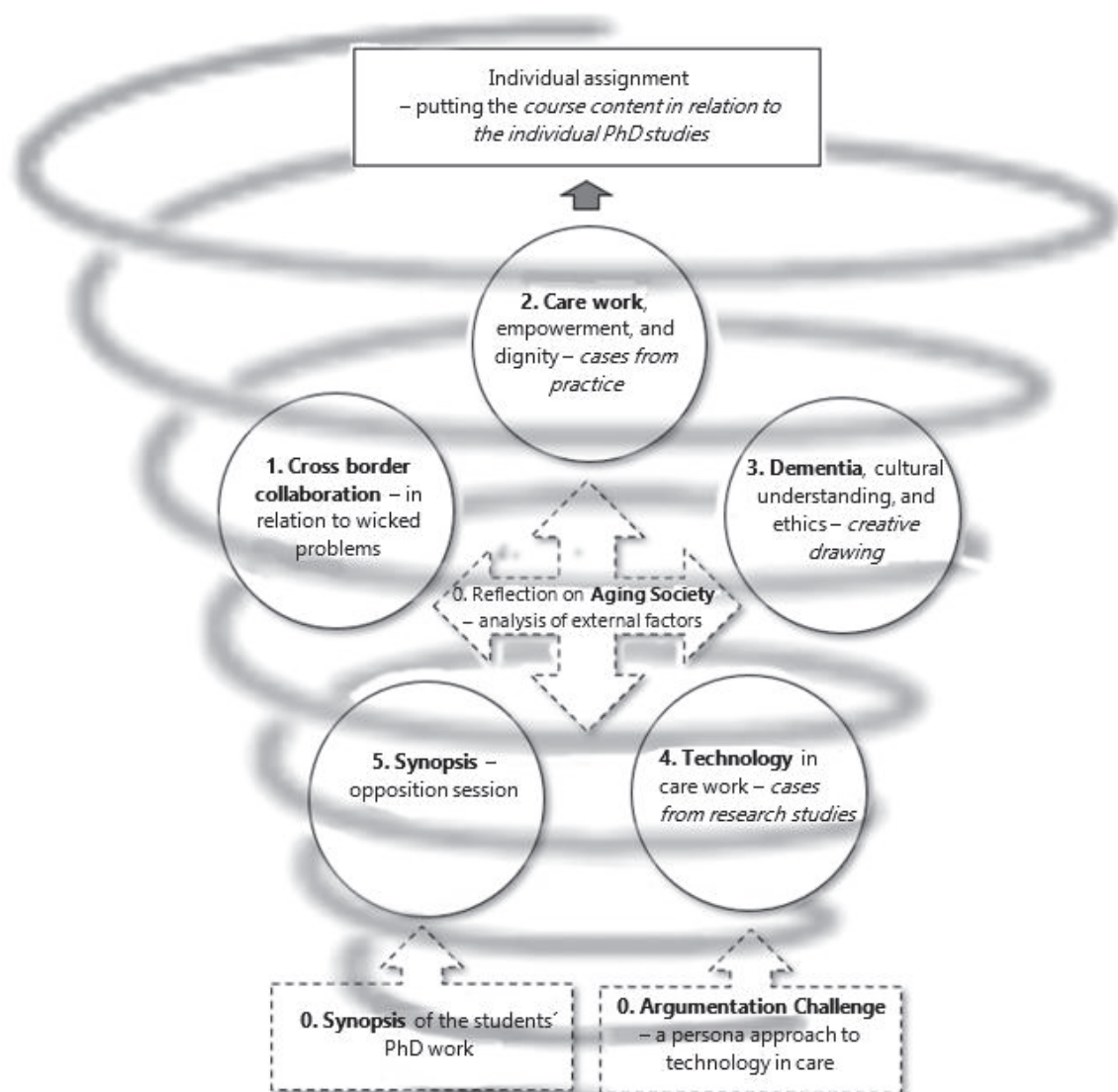
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<sup>2</sup> <https://erasmus-plus.ec.europa.eu/projects/search/details/2018-1-SE01-KA203-039040>.

<sup>3</sup>The authors thank all researchers and practitioners involved.

Before the intermediate part, students were asked individually to collect external factors relevant to an ageing society, which they reflected on in an online meeting in the initial part (0 in Figure 1). The students also had a group task, the Argumentation challenge (0 in Figure 1), where they undertook and discussed different perspectives on technology in eldercare. Results from the exercise were presented during day 4. The students submitted a synopsis of their research in advance (0 in Figure 1), which was discussed in relation to the course content on day 5.

The course was completed with an individual written assignment and exam, where students had to place their own research in relation to aspects of the course. An external examiner reviewed each paper and provided feedback and grades.



