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Principals' Professional Learning as Praxis-Oriented Change – Leading Digitalisation in Preschool Education

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Abstract

This article takes a practice perspective on professional learning to contribute through an empirical example of how professional learning can be arranged to enable change in and for professional practice, as well as for nurturing praxis. The theory of practice architectures is used to analyse the process of an action research (AR) in which principals investigated and changed their ways of leading digitalisation in preschool education. The theorising of the co-production of practices was used to visualise how the changes were enabled in this process, as the practices for professional learning and leading became interdependent through shared practice architectures. The findings describe how such a co-production of practices enabled a process in which the principals went from a technical to a practical approach to change, when leading digitalisation, which further resulted in a critical stance. This was a process that manifested professional learning as praxis-oriented change in which the principals' professional judgement increased.

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Introduction

That continuous learning is a fundamental component for developing or maintaining professional practices is an opinion that many agree upon (Stevenson, 2019; Wenger-Trayner et al., 2014). But why and how this is the case have not been equally established (Kennedy & Stevenson, 2023; Stevenson, 2019). These are the types of questions addressed in this article, which focuses on two specific practices within the ecology of educational practices (Kemmis et al., 2012): practices for leading (Practice A in Figure 1) and practices for professional learning (Practice B in Figure 1). The particular practice of professional learning (Practice B) in this study is designed as action research (AR). We empirically explore when and how these two practices become interdependent in the form of a symbiotic relationship based on mutualism, which means that the two practices are mutually dependent and contribute to improvements in each other (see the symbol at the bottom of Figure 1).

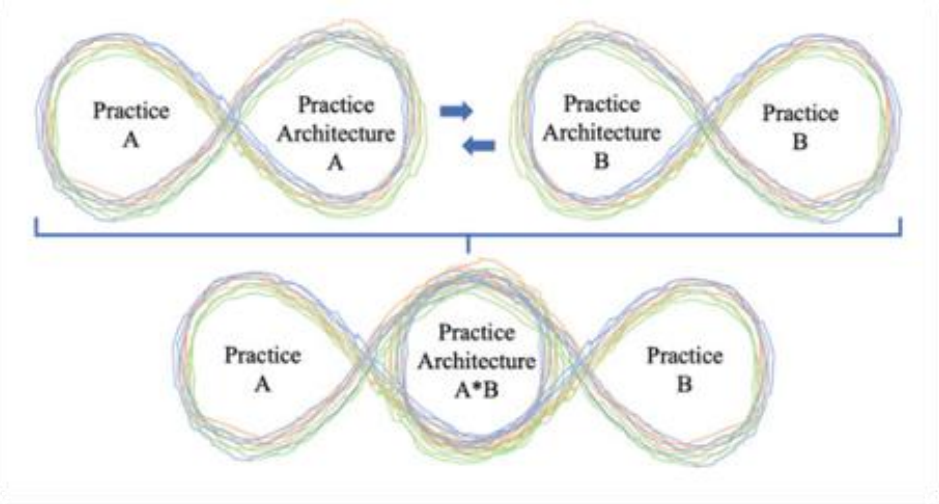

Figure 1. *Two Practices Becoming Interdependent Through Shared Practice Architectures (Kemmis, 2022, p. 122)*

Since the mid-1980s, a major ideological shift towards economic rationalism, now widely known as neoliberalism, has been clearly discernible (Rizivi, 2018: Wilkinson, 2021), and today, neoliberal thinking appears to be a dominating ideology beyond education (Heikkinen, 2018; Kennedy, 2014). In line with neoliberal influences, the discourses of professional learning have gone from a wide conceptualisation in the 1980s and 1990s, including situational, contextual and ecological perspectives, to the narrower, individualistic, decontextualised and outcomes-driven discourse of the last decades (Groundwater-Smith & Mockler, 2018; Hardy, 2012). These discourses affect how schools decide for teachers' professional learning. In particular, they have resulted in a rising number of pre-packaged professional development programmes (Hardy, 2012; Norlund & Levinsson, 2023) consisting of courses and activities

organised as temporary or recurring training days or workshops (Hardy, 2010; Norlund & Levinsson, 2023; Webster-Wright, 2009). Hardy (2012) described how these individualistic, technicist, and prescriptive approaches to professional learning are dominated by short-term, individual activities, allied to state-sanctioned prerogatives. We agree with Biesta (2007, 2019) that the current circumstance is not some evil plot but more the result of a line of intertwined events that step by step passed from being praiseworthy intentions to having problematic consequences, as is critically addressed in the following sections.

The neoliberal ideology has affected principals' professional learning as well, resulting in training programmes carried out in formal contexts, in which principals are expected to learn about how to carry through standardised methods. Such programmes are often initiated by school authorities (Aas & Blom, 2017; Hylander & Skott, 2020) or the local school administration (Liljenberg, 2021; Nehez, 2019). Meanwhile, the literature on principals' professional learning has shown that such arrangements usually do not lead to changes due to difficulties in transferring and implementing educational content from professional learning practices in principals' leading practices in their local schools (Forssten Seiser & Söderström, 2022; Huber, 2010; Jerdborg, 2022). In addition, research has shown that when demands for principals' professional learning is initiated by the authorities and local administration, changes are even less likely to occur (Liljenberg, 2021).

On a national level, the individualistic perspective on professional learning appears in the ongoing reform of a professionalisation programme for principals and teachers in Sweden. According to the proposition (Prop. U2022/02319, 2022), the reform aims at improving

teaching practices and the professionalisation of teachers and principals, as well as increasing the attractiveness of these professions. The proposition also includes a qualification programme for teachers based on individual merits (Prop. U2022/02319, 2022). Even though the aim of the programme is to improve educational practices, the strategy to do so is likely influenced by the current neoliberal discourse in Sweden. Hardy (2012) argued that a neoliberal system that encourages patterns of consumption, competition and the logic of individualism risks reducing professionals to consumers of development courses and promoting competition rather than collegiality. Hence, professional learning, based on an individualistic approach to professional learning may be counterproductive, as qualifications are measured in credits based on academic skills rather than professional judgement in practice. Also, to enable positive changes in society and to carry out the civic mission of education, practices for teachers' and principals' professional learning need to support and develop the capacity to question institutionalised habits and educational practices that conflict with democratic values, purposes and moral intentions (Francisco et al., 2023). This is the motivation for this study, which provides an alternative to those promoted in the neoliberal discourse.

This study takes an ecological and contextual perspective on professional learning, where professional learning is initiated based on the needs expressed by principals themselves.