**Figure 1:** Overview of the course design

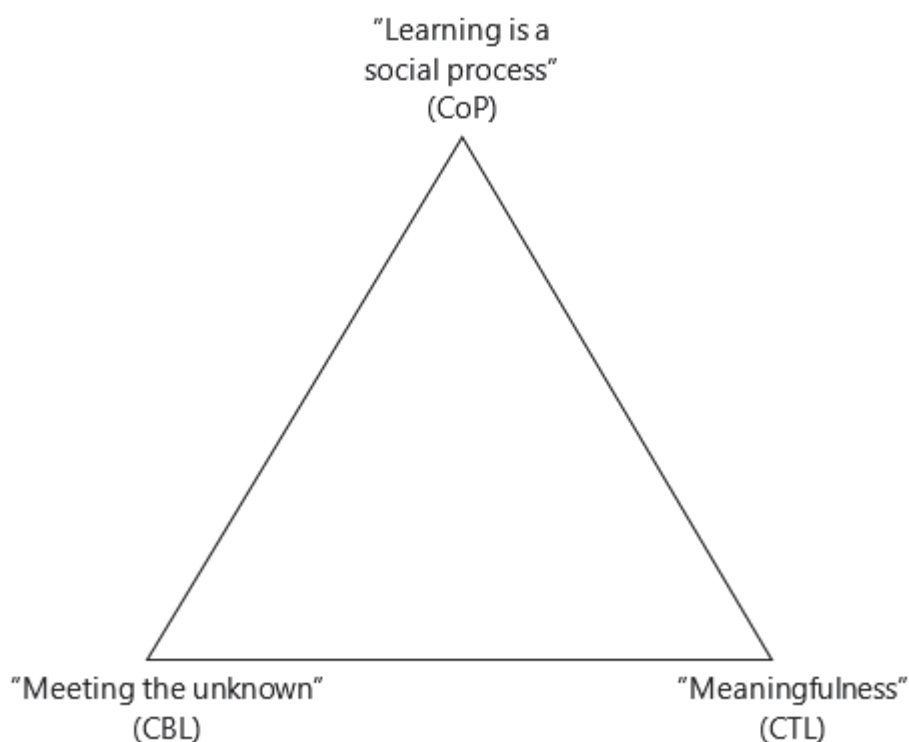
## **Pedagogical inspirations**

The course design was based on the basic understanding that learning consists of intertwined cognitive, emotional, and social processes taking place within a societal context (Illeris, 2003). Additionally, we were inspired by challenge-based learning, contextual teaching and learning, and the theory of communities of learning and practice, theories which informed both the initial planning of course content and the concrete design of the course and its activities. The inspiration from challenge-based learning (CBL) underlined our intention to present the students with aspects of problems connected to ageing societies. For instance, lectures presented different and contractionary theories of ageing. CBL argues for aligning theories, methods, and practices to provide learning experiences and generate preparedness to meet unknown future challenges (Bornemark, 2018; Anonymised; Christersson et al., 2022). CBL considers students as 'already knowers' in the sense that their lives and thesis work are involved in dimensions of societal challenges, and they, therefore, have an immediate impression of these. The design, therefore, aimed at introducing the students to unfamiliar situations and to supplement and question the students' already acquired knowledge to make them produce new knowledge and skills, thereby providing conditions for students to be change agents. A concrete example of this was the argumentation challenge, which forced students to take on new attitudes towards technology in eldercare.

Contextual teaching and learning (CTL) led to the aim of establishing connections between academia and the real-life context. We, therefore, worked with cases from a specific municipality representing general challenges in eldercare as we expected these would bring a sense of meaningfulness in relation to field practice. The real-life cases were presented by municipal counsellors, who also facilitated the discussions with students in cooperation with the teachers. CTL introduces content using various active-learning techniques designed to help students connect what they already know to what they are expected to learn and construct new knowledge from the synthesis of this learning process (Hudson & Whisler, 2007). We, as teachers, sought to establish the connection during the discussions, where we asked for the students' knowledge of eldercare challenges in their respective national contexts.

The theory of communities of learning and practice (CoP) suggests that learning in groups should be key to professional development (Anonymised). When in groups, students gain new insights from each other and arrive at common definitions for further collaboration; here, the partners involved are equally responsible. The stimulation of being in a community of reflection and learning practice (and culture) may create a framework for innovative learning through collaboration, especially when students share experiences related to their different competencies and frames of reference (Bjerregaard et al., 2018). This theoretical inspiration made us organise the course with several group tasks each day and was one of the reasons behind working with opponent sessions based on the students' synopsis.

We used the three theories as navigation points when planning the learning activities (Fig. 2). In the following presentation of selected course activities, we explain and elaborate further on how the theoretical perspectives were translated into concrete learning design. Limitations and critiques of the three sources of inspiration will be discussed in the discussion section.



**Figure 2:** The three pedagogical inspirations of the course

## Method

We explore and interpret material from the course, which is stored electronically as documentation for all participants. The material used in this article comprises notes from project participants, notes from team meetings, recorded teaching and discussion sessions, students' answers to exercises and group work, as well as their drawings, and, finally, students' evaluations of the course. The overall course evaluation was made in groups without the involvement of the teachers and was both discussed in plenary and handed in as a written document from each group. The material consists of approximately 25 hours of recorded sessions, 23 individual written student reflections on the preparatory task, written daily group-based assignments, evaluations from all participants, individually written exams, 18 drawings, as well as notes from each of the involved teachers on the last day of the course and from the teacher teams' reflections after the course.