Moving away from individualistic approaches, this study takes a practice perspective to study professional learning as changes in the complex of educational practices: students' practices, teaching practices, research practices, professional learning practices and leading practices (Kemmis, 2022). In line with Schatzki (2019), we argue that to manoeuvre changes within the ecology of educational

practices, teachers and principals need to take a critical approach to understand both the structures prefiguring the practices and the social dynamics changing them. By shifting the focus from professional learning as programmes for developing individuals to a practice-oriented epistemology, we offer an alternative to current approaches to professional learning contributing through an empirical example of how professional learning can be arranged to enable change *in and for professional practice* (Salo et al., 2024), as well as for nurturing praxis. Praxis is understood as morally committed professional actions (Kemmis & Smith, 2008, pp. 15–35). We do this by zooming in on the process of an AR in which principals critically investigated and explored how to lead digitalisation in preschool education. The following research question guided the focus of this study: How can professional learning—that is, enabling changes in and for practice and nurturing praxis—emerge?

The Swedish preschool and the call for digitalisation

The Swedish preschool is a public childcare service, including children aged 1-5 years. Since 2010, the Swedish Educational Act (SFS 2010:800) regulates Swedish preschool as the first level of the Swedish school system, with the twofold goal of helping parents combine parenthood with work or studies, and to support and stimulate children's development and learning. Although it is not compulsory, the majority of Swedish children attend preschool in early years (Nordberg & Jacobsson, 2021). The curriculum of Swedish preschool expresses fundamental norms and values, as well as goals and guidelines for preschool education, and emphasizes the importance of play in children's development, learning and well-being. As a juridical document, the curriculum states and provides guidance on the expected outcomes in terms of the preschool´s ability to stimulate

learning, development and children's play in a holistic view (Swedish National Agency for Education, 2018). Principals and teachers are responsible to translate these goals into daily activities in the preschool (Nordberg & Jacobsson, 2021). In Sweden, both preschool teachers and principals are obliged to undergo preparation programmes. The preschool teachers' training program is a three-and-a-half-year academic education. After graduating, the teachers apply for their teacher certification that authorizes teaching. Principals at all levels in the school system are obliged to attend The Swedish National Principal Training Program within 3 years from the employment. The program runs for 3 years, and provides 30 higher education credits.

Since 2017, digitalisation has been a key focus in Swedish preschool curriculum. Access to, and the use of, digital tools has increased in Swedish preschools, due to a national strategy for digitalisation (Ministry of Education and Research, 2017), visioning the Swedish school system in the forefront of using the opportunities of digital technology in educational practices. Further, digital technology was included as a compulsory knowledge content and educational tool in the Swedish national preschool curricula (Swedish National Agency for Education, 2018). The policies also state that preschool teachers are responsible for children being able to use digital tools in ways that stimulate development and learning. In addition, the policies express the principals' responsibility to create conditions for the teachers to learn how to use the opportunities of digitalisation in preschool education.

Method

This study is based on a critical participatory action research (CPAR) (Kemmis et al., 2014) in which 16 preschool principals, working in a

midsized municipality in Sweden, collaborated with a researcher (Author 1). In CPAR participants meet in collaborative dialogue (Carr & Kemmis, 1986) to take a critical perspective when constructing and reconstructing understandings, out of experiences from actions performed in practice. Changing practices requires transforming intersubjective spaces which is done by opening a communicative space were participants can reach intersubjective agreements about how to understand the world, mutual understanding of others' positions and perspectives, and unforced consensus about how to go on (Kemmis et al., 2022). In the current AR (Practice B in Figure 1) the participating principals critically examined and developed their ways of leading digitalisation in preschool education. The AR started in September 2021 and went on for almost two years and ended in May 2023. It followed a cyclic process of collegial meetings and individual actions carried out as part of the principals' leading practices in their preschools.

Thirteen of the principals and the researcher (Author 1) had been collaborating in a government-funded project; Collaboration Best School [In Swedish: Samverkan Bästa Skola], with the acronym SBS. A national turnaround programme for schools with challenges in reaching educational goals arranged as a tripartite cooperation between the Swedish National Agency for Education, a municipality and a university. When ending the SBS project, the researcher asked the principals how they were going to continue their work on school improvement. The principals explained that they needed to focus on digitalisation due to their responsibilities expressed in national policies; however, they found it challenging, as they did not know how to lead such a process. In response to the needs articulated by the principals, the researcher initiated the AR studied in this article.

Ethical considerations

Even though the collaboration during the SBS project was successful in many ways, it had ethical significance to clarify that the AR was neither part of the national SBS programme nor part of the principals' formal work tasks; furthermore, it was important to state that participation in the AR was voluntary. Therefore, a great deal of emphasis was placed on the initiation phase, which lasted for one semester. During the initiation, the researcher met all of the 16 principals currently leading public preschools in the municipality to inform them about the AR and allow them to raise questions. Later, the 14 principals who signed up to join the AR received written information about the research project, and written consent was requested from the participants, following the Swedish Research Council's guidelines (Swedish Research Council, 2017) and research ethics principles regarding research information, consent, confidentiality and utilization (Swedish research Council, 2002). Two of the participants started working as principals 1,5 year into the project and joined the AR the last 6 months. Ethical issues were further addressed as the participants and the researcher discussed and formulated a document expressing shared expectations and expected outcomes of the joint AR.

Participants

The participating principals worked within the same municipality and in numbers their responsibilities were fairly equal. All except for one were women. Their experiences varied somewhat, but the majority had long experience of leading (see Table 1). All of the principals were either attending or had finished the national principal training program.

Table 1.

Participants in the two AR-groups

Principals, Group 1 and 2	Gender, Female (F) Male (M)	Number of preschools	Employees	Leading experience (in years)	National Principal Training Program Finished (F) Attending (A)	Comments
1A	F	2	27	>10	F	
1B	F	3	30	3	A	
1C	F	4	34	6	A	Joined the AR the last 6 months
1D	M	3	31	5	F	
1E	F	2	29	1	A	Joined the AR the last 6 months
1G	F	2	40	8	F	
1H	F	2	32	2	A	
1I	F	4	32	>10	F	Participated the first year. Ended when retiring.
1J	F	2	39	5	A	
2A	F	2	39	>10	F	
2B	F	2	28	>10	F	
2C	F	3 (including 1 night unit)	32	4	A	Started to work in another municipality after the first year, but continued to participate in the AR
2D	F	3	25	2	A	
2E	F	3 (including 1 night unit)	38	>10	F	Participated the first year. Ended when stopped working as a principal.
2F	F	2	49	>10	F	
2G	F	3	40	1	A	

Design

The participants were divided into two groups. The meetings were held two to three times per semester and lasted for 90–120 minutes,

where the participants discussed their understandings of leading digitalisation and formulated different leading actions to perform, reflecting different needs identified at their local sites. A couple of months into the AR, the researcher reflected on her own participation in, and contribution to the joint AR, and formulated actions connected to her research practice to perform between the meetings. The researcher's actions were to analyse the conversations from the meetings. The principals' new experiences and the researcher's analyses were shared for reflection in the following meeting. This enabled the principals to make changes in their leading practices and critically reflect upon experiences from those changes. But also, to reflect upon the process of the AR. In the final meeting, the two groups were brought together to reflect on, and share experiences of the AR.

Conceptual Background

The next section provides a presentation of research and concepts significant for this study.

Professional Learning as Coming to Practise Differently

As has been previously noted, current research on professional learning is often conducted in individual contexts, using models with relevance to a specific site. There is a perception that the relationship between individuals' professional learning and the intended improvements in everyday professional practices can reflect linear, dualistic and transactional perspectives (Strom et al., 2021). Consequently, there are studies on professional learning aiming at identifying efficient processes or contextual variables that can be used for causal explanations or for measuring the effects or outcomes of a certain kind of professional learning activity (Boylan et al., 2017). This study examines how principals *learn in and for professional practice* (Salo

et al., 2024) as well as how they nurture praxis, viewing professional learning as anchored in a professional practice and focusing on professional growth.

According to Kemmis (2021), a practice perspective—and practice theory—offers resources for thinking about learning that go beyond the standard view of learning as the acquisition of knowledge. From a practice perspective, knowledge enables individuals to participate in practices. By contrast, Kemmis (2021) consider that knowledge is acquired in the process of coming to practise differently. Learning is not a practice in itself; instead, it is about coming to know how to go on in practice, focusing on the process by which learning happens. Yet, there are specific practices that aim at generating learning, such as professional learning practices (Practice B in Figure 1). In this study, we use Kemmis's (2021) definition of learning as coming to practise differently in relation to new or changed conditions in a specific site. Adapting this view, we are interested in how principals, in a specific site, co-produced their own professional learning and learned how to go on in their leading when changing their leading practices. Kemmis's (2021) practice perspective on learning informs our interpretation of professional learning as "practitioners' transformations of professional practices, the knowledge acquired in that process and how the transformation of practices happens" (Johansson, 2023, p.4).

Consistency and Change

This practice perspective on learning is closely interlinked with understandings of change. Some philosophers have held that change is constant, equalising change with difference (Bergson, 1911; Deleuze, 1988). In relation to these theories, Schatzki (2019) problematised how such perspectives do not have a place for persistence. We agree with Schatzki's (2019) notion that although the world is not a static place, it

inherently involves both consistency and change. According to Schatzki, only significant differences in complexes and constellations of practices and practice arrangements qualify as social change. In a similar way, Kemmis (2022) refer to social change as transformations of practices, which are made up of sayings, doings and relatings, prefigured by different arrangements holding the practices in place.

The issue of how social life is prefigured by structures has been a discussion for philosophers for a long time. According to Giddens and Peirson (1998), structures are created and recreated in a process constantly influenced by agents. Structures are present as patterns that enable and limit agents' actions and create a sense of stability and security in everyday life. They can be seen as a map by which agents orient themselves to create ontological security in a world that would otherwise seem chaotic. In line with this, Kemmis (2022) holds that structures are not entities per se but the results of social practices. It is the practices of everyday life that reproduce the common ways of doing things (cf. *rules* and *routines*; Giddens & Pierson, 1998), which can be related to Schatzki's (2019) idea of changes as disruptions of structures. To overcome structures, people need to change the practices in which the structures are realised. Thus, transforming practices requires changing the practices as well as changing the conditions that make those practices possible (Kemmis, 2022). Kemmis's (2021) definition of learning, as coming to practise differently, does not replace traditional views of learning as the acquisition of knowledge but adds the understanding of learning as changing how a practice is performed. According to Kemmis, this involves the reproduction (with variations) of practices and the transformation (changes) of practices, as well as the production of totally new practices.

Kemmis (2022) outlines three different approaches to the transformation of practice: technical, practical and critical. This division is based on Aristotle's classification of knowledge as *episteme*, *techne* and *phronesis*, which all result in various kinds of human activities, such as teaching and leading (Carr, 2009, pp. 55–64; Forssten Seiser, 2021). Episteme is about seeking knowledge for its own sake and for the purpose of achieving eternal truth. The form of human action related to episteme is *theoria* or contemplative action, informed by *theoretical philosophy*. The technical approach to change is based on knowledge as techne. The human action associated with techne is *poesis*, that is, a kind of action that constitutes technical expertise and relates to change as an instrumental process to achieve set goals (Carr, 2009, pp, 55–64; Forssten Seiser, 2021). The practical approach to change is connected to knowledge categorised as phronesis, that is, a form of practical deliberation and a commitment to do the right thing, which might bring about a better state of affairs in the world (Kemmis, 2022). The form of human action associated with phronesis is *praxis*, that is, morally committed action aiming at doing what is ethically right in a specific situation (Carr, 2009, pp. 55–64; Forssten Seiser, 2021). The critical approach to change presupposes and widens the practical view but sees change as a collective enterprise (Kemmis, 2022). It is change towards "collective problem-recognition, collective self-education, collective deliberation, collective decisions, and collective action to bring about change through bottom-up and top-down initiatives and local and global action" (Kemmis, 2022, p. 16), arising from a shared general critique prompted by some kind of injustice.

The perception of phronesis as knowledge that nurtures human actions in the form of praxis is significant when investigating how

professional learning can be arranged to enable change *in and for professional practice*. Therefore, the concept of praxis is further elaborated in the next section.

Nurturing Praxis

Praxis refers to morally committed professional actions (Kemmis & Smith, 2008, pp. 15–35). Professional learning connected with the development of praxis is a kind of professional learning that supports and develops the capacity to question institutionalised habits or educational practices that may conflict with values, purposes and moral intentions, with the goal of creating positive change towards more coherent and informed ways of educating. More precisely, it is informed by reflexivity and critical questioning actions that are morally, socially and politically informed (Kemmis & Smith, 2008, pp. 15–35). This kind of professional learning can be achieved both individually and collectively. Mahon et al. (2017) identified critical praxis as "a kind of social-justice oriented, educational practice/praxis, with a focus on asking critical questions and creating conditions for positive change" (p. 464). To develop critical praxis is thus closely associated with the ability to raise critical questions and to create conditions for positive changes.

Three interwoven elements have been identified as enablers for the kind of professional learning (Francisco et al., 2023) that is connected to the development of critical praxis: *agency*, *power* and *trust*. Agency is attached to the aspect of voluntary and willing involvement in professional learning, that is, being able to freely choose to participate. Another aspect of agency is the ambition to reach an unforced consensus of what needs to be done to improve practice (Kemmis et al., 2014). Unforced consensus refers to agreements that are not forced upon anyone and are achieved in dialogue over time. Longevity and

continuity are factors that enable agency, and they become visible in how experienced and established participants often have more agency than newcomers. There are significant relations between agency and *power with* (in contrast to *power over*). As stated by Francisco et al. (2023), "a conventional notion of individualistic and hierarchical power *over* others can be changed to distributed and collective power together *with* others which have a significant positive impact on the quality of collective and professional learning" (p. 9). This kind of power is related to connection, collaboration and trust, which constitute cornerstones in professional learning.