The students were informed that their written data would be used as part of the course quality assessment, the academic quality assurance work and for research purposes. Students' reflective writing and outcomes were seen as an exercise in learning scientific concepts. The written documents provide a window into the students' thinking (Alvermann, 2004). The authors may also be seen as participants in this study, with reference to our position as 'in-betweeners' (Milligan, 2014). We had several overlapping roles both formally and informally in the process: as organisers of the course, as teachers, as evaluators, and, finally, as researchers into the generated data. Even though we do not adhere to an ideal of the researcher as being 'objective' or 'neutral', we are aware that our position demands reflexivity in all phases (Alvesson & Skoldberg, 2009). All authors participated in developing, implementing, and evaluating the course. We all read the collected course material and discussed it to enhance the process of selecting analytically relevant material for this article. We decided to focus on five non-traditional learning activities, which particularly reflect the pedagogical inspirations for the course. We,



therefore, describe the non-traditional activities in detail in the following. Without neglecting the traditional activities such as lectures and preparatory readings, which were as well fundamental for the course, we understand the non-traditional activities *in combination* with the more traditional as especially interesting when exploring how a learning environment characterised by open axes of resonance can be facilitated.

The five activities:

- A. PESTLE and preparatory task
- B. Argumentation challenge
- C. Real-life cases
- D. Creative exercise
- E. Synopsis and opponent session

### **Selected course elements**

#### *PESTLE*

The course's preparatory assignment was inspired by the PESTLE model (Aguilar, 1967), which is used to analyse key political, economic, sociological, technological, and environmental factors. The model is in line with the approaches of both CBL and CTL, with its focus on the contextual factors of a given problem and suggesting concrete areas of relevance for an investigation of contexts. The purpose of the assignment was to increase the students' awareness that questions about ageing are embedded in wider societal structures. They were asked to explore topics chosen from population structure, immigration, social welfare structure, dementia, care work, and digitalisation, aiming at contextualising their own work and being able to share knowledge with fellow students. As an inspiration from CoP, they had to work in cross-national groups with this knowledge. The attention to similarities and differences between the national contexts made it possible to establish a common knowledge base and meant that the students met previously unknown aspects of ageing societies from the start.

On the first day of the course, a group session was held based on the PESTLE preparation. The class was divided into smaller groups and had a 45-minute session. There was no interference by tutors during the discussions. The preparation formed a knowledge base that gave rise to the students arguing that our society is in no way prepared to tackle the challenges we face as an ageing society. They pointed to the need for systematic and holistic understandings and awareness in research of factors at both macro, meso, and micro levels. Inequality in ageing was a reoccurring theme; as a student said: *"Sources of inequalities need to be addressed from a macro level perspective"*. Their comments reflected an assumption that ageing societies had complex challenges and that the multiple levels are intertwined.

Central societal issues were addressed: lack of resources and social constraints that can lead to inequality in access to welfare; the recruitment crisis and shortage of nursing staff; loneliness and opportunities for contact across generations and via voluntary work.

Students expressed how our way of describing older people, both in research and in everyday life, can be stigmatising and that ageism has consequences for our societal capacity to handle the challenges. Some students connected the lack of resources and staff closely to cultural views of old age:

*"Ageism and adult centrism is a problem that society must address culturally. Society should engage in a process of redistribution of resources to tackle issues such as costs of care and pensions. Recruitment issues are getting worse and worse."*

Societal challenges were raised both in a positive way (there is potential for inclusion of older people, increased volunteering, and greater cooperation between sectors) and in a negative way (the huge shortage of caring resources and the risk of stigmatisation of older people).

Having students from the different welfare state regimes represented in the course provided nuanced perspectives on older adults. For instance, students from Eastern Europe suggested that family and social community are contributing factors to integrated social care, a relatively unusual perspective for the Nordic participants. One student declared:

*"The welfare state is not the only institution where people have to take care of older adults; this requires increased reliance on family members."*

In this way, students' discussions confirmed points from all three pedagogical theories: they contextualised knowledge, met unfamiliar attitudes, and did it in a community of researcher practice. Afterwards, students expressed how fruitful it was to learn from each other's experiences with research in ageing societies. The PESTLE task was meaningful because it made them aware of similarities and differences in national contexts. In this way, they gained a greater understanding of their own research area.

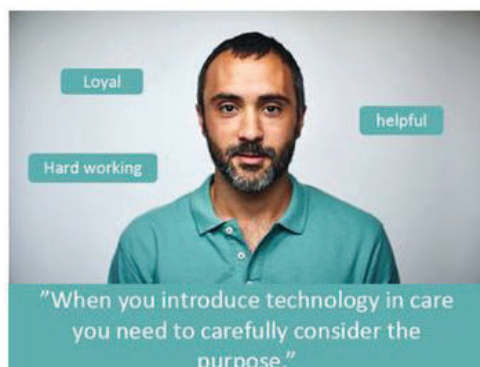
## **B. Argumentation challenge**

The argumentation challenge is an exercise consistent with CBL. It departs from problems recognised in practice, and it forces students to take on unfamiliar perspectives and try to argue for these. Many studies testify to the difficulty of implementing digital technology in care (e.g. Kapadia, Ariani, Li, & Ray, 2015). One reason for this is a lack of deep understanding of care recipients' needs and how technology can support them in different situations (Ko, Wagner, & Spetz, 2018). To remedy this, training is required to broaden and deepen the understanding of the possibilities and shortcomings of technology in different situations. The purpose of the argumentation challenge was to make the students view technology from different perspectives, to discuss problems of the use of digital technology in eldercare, and to achieve a professional approach to researching digital technology in care.