The third and last element that enables the development of critical praxis is *trust*. This includes each category of trust identified by Edwards-Groves and Grootenboer (2021): interpersonal trust, interactional trust, intersubjective trust, intellectual trust and pragmatic trust. Interpersonal trust is characterised by mutual respect, a caring approach and a feeling of belonging, while interactional trust is the kind of trust that is visualised in the form of open and authentic dialogues where participants freely express their ideas while others curiously and attentively listen to them. Intersubjective trust, in turn, is characterised by a shared language, shared activities and the development of a sense of community. The last two categories of trust, intellectual and pragmatic, are related to the recognition of professionalism, as well as expectations about the learning and how it is undertaken. The recognition of professionalism is about trusting others' abilities and valuing their wisdom and capacities. A pragmatic trust involves factors such as a realistic timeframe and achievable goals.

The theory of practice architectures

The theory of practice architectures (TPA) (Kemmis et al., 2014) works as a practical lens to identify how practices for professional learning and leading digitalisation became interdependent through shared practice architectures, existing in a symbiotic relationship based on mutualism (see Figure 1). The latter means that they are mutually dependent and contribute to improvements in each other, with the aim of nurturing praxis. TPA stresses that practices are human-made and socially established; therefore, it highlights the role of the participant in the practice and in the shaping of the practice (Kaukko & Wilkinson, 2020). A practice is constituted by the sayings, doings and relatings that hang together in the project of a specific practice (Kemmis et al., 2014):

> *The notion of the project of the practice refers to the intentions of those involved in the practice, but it also refers, in part, to things taken for granted by participants and things that exist in the intersubjective spaces in which we encounter one another in any particular site (in language in semantic space; in activities and work in the material world of physical space–time; and in relationships of power and solidarity in social space. (p. 14)*

The notion of practices hanging together in a project is critical for "identifying what makes particular kinds of practices distinctive" (Kemmis et al., 2014, p. 31). The projects that motivate the two practices that are in focus in this study are principals' professional learning in the form of an AR (Practice B in Figure 1) and their leading of digitalisation in preschools (Practice A in Figure 1). Fundamental to TPA is the attention given to the arrangements that enable or constrain (but do not determine) specific practices in specific sites. This means that all practices are prefigured by the practice architectures that are

present or brought into the site of a practice. Practice architectures are the particular arrangements that together shape, and are shaped by, the practice (Kemmis et al., 2014; Mahon et al., 2017). The practice architectures that enabled and constrained what happened in the AR as well as in the leading of digitalisation in preschools are consequently of interest in this study. To understand why these two practices unfolded as they did, the intersubjective spaces in which they took place have to be considered. The three intersubjective spaces in which practice architectures appear are the semantic, physical and social dimensions.

In the semantic dimension, cultural–discursive arrangements enable and constrain the sayings in a practice (e.g., in the form of the ideas and concepts used during the principals' AR meetings). The social dimension includes the hierarchical arrangements in an organisation and the relationships of power and solidarity (e.g., those that emerged when the principals described their interactions with the teachers). In the physical dimension, material–economic arrangements became visible in the actions and work that took place within the AR meetings in the form of physical objects (e.g., the room and the furniture), as well as in the form of time and availability to attend regular AR meetings.

We use the lens of the *co-production* (Kemmis, 2022) of practices to observe, identify and analyse the formation of mutual interdependence between the practice of AR and the leading practice. The lens of co-production shows how the practices became interdependent with one another in the form of a symbiotic relationship based on mutualism, meaning that both practices were mutually dependent (see Figure 1).

Data analysis

The empirical data consists of audio-recordings of the fifteen meetings and comprises about 24 hours of conversations in total. TPA was used to identify changes related to the practice of leading digitalisation within the AR. The audio-recordings were transcribed and analysed by sayings, doings and relatings to identify changes in how the principals described leading as a practice, how they planned and changed their actions of leading and how they related to one another, others, and other practices during the AR. It was done according to Miles et al.'s (2014, p. 10-12) three analytical activities (1) condensation, (2) display and verification, and (3) conclusion. The first activity is a selective and focusing process that makes the data stronger and more solid. This was carried using the theory of practice architectures, coding saying, doings and relatings. The coding led to the second type of analysis activity, in which the codes were organised and compressed into a matrix. This enabled an overview of how sayings, doings and relatings changed over time. The analyses were brought back to the participating principals for verification and further discussions. This step of the process enabled the principals to reflect on the learning process and acknowledged the principals' voices of the analytical work. In the third analysis activity the theory of practice architectures was once again used. This time to visualize how the AR-project and the principals leading became interdependent through shared practice architectures.

A limitation of this study is that it includes 16 principals in a specific context which makes the generalisations of the findings limited. However, the intention is to describe the process of this professional learning. Furthermore, observations of the principals' leading practices could have been done to validate the principals' descriptions

of changed actions in their everyday practices. Meanwhile, AR is a partnership striving for reciprocity between the participants and the researcher, which recognizes one another's competencies and contributions (Kemmis et al., 2014).

Results

This section presents an empirical example of how professional learning can be arranged to enable change *in and for professional practice* as well as by nurturing praxis, describing a process of transformed leading during an AR.

From Technical Expertise to Morally Committed Actions

The analyses identified a transformation of the leading practice due to changes in how the principals talked about leading, how they performed leading and how they related to one another, the teachers and the practices of teaching and professional learning. In the findings of this study, we zoom in on the process and some specific arrangements that enabled these changes to occur. This is presented as a narrative describing how the principals changed their leading due to the fact that the AR and their leading practices became connected and further interdependent through shared practice architectures. This co-production of practices enabled a process of professional learning in which the principals went from a technical to a practical approach in leading digitalisation, which further resulted in a critical stance. How this happened and what enabled this development are elaborated in the following sections.

Enacting New Policy

When the principals first joined the AR, they addressed the expectations on principals to lead digitalisation, expressed in national

policies. The principals did not know how to meet these expectations or how to understand the policy documents in relation to different functions and practices in the preschool organisation. The initial meetings were dominated by a *technical* approach to leading digitalisation in education, heard in the ways the principals talked about strategies for making the teachers use digital devices when teaching:

> *I mean, you connect teaching to a curriculum goal. Just to get it done. The last task I gave them [the teachers] was related to a curriculum goal. It makes them… I think you need to help them. I had to get around it myself, by looking at where digitalisation is actually outlined in the preschool curriculum. What is expected from the authorities, so to speak? What do they find important? It is a way to illustrate to the personnel that this is not something we can opt out of or set aside. (Principal 1A)*

Inherent in this example is a technical understanding of leading change, striving to push the teachers towards using digital devices in their teaching. Another strategy to make the teachers implement digital technology was to let so-called *superusers* (i.e., teachers with technical skills or who were specifically interested in technology) arrange workshops on how to use specific applications and software. A technical approach to leading digitalisation also emerged as an action in the form of adjusting the teachers' pedagogical evaluation documents by requesting reports on how they used digital devices when teaching.

Furthermore, a lack of trust was shown in the principals' ambitions to inform the teachers about the *right* ways to teach with digital devices, as well as to require an account of their work. This kind of obligation was an example of the principals using hierarchical *power over* the

teachers, which decreased the agency promoted by voluntary and willing involvement in professional learning.

Defining the Project: Critical Investigation

In the AR, the principals recurrently met to discuss understandings of digitalisation and leading, which became a discursive arrangement that enabled a practical approach to educational change. It emerged as a joint reflection on digitalisation as a phenomenon, to develop deeper understandings of the purpose of digitalisation in preschool practices. It was clear that the principals found it difficult to imagine how digital technology might affect educational practices in the future. They also found it hard to lead digitalisation due to a lack of time, when relating to time as a material–economic arrangement. In response, the researcher challenged the principals to think of digitalisation as a process of time, as a historical, and future, technological transformation of social practices (for more details on this process, see Johansson, 2023). The principals reflected on how various social practices in society that had transformed in line with technological developments. Reflecting on how technology has shaped preschool practices historically enabled the principals to envision how the technological development may shape educational practices onwards.

Relating to time and practices through a processual perspective became a discursive arrangement that enabled the principals to change their conceptualisations of digitalisation from focusing on the digital devices to on how technology have changed social practices. This in turn affected how the principals talked about leading such development, focusing on their own actions of leading.

> *I believe that this is what I struggle with in my leadership. How do I get them (the teachers) with me on that? How do I communicate what*

> *we just talked about? Maybe you should avoid talking about digitalisation, but talk about technology instead. And maybe through time, where are we and what do we think forward. Like, present it in another way, not as digitalisation but as a technological development. (Principal 2C)*

The recurring meetings in the AR encompassed longevity and continuity, which enabled agency. Important arrangements included the principals' and the researcher's shared engagement with respect to their voluntary participation in dialogue over time to reach an unforced consensus of what needed to be done to improve educational practices regarding digitalisation. In addition, the relation of agency and shared power emerged as a process in which conversations turned into dialogues, with the principals collectively developing new understandings continuously in the meetings. The open and authentic dialogues showed signs of interactional trust when the participants expressed different ideas and curiously and attentively listened to one another.

> *When it comes to leadership. I am not the expert when it comes to the work of the teachers, although I worked as a teacher for many years. Leadership is about leading and navigating, leading the processes and create good conditions. Also, to let the wise rule… For me, it is about distribute leading in different areas. (Principal 1B)*

Intellectual trust was inherent in relation to the teachers as well as in the relations between the principals and between the principals and the researcher, thanks to the recognition of professionalism, the trust in one another's abilities and the valuing of one another's different outlooks and capacities. Everyone's knowledge was respected, and everyone contributed to the dialogues. This was an approach that had

a positive impact on the practice for professional learning when collaborating based on different understandings.

Acting and Reflecting: The Co-Production of Practices

Trying out different actions emerged as an enabling arrangement of shared practice architectures that promoted improvements in the leading practice as well as in the AR. Trying out actions of leading increased the principals' engagement and commitment in the meetings. This was visualised in the fact that they honestly shared and reflected upon their experiences, which in turn supported improved ways of relating to one another and led to a closer, non-hierarchical collaboration. Trying out actions in turn generated consciousness of the complexity, and the principals no longer chased for technical and *correct* solutions. Trying out actions in specific sites supported new ways of understanding and talking about certain issues, new ways of acting and conducting professional assignments and new ways of relating within the joint AR.

> *For me, the AR helps me in my reflections, as others ask questions about how I think. When we listen to each other, it helps you sense your own process and realise that things have developed, and it makes you question your own actions when it hasn't. About what you need to adjust—Is it something else we need to focus on? Do I need to provide more research or tools and so on? . . . like one of you [the principals in the AR] said, we usually do not have the time to reflect collegially, which has enabled me to reflect on my own leading practice and to change my actions. (Principal 1B)*

The principal's approach to leading shifted from a technical to a practical approach, as a consequence of changes in understandings of leading as creating good conditions for the teachers to explore when

and how digital technology may improve educational practices. The new ways of relating to the teachers were shown by how the principals embraced a distributed leadership when identifying specific competences and organising for the teachers to meet in collegial forums led by middle leaders (teachers assigned to lead their colleagues) to discuss how digital technology could be used to improve educational practices:

> *It is like a guarantee when the middle leaders join the team meetings to support the teachers in the evaluation and in their planning. In that way, knowledge is shared, and the teachers are supported in their work as well as in their learning, as the middle leaders also lead the pedagogical development evenings. (Principal 1G)*

The evaluation documents were now used to support the teachers' dialogues. The new ways of understanding and performing leading as creating good conditions for teachers' and children's learning illustrate how the principals adopted a practical approach to change and how that resulted in actions of nurturing praxis. The principals' new ways of leading replaced the initial individualistic perspective, and their hierarchical power over the teachers was replaced by collective power with the teachers, which had a positive impact on the quality of the collective and professional learning as praxis-oriented change.

When the practices for professional learning and leading became mutually interdependent through shared practice architectures (see Figure 1), the actions formulated in the AR brought about substantial changes in the principals' leading practices. These changes in turn affected other practices in the preschool organisation due to the changed conditions for the teachers' practices and the development of new distributed leading practices. At the end of the AR, the principals described digitalisation in terms of an ongoing technological

transformation in society, and they understood leading as orchestrating conditions in ways that support children's learning and development today and in the future. The principals talked about leading in terms of the practices performed by the principals themselves, as well as leading practices distributed among the principals and middle leaders in the organisations. They described how they planned together with middle leaders (teachers in their organisations) to enable the teachers to meet and reflect on digitalisation in relation to the educational aims and specific contexts of their local preschools.

> *I was just thinking that it leading digitalisation is like leading any development; it's no different but has to grow from a need. I mean, like if we have not been able to give the children sufficient conditions for something, or there are goals we do not reach, or not maintain sufficient quality. Then you need to, like you said [relates to one of the other principals], form an idea of the current situation. Where do we stand in this? What do we know? What do we need to build a base? Like you were touching earlier [relates to another principal]. We need to, I mean . . . We all need to understand what before we act, if we want our actions to have an effect. I mean, we need to know the purpose to understand what we want to improve. In other words, for me, digitalisation in education is a means to achieve educational goals. That the children learn the language and mathematics—and other goals expressed in the curricula as well. It [leading digitalisation] is . . . to identify development areas and systematically improve these areas out of different needs, out of the children's needs, but also out of the teachers' knowledge and needs in that specific area. (Principal 1B)*

Instead of relating to leading digitalisation as pushing the teachers to enact new policy, leading digitalisation was understood as part of a

societal technological process that became embedded in the organisational structures. There were signs of intellectual trust, as the principals acknowledged that the teachers needed to elaborate on digitalisation in relation to educational aims to understand how to develop their teaching. This example portrays professional learning as the process of praxis development as morally committed professional actions.