Inspiration was taken from personas and role-playing, approaches that have been successfully used to create empathy among students (Bearman, Palermo, Allen, & Williams, 2015; Blanco, López-Forniés, & Zarazaga-Soria, 2017). A persona is a fictional character that represents a group of people. The personas presented were based on interviews with staff members of a residential care home in Sweden merged with fictional elements. The students were presented with seven personas, five representing staff members in eldercare and two representing residents. Each persona was presented with a character sheet (Fig. 3).



# Peter Nielsen



AGE 35  
OCCUPATION Care assistant, 75%  
LOCATION Home care  
STATUS Married, 2 children  
5 and 8 years old  
EDUCATION School and some short courses  
in care science

## SCENARIO

"I have worked as a care assistant for 2 years now. In my home country I was a car salesman. I really like my new job as I feel I make a difference. I just work part time, but I am aiming for 100% in the future. I work in a home care unit where most of our users lives remotely. It means a lot of driving between the visits. I help them with different things like personal hygiene etc. Sometimes I work extra during nights. Then I usually helps the users to go to bed and checking up on them during the night."

## MOTIVATIONS

Incentives  
Fear  
Achievement  
Growth  
Power  
Social

## GOALS

To make sure the seniors have what they need.

## PSYCHOGRAPHICS

- Enjoys talking to the seniors.
- Likes to help in different ways.
- Hates to see how lonely some seniors are.
- Prefers to work alone.
- Tends to prioritize others before himself.

## EXTRA

## PERSONALITY

Extrovert Introvert  
Sensing Intuition  
Thinking Feeling  
Judging Perceiving

## TECHNOLOGY

IT and Internet  
Software  
Mobile Apps  
Social Networks

## DEVICES

Smartphone and common laptop  
and phone at work.



Figure 3: Example of a persona

The students were divided into groups and assigned one staff persona per group. They had to role-play the persona in relation to the personas of the residents. The technology introduced was chosen to exemplify different types of technology in terms of complexity and interaction. The activity was new to the students; one student stated, "I appreciated the Argumentation challenge. I have never done anything similar." The unknown in this task has several dimensions: the type of activity, the personas themselves, and, in some cases, the technologies to take a stand for or against. Taking on someone else's perspective made the students reflect on, as they said, the "Importance of intergenerational changes and how technology can help us to transfer our understanding [of technology to old age care]."

In line with CTL, the learning activity was based on existing technology used in practice; this way of bringing the concrete context of eldercare into play was highlighted by some students in the evaluation:

*"Especially looking at the digital components and how technology can support us was valuable".*

The advantage of taking a perspective from a persona is that different angles can be explored without revealing oneself and one's own opinions, which makes it safe to discuss issues which often bring on strong opinions. The following quote from a discussion on robots and electronic pets shows how the students reflect on the persona and his attitudes:

*"We have a little disagreement with Peter Nielsen [one of the personas], as we think he prioritises the seniors and their well-being and rather than looking at the issue of it being a fake thing [a robot pet], he likes to*

*help others in different ways. Also, we are not sure whether this option is only for cognitively weak people if it can offer good company to anyone."*

When presenting their discussions from the argumentation challenge, students demonstrated revised views on the meaning of technology in eldercare and touched upon ethical dilemmas in the use of technology (Doron, 2007). They had met previously unknown aspects of the use of care technologies and discussed these with fellow students, which broadened their perspectives.

### **C. Real-life cases**

The students were presented with and discussed real-life cases. The use of real-life cases was inspired by the focus on contextualisation central for both CBL and CTL. The cases represented actual challenges in the field of eldercare and stemmed from five of the countries involved in AgeSam®. They provided insight into how collaboration between research and practice can contribute to improved knowledge and suggest solutions to problems faced by elderly people and the care sector.

The Swedish case dealt with staff recruitment challenges and was presented by leaders from a Swedish municipality. It touched upon meso perspectives regarding the municipalities' attempt to include care workers with an immigrant background and macro perspectives such as care immigration, care drain, and global care chains.

In evaluating the course, students expressed that it was meaningful to gain insights into practical reality. One student said:

*"I enjoyed the mixture of themes and subjects, including literature. I also appreciated the involvement from the field of practice."*

This is an example of students highlighting the fruitful combination of traditional and non-traditional learning activities.

Even though most of the students were working with empirical material, the examples of how scientific knowledge could be integrated into the development of the care sector seemed to give them a new sense of the importance of their work.

### **D. Creative exercise**

In the creative exercise, the students were encouraged to draw their own projects and reflect on the drawings in groups. The drawings were not analysed, as the exercise aimed at opening new perspectives in the students' own awareness of their material and field of research. Through drawing, the cognitive-rational mode of relating to one's research is paused briefly, enabling alternative interpretations. When working with images, other kinds of knowing than rational, reflective knowing may take place (Douglas-Jones, 2021). The exercise was inspired by CBL and thought of as a challenge to enable the students to meet formerly unknown aspects of their research topics.

First, students individually made a drawing of their field of research. Then, they presented their drawing to group members who inquired about it. Finally, the group wrote up interesting points from the exercise. This was rounded up by a plenary session, where students shared experiences and voluntarily presented their drawings. The drawings illustrated the complexity facing researchers in the field of ageing, ranging from the societal level to the private homes of older people, from the political to the subjective. Several drawings contained an

emotional tone, representing love, hope, and a communal spirit on the one hand – and sorrow, despair, and loneliness on the other. The drawings centred on three themes:

1. Care needs, body care, relatives and dependency, experiences of loss.
2. Care arrangements.
3. Stigmatisation of older people and the multiple ways of ageing.

1. One student drew an old couple at home, the wife pushing her husband in a wheelchair. Her back is bent, and the man is crying. A heart is drawn in between them. On the wall, there is a watch and shelves with diapers and medicine. There is also a picture of two people standing up, perhaps illustrating the couple as they looked previously or their married child. Outside the house, we see a hospital, a taxi, a building for NGOs, and a respite care home.

The drawing forms an illustration of old people's dependence on relatives when they become ill or disabled and the challenges when the relative is also old. It adds nuances to the cultural image of the older person as needing care and as a burden to society. As the student said in the whole-group session:

*"Older adults also give care, they do not only receive care".*

Time has passed, and there is still love between them but also sorrow. The student is aware of the healthcare system and the NGOs; different organisations become part of an old person's life. The respite care home can be interpreted as an illustration of the final solution when the wife can no longer take care of her husband. This touches upon interdependence and the emotional aspects of becoming old.

2. Another student imagined body care in relation to becoming old by drawing a woman lying in bed with several bathroom objects around her: toilet, shower, washbasin, mirror, napkin, and hairbrush. Between these objects, paragraph signs were spread out as an illustration of the challenges legislation places on care workers, who must help integrate the different objects in the woman's life.

This drawing gave a sensation of confusion – nothing seemed to be in its right place. It thus illustrated the difficulties of being old and bedridden, unable to manage even everyday body care routines. It touched upon care arrangements and the complex layers of governance of healthcare.

3. Stigmatisation of old people and the multiple ways of ageing was a recurring theme. One drawing showed a road warning sign with a man in bandages. The sign read: Frail people. Next to this was a beam with three arrows and the words "ageing trajectories". The arrows pointed to (1) a man running and the words robust/active ageing, (2) a man with a stick and the words frail ageing, and (3) a man lying in bed with the word dependence.

The drawing illustrated a societal stigmatising view of old people – as someone to be warned about. It reflected an awareness of ageing as a trajectory with different potential outcomes, i.e., that people age in multiple ways, ranging from the positive image of active ageing to being bedridden and dependent.

The students' drawings reflected the idea of ageing societies, demographic changes, and the unmet care needs as wicked problems and challenges that affect us all. As one student said in the course evaluation:

*"It raised my awareness that we are all affected by the phenomenon of ageing and how it comes into our own contexts".*

#### **D. Synopsis and opponent session**

Before the course started, students had to submit a synopsis based on their research question. The diverse research questions were reflected upon as an integral part of the course and developed by each student

throughout the course. Synopsis writing is an often-used exercise in connection to PhD courses, but here we, inspired by principles from CoP, aimed to establish a community of practice through the students' and teachers' co-work with the synopses. Therefore, on the final day of the course, there was an oral, group-based presentation on each topic. Prior to this, a peer-review group process took place. The participants were divided into sub-groups, where they acted in pairs. Each pair discussed each other's synopsis, moderated by a teacher. The following instructions were given:

1. Read a synopsis of your colleague's research project.
2. Describe the problem and main topic/ideas of the synopsis.
3. Communicate your questions and thoughts to your colleague to inform the research project.
4. Indicate what challenges you think the author of the research project faces.
5. Tell what you learned from the synopsis of your colleague's project.

During the opponent session, it became clear that the students were highly motivated by the close integration of their own project into the course.

They agreed that working on their projects during the course had given them a higher level of reflection. One group stated in the plenary:

*"The very close connection to our own synopsis throughout the course was very helpful, and the course made us further develop our research questions".*

Another student elaborated on this and underlined the value of meeting and working closely together with colleagues:

*"To connect with other researchers and academic people from other disciplines that you can reach out to".*

Whereas the opponent session was thought of to enhance the students' awareness and reflections on their research in relation to a broader academic field of ageing research, it also proved to enable a social process that could lead to a professional network.

### **Theoretical reflection**

In this second part of the article, we reflect on the activities and the collaborative learning theories used through the perspective of Rosa's theory of pedagogical resonance. As resonance is an abstract concept, asking students whether they experienced resonance and when and why was impossible. As researchers and teachers, we had to explore the signs we found in the data that suggest learning where students are open and reflexive towards the content, their fellow students, and the teachers.

We first present Rosa's theory on the pedagogy of resonance. We then summarise our reflections on the learning activities and how they relate to the pedagogical theories and show how they can be seen as pointing in the direction of a learning environment characterised by open axes of resonance. While Rosa underlines that resonance cannot be planned for or controlled, he is also aware of the necessity of some elements of control for resonance to take place at all. He speaks of four dimensions of controllability, and if one or more of these exist, 'semi-controllability' occurs. Only if all four dimensions are controlled, he argues that the urge to control stands in its way of resonance (Rosa, 2020). The four dimensions are to make something visible, to make something achievable or accessible, to be able to rule or master something, and to make something utilisable. In connection with education, the first dimension is a prerequisite; the teaching must make something visible for students to draw their attention to something before any learning can take place. Therefore, we argue that

pedagogical reflections regarding both learning content and activities are important for the establishment of spaces for learning with potential for resonance.