The praxis-oriented approach increased autonomy and strengthened the principals' capacity to adopt a critical approach by questioning institutionalised habits. The same day as the last meeting. The Swedish government had made a complete turnabout by announcing the abolition of a new digitalisation strategy for the Swedish school system. This new political direction was based on statements from physicians and brain scientists concerning the risks of children overusing screens, claiming that digital technology limits children's literacy development and play. The new direction had been visible in the media for a while. One principal expressed how the authorities and the media did not understand the pedagogical aspects of digitalisation in preschool education:

> *I have felt this frustration over some articles in the media, expressing that children should not use screens in preschool, as it is not good for them. That makes me think that the authors of the articles do not have knowledge about how they are used in preschool practices. No one writes about that. (Principal 2C)*

The quote expresses that practices of media and politics are disconnected from preschool practices and how power is used over the pedagogical experts working in preschool organisations. The political play out was conflicting with the principals' understandings and experiences of how digital technology is used in preschool practices.

The principals claimed that it was a pedagogical question whether digital technology improves educational practices and supports children's learning and play.

Summary

The findings describe how professional learning, as praxis-oriented change, made the principals shift from a technical understanding of leading as implementing national policy, to a critical approach when questioning new policy. This was enabled when the practices for professional learning and leading became co-produced by shared practice architectures. The dialogue in the AR generated new ways of understanding leading, but at the same time, it was dependent on the experiences of the principals' everyday leading practices. The principals changed their ways of leading through changed understandings and because the planned actions in the AR were the actual leading actions in the principals' everyday leading practices.

This process of transforming the principals' leading practices to create conditions for positive change manifested professional learning as praxis-oriented change. The findings also visualise the importance of connecting to the purpose of the practice in order to nurture praxis-oriented change, as the purpose makes the content of some sayings, doings and relatings of a particular practice more salient than others (Kemmis, 2022). Addressing the purpose made the principals raise critical questions in order to create conditions intentionally directed towards positive change, which is closely associated with praxis development (Mahon et al., 2019). The critical aspects of praxis in this study were achieved collectively, and made the principals look beyond their local preschools to see the bigger picture and widen their social responsibility.

Discussion

By adapting Kemmis's (2021) understanding of learning as coming to practise differently, we have been able to present an empirical example of professional learning as praxis-oriented change within a preschool organisation in a Swedish municipality. We think that this way of orchestrating collective and contextualised (i.e., anchored in current practices) professional learning is meaningful and required as a complement to the temporary training occasions that are common within the Swedish education system.

Based on the findings, we emphasise that a conscious striving for symbiotic relationships, in the form of shared practice architectures and mutual dependence, is a wise leading strategy to overcome the difficulty of transferring content from professional learning practices to everyday professional practices (Forssten Seiser & Söderström, 2022; Huber, 2010; Jerdborg, 2022). When practices for professional learning are co-produced with everyday professional practices, learning is related to professional judgement by increasing the professionals' abilities to act in ways that are ethically right in specific sites and situations. In other words, when practices for leading (Practice A in Figure 1) and professional learning (Practice B in Figure 1) become interdependent, in the form of a symbiotic relationship (see Figure 1), this enables the nurturing of praxis in and for practice. In opposite, when practices for professional learning is detached from the everyday leading practice, the principals are likely to improve their ways of participating in those specific practices than to develop and change their ways of leading.

In Sweden, neoliberal influences challenge a long tradition of a comprehensive democratic mission that forms the foundation of the

Swedish school system (Adamson et al., 2016). Such global and national questions may feel overpowering for individual principals, but based on this study we stress that by leading positive changes in local schools, this can contribute to positive global change, and that this can be powerful if many principals act in this way. An example of how to act locally, and thereby contribute to more extensive change, is to raise awareness of the purposes of different educational practices, and how these relate. If the purposes of different professional practices are not addressed, actions risk becoming instrumental, and the performance of the practices tends to become an end in itself.

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Raising Awareness of Sustainable Development Goals in Higher Education Institutions

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Abstract

Higher education institutions play a crucial role in advancing sustainable development goals. They bear the responsibility of informing and encouraging all stakeholders, including faculty members, students, and industry partners, to collaborate towards achieving these goals. While many universities are integrating Sustainable Development Goals into their operations and educational programs, there is an increasing need to establish collaborative platforms with private sectors and non-governmental organizations to further champion this agenda. Educating the future workforce is a key responsibility of these institutions, and they should actively raise students' awareness of these goals, enabling them to develop competencies related to sustainability. This study aims to explore how higher education institutions can effectively raise awareness of sustainable development goals. In addition, the research contributes to the literature by presenting a curriculum designed in a Turkish higher

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education institution to foster awareness of sustainable development goals. The findings hold the potential to significantly enrich existing literature on awareness-raising practices and the promotion of sustainability strategies, extending beyond higher education institutions to organizations at large.

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Introduction

The concept of sustainability emerged in the 1970s in response to the escalating environmental challenges driven by industrial and economic growth models (Gillespie, 2018; Purvis et al., 2019). The growing environmental problems, resulting from the prevailing development paradigm in economic models, prompted a global shift toward sustainable development, making it a central theme in social and economic studies worldwide. The United Nations (UN) framework for sustainable development represents a universal call to action, urging all countries, to engage in a global partnership to achieve 17 (Figure.1) Sustainable Development Goals (SDGs) by 2030. Initially rooted in environmental concerns, the scope of SDGs has expanded to address a variety of social issues. The legitimacy and widespread acceptance of SDGs stems from the undeniable reality of visible environmental challenges, including the increasing frequency and severity of natural disasters, the impacts of climate change, and global and national inequalities.

Figure 1. *Source: Sustainable Development Goals United Nations Department of Global Communications (United Nations, 2023).*

The increased global access to information has elevated the significance of the SDGs framework compared to its predecessors. Nations worldwide are actively working to enhance awareness of the SDGs, and certain developed countries are reinforcing this commitment through regulatory measures (Suwartha & Berawi, 2019). Estonia, for instance, mandates that aid recipients incorporate public information dissemination into their budget, utilize government-provided logos for humanitarian aid and development, and engage in outreach activities (Republic of Estonia Ministry of Foreign Affairs, 2022). Aid recipient countries are required to showcase the supported activities on their websites, social media, and other communication channels. Furthermore, in line with these efforts, Türkiye, under the Ministry of Development, established a National Sustainable Development Commission to coordinate collaborative activities among all relevant stakeholders to achieve the SDGs (European

Development Agency, Briefing, 2020). A clear indication of the seriousness associated with this initiative is the vision of the Presidency of the Republic of Türkiye to transform all its institutions by these goals by establishing an SDG-based unit (Türkiye ve Sürdürülebilir Kalkınma Amaçları, n.d.).

Given that today's students are destined to occupy various roles within the workforce – spanning employers, employees, managers, and even political leaders – they possess the agency to infuse SDGs into their career trajectories. Therefore, educational institutions, particularly HEIs, play a crucial role in advancing SDGs. While HEIs have been actively involved in pursuing the Millennium Development Goals since 2000 (Chang, 2002), the introduction of the SDGs framework by the UN in 2015 raised the expectations for these institutions. Consequently, HEIs have recognized the urgent need to explore educational methods and policy frameworks to integrate SDGs into their campus operations, research directions, and educational plans, despite the pressing global challenges (Dlouháet et al., 2019; Franco et al., 2019; Lovren et al. 2020; Ramísio et al., 2019). The United Nations' Agenda 21 (1992) underscored the responsibility of educational authorities in promoting established educational methods, developing innovative teaching approaches, and integrating traditional education systems within local communities to implement SDGs under the banner of "Promoting Education, Public Awareness & Training" (Section IV, Chapter 36, 1992).

In the realm of raising awareness, it is essential to explore the dynamics and shared language between the UN and social marketing actors. Social marketing (Robison, 1998) a strategy employed not only by corporations but also by various entities, serves as a powerful tool for promoting environmental awareness, equity, and other societal issues.

While the UN actively utilizes social marketing as a tactic to advance its programs, it's crucial to recognize that this approach extends beyond the UN to encompass a broader spectrum of actors. Social marketing involves not only corporations but also non-governmental organizations, governmental bodies, and other entities committed to influencing positive change through awareness campaigns. (TAP Network, n.d., Sayers, 2006). To comprehend the nuances of this engagement, it is imperative to identify who else participates in social marketing and understand how the UN strategically incorporates it into its initiatives.

As the case higher education *institution* in this study, Abdullah Gül University (AGU) not only imparts knowledge, fosters desire, teaches skills, creates value, facilitates learning, stimulates creativity, and reinforces these goals for its students but also extends these efforts to its faculty and administrative personnel. Collaborative initiatives involving all stakeholders are indispensable for achieving SDGs at an institutional level. The term "holistic nationwide" emphasizes the significance of a comprehensive and nationwide approach. This involves not only addressing sustainability comprehensively within the institution but also extending these practices on a national scale. The intention is to underscore that sustainability efforts should go beyond being holistic or nationwide individually; rather, they should be integrated into a unified strategy that considers both dimensions. While a more detailed discussion on this approach unfolds later in the article, this critical perspective emphasizes the importance of combining a holistic approach with a nationwide scope to address the complex challenges posed by the SDGs.

In some situations, such as during the COVID-19 pandemic, policies may be implemented that require changes in HEI's education. To make

these changes without disrupting education, new curricula are designed, educators are provided with training, and other measures are taken (Kim et al., 2021). In such cases, changes are generally supported and accepted without resistance. The implementation of SDGs requires holistic nationwide changes at every level, including individual, organizational, governmental, and societal. However, changes of this magnitude will inevitably have financial, economic, and cultural impacts on society. Generally, people do not readily accept change and their initial reaction may be resistance due to a lack of awareness.

To ensure that students' extracurricular activities align with the UN SDGs, *the institution* has implemented a comprehensive strategy. This involves integrating SDGs into various aspects of student engagement beyond the traditional classroom setting. For instance, *the institution* actively tracks and encourages students' participation in internships and projects that support small, independent, or green businesses, providing them with practical exposure to sustainability initiatives. Additionally, *the institution* facilitates partnerships with relevant industries and organizations, creating opportunities for students to engage in activities that contribute to the achievement of specific SDGs.

Literature Review

HEIs' Involvement with SDGs

Institutions play a crucial role in implementing SDGs at regional, national, and global levels, aligning with the broader aims of sustainable development, as highlighted in the literature review (Adomßent et al., 2014; Franco et al., 2019; Kioupi & Voulvoulis, 2019; Korhonen-Kurki, 2019; Nhamo & Mjimba, 2019). HEIs, in particular, can contribute significantly to sustainable development, benefiting

individuals, communities, and global society through the provision of quality education.

Scholars emphasize that HEIs aim to empower students to apply acquired knowledge in sustainable development by fostering multicultural, global, and future-oriented perspectives, promoting complex decision-making and behavior, and assisting them in acting accordingly in sophisticated situations (Filho et al., 2019; Mawonde & Togo, 2019). Additionally, HEIs play a role in helping students develop sustainable consumption and production patterns. It is essential to equip students with the ability to respond to uncertain futures (Argento et al., 2020; Kioupi & Voulvoulis, 2019; Mula et al., 2017). Recognition of the need to develop these approaches in future graduate skills is crucial for future employers and agencies (Slocum et al., 2019). The role and status of SDGs in HEIs are discussed in four subsections: raising awareness, operational implementation, educational implementation, and challenges.

Raising Awareness

Raising awareness of the SDGs has become a crucial concern in higher education, as emphasized by the 2030 Agenda for Sustainable Development. Students need to be more conscious of their impact on the world (Manolis & Manoli, 2021). Integrating sustainability into the core of education, research, and extension programs can enhance awareness and foster responsibility towards the SDGs (Ramísio et al., 2019). Training programs not only contribute to raising awareness and promoting the development of SDGs but also have a significant impact on altering students' responses to the SDGs through awareness creation (Skene & Malcolm, 2019; Zamora-Polo et al., 2019). This underscores the significance of integrating SDG-related education into academic curricula to foster a generation of individuals who are well-

informed and committed to sustainable practices. Maharjan et al. (2019) supported Skene and Malcolm's finding, affirming that 67% of students never heard of SDGs before an awareness campaign and their responsiveness to SDGs increased after the awareness was raised.

Raising awareness of the SDGs is vital for global progress, yet it faces substantial challenges. Firstly, such campaigns require significant resources including funding, expertise, and time, which can be particularly demanding for smaller entities or in resource-limited settings. Engaging the public effectively is another major hurdle, as it involves making the SDGs relevant to their daily lives and inspiring action. The global nature of the SDGs also means that messages must be adapted to diverse cultural and linguistic contexts, a task that is essential but often complex. Coordinated efforts across governments, NGOs, the private sector, and civil society are crucial to avoid fragmented and inconsistent messaging, yet achieving this level of coordination is frequently challenging (Mulholland et al., 2017). Additionally, assessing the direct impact of these campaigns on tangible changes like policy shifts or sustainable practices is difficult, complicating the justification and guidance for future efforts. Furthermore, the reliance on digital platforms for these campaigns' risks excluding those without internet access or digital literacy, especially in developing countries (Mulholland et al., 2017). Despite these obstacles, the push for SDG awareness is crucial and necessitates innovative strategies, collaboration, and persistent efforts to surmount these limitations, aiming for a more sustainable and equitable world.