### **Rosa's theory on the pedagogy of resonance**

Hartmut Rosa develops a critical theoretical analysis of late-modern society. Due to the acceleration of all life processes, Rosa believes that late-modern humans are largely alienated from both the outside world they live in and their own inner world (Rosa, 2019).

In Rosa's view, education should offer opportunities for alienation to be mitigated. Learning has not only increased mastery of knowledge as a goal but, more importantly, an openness to 'the other' or 'the foreign'. Openness is a prerequisite for this kind of learning, as it only takes place when one's horizon of understanding is broadened (Rosa & Endres, 2017). Rosa talks about axes of resonance: between teacher and student, between student and academic content, and between teacher and academic content. The axes are equally important to establish potentials of resonance.

The theory can be used to analyse how features of pedagogical situations facilitate or constrain the occurrence of resonance. Rosa emphasises that his understanding of resonance differs fundamentally from the concept of competence: "*Competence is equal to mastery, while resonance refers to an indulgence in the world: thereby I also transform myself*" (Rosa & Endres, 2017, p. 20, author's translation). By indulgence, Rosa means that the learner is existentially touched and thus changed. Thus, Rosa's concept of resonance assumes that learning, which also affects the learner's subjectivity, can take place in situations where we, as humans, let ourselves be touched. Our interpretation is that Rosa's conceptualisation of learning is closer to an idea of learning than what is contained in the German concept of "Bildung".

Rosa states:

*"School becomes a resonant space when it succeeds in opening the three resonance axes between students, teachers, and academic content. And this takes place through social relations"* (Rosa & Endres, 2017, p. 30).

Rosa is aware of the atmosphere in situations in which learning is expected to take place. He distinguishes between relationships that are repulsive and relationships that allow for contradictions of a positive nature. Resonance can be read in the engagement that occurs in the classroom. Felski (2020, p. 2) describes:

*"It [resonance] denotes a process of becoming attuned that forms and informs one's being in the world and that possesses bodily, emotional, and cognitive dimensions: those moments when something crackles or reverberates or comes alive"*.

When resonance occurs, an intrinsic interest is felt. The learning situation is characterised by an "*absence of effort that is experienced as an absence of self-coercion*" (Rosa & Endres, 2017, 55). In contrast, the learning subject encounters the world with indifference or even repulsion when resonance is not established.

Rosa highlights recognition as a fundamental human need. In the classroom, a struggle for recognition takes place, and almost everyone will experience existential anxiety about not being good enough. The teacher, therefore, has an indispensable role in recognising the individual student and her/his contribution. However, Rosa does not develop specific pedagogical approaches that can promote preconditions for resonance. His theory is to be considered as meta-based and abstract. It is, therefore, difficult for teachers to draw specific lessons from the theory. Rosa only sporadically substantiates his points with other educational theories, and we, therefore, argue that they must be integrated and elaborated with other learning theories dealing with the challenges of learning and teaching methodology in practice.

The synthesis presented below can be considered as a contribution to this type of theory integration.

### **Synthesis of learning activities and theoretical inspiration**

Based on the presentation of the course's learning activities and their pedagogical background, we point out elements that can support the establishment of a learning space characterised by processes towards open axes of resonance.

The PESTLE preparatory task brought together students from different academic fields to share knowledge on ageing and eldercare in their respective countries. They became aware of similarities and dissimilarities between welfare regimes. Despite students' diverse backgrounds due to societal structure, capacity, and welfare, some basic, universal views on ageing societies were expressed. For instance, societal challenges had to be studied at the micro, meso, and macro levels. The students reflected on their own and others' experiences and knowledge, thereby meeting the unknown.

The purpose of the argumentation challenge was to broaden the students' horizons of understanding by letting them identify with different personas, thereby encouraging them to be open and take on perspectives other than their own. Resonance could be read in the engagement that, according to Rosa, occurs in the classroom as openness to 'the other'. This openness is a prerequisite for transformative learning.

As Felski (2020, p. 2) explains:

*"Resonance, then, is not an emotion, but a relation; not a feeling of warmth or tenderness or care, but a heightened sense of aliveness and connectivity that can assume varying forms. It offers a way of thinking about intellectual engagement that stresses transpersonal attachments rather than personal feelings".*

When students worked in groups, where different experiences from a range of cultures and welfare regimes were discussed, this resonant intellectual engagement could arise.

The real-life cases contributed to an understanding of the field of practice, underlining the practical relevance of the knowledge the students were producing.

The whole-class session proved that the creative exercise had been meaningful and had introduced new insights. Reflections from the groups centred on how surprising and fruitful it had been to work in this unusual way. Most students shared their drawings on the screen, even though this was not an obligatory part of the task. We interpret this confidence as a sign that the course had succeeded in creating a trustful atmosphere. With Rosa's concept of *axis*, we argue that the axis between students and academic content was opened through the exercise. The students' reflections suggested that they had seen their material in alternative ways. One student who was working with quantitative methods said she suddenly realised:

*"My work is about real living human beings."*

Several of the drawings presented empathic images of older people. We see this as an illustration of resonance, as *"resonance can encompass different facets of intellectual engagement without pitching feeling against thought ...."* (Felski, 2020, p. 1).

In the opponent session, the students met other disciplines, scientific traditions, and national and cultural backgrounds by working on another student's project. The sessions aimed at making students realise their knowledge and develop their project's perspectives. Being a PhD student and showing your own work to an academic audience can often be a vulnerable situation. The teachers involved in the sessions, therefore, not only



focused on the content of the discussions but also on how the students worked together. The learning activities and their pedagogical inspiration are summarised in the following table (Table 1).

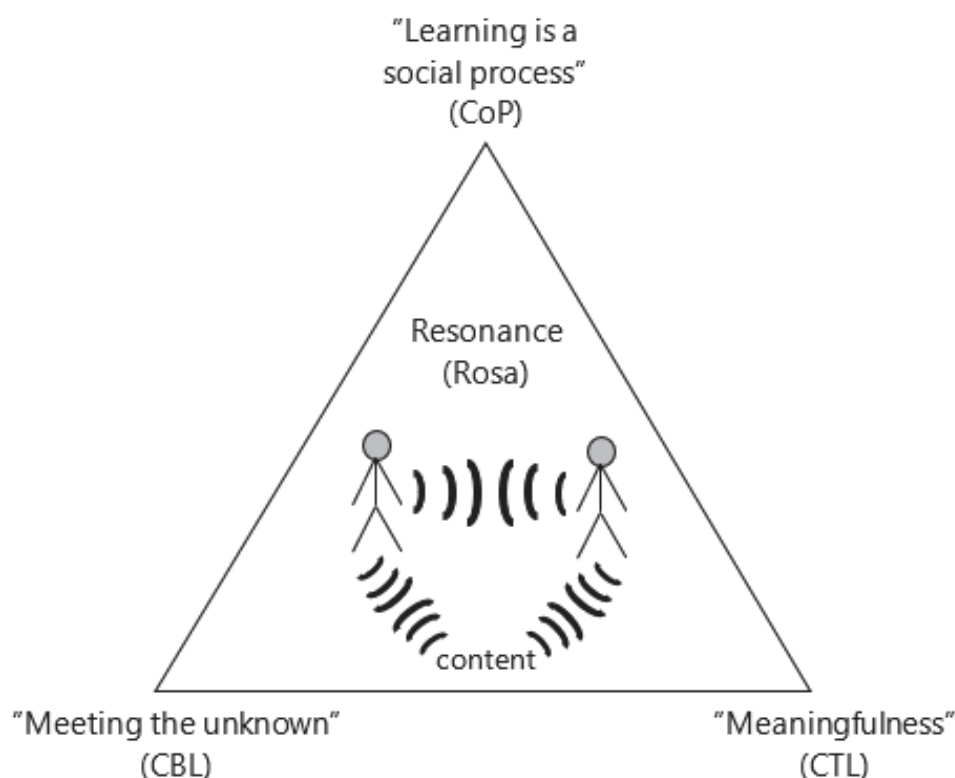
<b>Activity</b>	<b>Meeting the unknown, CBL</b>	<b>Meaningfulness, CTL</b>	<b>Learning as a social process, CoP</b>	<b>Process towards open axes of resonance</b>
PESTLE, including preparatory task	Societal challenge, micro, meso, and macro levels	Variables important for studying an ageing society. Current global environment indicators	Small groups, students with different perspectives	Reflection based on one's own and others' experiences and knowledge – openness towards other students' knowledge of welfare regimes and demographic conditions in other national contexts.
Argumentation challenge	To take on someone else's perspective	Exercise based on technologies and personas that are empirically constructed	Groups explore a perspective from a persona without having to reveal themselves and their opinions = confidence in the social setting	Revised views and questioning assumptions and stigma about being old and working in eldercare - creating a safe space, preventing vulnerability in the group.
Real-life cases	Meeting practitioners	Relating to reality	Discussing cases from different angles with colleagues	Awareness of relevance and importance of own knowledge production in relation to practise.
Creative exercise	Visualise one's project in a non-verbal way	Provide insights which are not presented in written language. Renewed emotional focus	Sharing the focus of one's project, receiving emotional feedback from other students	Openness and transparency in own self-reflection, sharing insights into emotional qualities of one's own research project, with



				teacher and fellow students, awareness of one's role in scientific production.
Synopsis and opponent session	Through the opponent session, meeting other disciplines, scientific traditions, and national and cultural backgrounds	Development of one's own project	Realising that I know things that others may or may not know - I share my knowledge and perspectives and meet others.	Sharing of knowledge with other students and teachers. Trust in presenting own work for an unfamiliar audience. Being open towards other comments and reflections. Leading to development of one's own perspective and PhD project. Mutual recognition.

**Table 1:** Summary of outcomes from activities

Based on the synthesis of learning activities and theoretical inspirations, we argue that careful and reflexive use of different but compatible pedagogical theories and specific non-traditional learning activities potentially support processes toward open axes of resonance. In the figure below, we integrate the concept of resonance in the triangle figure presented earlier.



**Figure 4:** Relationship between the cornerstones in the learning approaches and Rosa's theory

## Discussion

It seems contradictory to argue that online learning can hold potential for open axes of resonance. Resonance is, in Rosa's theory, a both emotionally felt and cognitively perceived phenomenon, which, for immediate consideration, calls for a bodily presence for both teacher and student. However, Nomfundo (2022) argues in a review of the literature on "...the effective pedagogy for online teaching and learning at Higher Education Institutions throughout the world during the COVID-19 pandemic" that collaborative learning holds considerable promise in Higher Educational Institutions also when teaching and learning is online. Online teaching and learning are considerably more challenging for students, she argues because the online environment necessitates new kinds of communication and interaction. This calls for a new role of the teacher as a facilitator and supporter of learning processes rather than only presenting knowledge (Herrera-Payo, 2021). Morgan (2020) also highlights collaborative learning as relevant for online courses, as it is often seen as beneficial because it improves the interaction between students and instructors while also creating a sense of social presence. When there is no direct human interaction in distant learning, this sensation can aid in decreasing student loneliness, which is especially important during traumatic times, Morgan states. Experiences of loneliness due to the lockdowns were expressed by several students, especially in connection to their drawings. In this specific situation, even online contact with other students and teachers, regularly over more than a week, might have broken the atmosphere of isolation and, as we argue, initiated processes towards open axes of resonance.

While these reflections support the use of collaborative learning theories and activities inspired from these also in online teaching and learning, they do not answer the question whether inspiration from other pedagogical theories could have led to a similar engagement. Both Problem-Based Learning (PBL) and Problem-oriented

Project Learning (PPL) appear to be relevant sources in this connection. However, it is beyond the scope of this article to discuss the differences between the approaches.

The three collaborative pedagogical theories which inspired the course have different roots and limitations. CBL was initially coined by the technology company Apple, and it draws on several other learning theories, among others PBL. It is now commonly used in higher education, but a review of patterns in research on PBL concludes that a critical, scientifically grounded approach towards learning is absent or marginally present in the papers reviewed (Leijon et al., 2022). We concede that this critique might be relevant to our article, too, as our aim was to describe and discuss activities which we see as in line with the approach, not to debate CBL. Leijon et al. (Ibid: 616) state that when CBL is used as a framework for educational interventions and not for societal impact, a central component of CBL is lost. We do not believe that our inspiration from CBL adheres to this critique, as potentials for societal impact of the students' learning and thesis work were present for us throughout the planning of the course.

Critics of CTL argue that while it can make learning more engaging, it may not always lead to the transfer of skills to different contexts. Students might be engaged and competent in contextualised settings but struggle to apply the same skills in more abstract or different situations (Jameson-Meedy, 2015). Based on the course documentation, we cannot tell, and, in retrospect, it might be asked if CTL did add dimensions to the pedagogical framework, which we could not have found in CBL as well.

CoP puts emphasis on the social aspects of learning, which we see as somewhat underrepresented in CBL and CTL. This dimension we experience is crucial for learning, as reflected in our initial reference to Illeris (2003) and the three dimensions of learning. In this way, CoP constitutes a necessary supplement to the other theories. As with CBL, we, so to speak, withdraw the theory from its initial context, as CoP originally focused on learning in apprenticeship-like settings. The theory has been widely used in higher education but is criticised for a lack of focus on power dimensions in learning, which both count for the hierarchy between teachers and students and for dynamics in groups of students (Farnsworth, V, Kleanthous, I & Wenger-Trayner, E (2016). There is, of course, always a risk of exclusion processes in group work. By taking responsibility as teachers for forming the groups and applying different principles for dividing the students into groups, we aimed to minimise this risk. With Rosa, we could say that we made the community of practice half controllable and thereby used our power as teachers in a positive way.

Finally, the synthesis made in this article can be criticised for not being grounded in a follow-up study of the students' learning outcomes after the course. Our reflections are limited to the implementation of one course in a certain time span. The study is explorative and comprises a limited number of students. However, taking this into account, the reflective results can potentially be transferable to other course settings, where the content may vary yet still be of a similar nature.

## Conclusion

The non-traditional learning activities, which were inspired by collaborative pedagogical theories, in combination with the diversity in scientific orientations and national backgrounds, facilitated a learning environment with the potential for processes towards open axes of resonance. Challenge-based learning, contextual teaching and learning, and the theory of communities of learning and practice were sources of inspiration that contained core elements that were constitutional for resonance. Activities inspired by these can, therefore, be understood as important in supporting a learning environment where open axes of resonance can evolve.

Without claiming that resonance can be planned for through teaching methodology, we interpret the selected course activities and the students' comments on them as signs that the course opened axes of resonance.

Especially when teaching subjects that can be defined as wicked problems such as ageing, diversity in learning activities, national and cultural backgrounds, and interdisciplinary theoretical and methodological approaches are relevant as no single perspective can fully lead to students' understanding of the subject. To endeavour for resonance in relation to learning about wicked problems is essential as there is otherwise a risk that students get overwhelmed by the complexity, leading to hopelessness instead of providing conditions for students to be change agents. However, it is necessary to further explore theoretical-based understandings of resonance in connection to PhD education.

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### Conflicts of interest

The authors declare no conflicts of interest.

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