With the examination of universities from 17 countries spread over the five continents revealing that 78% of participants were fully aware of SDGs, the application of SDGs in teaching varied, with only 32% applying them, 40% partly applying them, 11% applying them to a

small extent, and 18% not applying them at all (Filho et al., 2019). Mawonde and Togo (2019) conducted an analysis of sustainability databases, including Scopus, and publishers such as Emerald, Springer, and Elsevier. They found that universities in economically developed countries are taking more substantial actions toward addressing SDGs. However, the study revealed a notable gap, as very few articles included "raising SDGs awareness" as a specific subject. Moreover, the current literature lacks diverse approaches to raising awareness of SDGs among university students (Manolis & Manoli, 2021). Recognizing students as future scholars, government workers, and external stakeholders, integrating SDGs into their work is important (Adomßent et al., 2014). One effective strategy would be embedding SDGs in both formal and informal education, spanning from preschool through higher education (Cebrián et al., 2020; Yuan et al., 2021). Furthermore, given the critical role of universities in implementing SDGs, success in this endeavor is contingent upon raising awareness (Manolis & Manoli, 2021). Additionally, student awareness could act as a catalyst for regime-level changes concerning SDGs, providing a foundation for inspiration and motivation for young scientists in their pursuit of solutions (Korhonen-Kurki et al., 2019).

Operational Implementation

The literature review highlights that HEIs are incorporating SDGs into their overall organizational operations, particularly in areas such as building resilient infrastructure (Goal 9), when feasible or deemed preferable by the institution. However, efforts by HEIs tend to be compartmentalized, primarily focusing on internal operations and research profiling rather than being spread across various aspects of the institution's activities (Filho et al., 2019; Findler et al., 2019). The

decision-making process regarding SDG implementation in HEIs may involve considerations such as contract renewals for energy infrastructure or the preference for innovative, cost-effective, and durable solutions.

In a study of 50 universities, only 13% reported their energy consumption (Filho et al., 2019). The source does not explicitly discuss the interpretation of this statistic, leaving room for varied perspectives. It could indicate a positive trend toward lower energy consumption, or conversely, it might suggest a need for improvement in reporting practices, which should be explored further. Besides, SDG implementation as a top priority demands a multifaceted approach, encompassing technical, scientific, administrative, and political dimensions (Kapitulcinova et al., 2018; Nhamo & Mjimba, 2019). HEIs must navigate a complex landscape that involves integrating sustainability principles into educational, research, and operational domains. The success of such initiatives often hinges on the alignment of institutional policies, government support, and active involvement from various sectors (Filho et al., 2019; Franco et al., 2019; Santos et al., 2020). In the subsequent sections, we will explore the intricate dynamics involved in each dimension of SDG implementation within HEIs, shedding light on the challenges and opportunities that arise in this process.

Educational implementation

While there is a need to foster an interdisciplinary academic culture, limited attention has been paid to shaping curricula or course content within HEIs (Argento et al., 2020). The predominant focus in research often revolves around the operational implementation of SDGs. For instance, Korhonen-Kurki et al. (2019) observed that various SDGs are integrated into multiple degree program descriptions at the University

of Helsinki. Additionally, Aleixo et al. (2018) found that there is a higher inclusion of SDG-related courses in graduate degrees compared to undergraduate degrees in Portugal.

Certain HEIs are making commendable strides by embedding sustainability into specific degree programs (Argento et al., 2020) and incorporating SDGs into their strategic agenda (Franco et al., 2019). In some countries, universities are proactively reorienting, adjusting, and updating their curricula to align with SDGs (Mula et al., 2017; Nhamo & Mjimba, 2019). Innovative approaches adopted by U.S. universities include Carnegie Mellon University's interactive exhibit, where students shared reflections on SDGs, public webinars by Georgia Tech, and initiatives like community engagement programs by Rice and the University of California (Alaoui, 2021). The University of Tennessee, Knoxville, took a systematic approach by mapping and cataloging courses related to SDGs. Many universities have also established student/campus chapters of the United Nations Association of the USA (Alaoui, 2021)

Despite many universities considering the integration of SDGs into their education programs, according to Korhonen-Kurki et al. (2019) universities in the Scandinavian region, particularly those in Finland, place particular emphasis on SDG 4 (Quality Education), SDG 17 (Partnerships for the Goals), and SDG 3 (Good Health and Well-being) in various HEI initiatives. Notably, SDG 1 (No Poverty), SDG 6 (Clean Water and Sanitation), and SDG 5 (Gender Equality) receive less priority at Helsinki University. This discrepancy in emphasis among the SDGs in the Scandinavian region presents a challenge that requires the exploration of potential solutions. Moreover, for a HEI, prioritizing the integration of SDG 4, SDG 17, SDG 3, and SDG 14 could be more practical and applicable.

Filho et al. (2019) strongly advocate for the direct integration of global goals, particularly the SDGs, into university curricula. They argue that academic programs across all disciplines should empower learners to critically engage with sustainability issues, fostering not just disciplinary understanding but also shaping them as informed, responsible citizens. This perspective highlights the dual role of education in developing professional expertise and societal awareness. The authors emphasize the growing need to align curricula in HEIs with cutting-edge research, advocating for the incorporation of innovative content, learning methodologies, and transformative educational approaches. This alignment is seen as crucial in keeping educational programs relevant and effective in addressing contemporary challenges. Furthermore, Filho et al. (2019) stress the importance of developing applied research that is specifically focused on the SDGs. Such research would not only contribute to academic knowledge but also have practical implications for addressing global sustainability challenges.

A significant aspect of their recommendations is the active engagement of the student body in committing to and acting in support of the SDGs. This involves not just educating students about these goals but also enabling and encouraging them to act, both within their academic pursuits and in broader societal contexts. These recommendations from Filho et al. provide a comprehensive framework for HEIs to make substantial strides towards sustainability. By aligning education with research, innovating in content and methods, and engaging students actively, universities can play a pivotal role in advancing the global agenda for sustainable development.

Challenges to Enacting SDGs

Several authors have identified core challenges that HEIs face when implementing SDGs. The most commonly mentioned challenges include the capacity and skills of academics, motivation, ethical decisions, politics, bureaucratic obligations, policies, cognitions, faculty structures, and social, economic, and environmental factors. In their 2020 study, Lovren and colleagues identified further obstacles in integrating the SDGs into educational curricula. They highlighted the lack of time as a significant barrier, indicating that educators and institutions often struggle to find sufficient time to effectively incorporate SDG-related topics into already packed curricula. Additionally, the absence of comprehensive institutional strategies was noted as a critical issue. Without clear, overarching strategies and guidance, schools and universities may find it challenging to systematically embed the SDGs into their teaching and learning frameworks. A key hurdle is the level of students' awareness and understanding of sustainability issues (Lovren et al., 2020). If students are not adequately aware or informed about sustainability and the SDGs, it becomes more difficult to engage them in these topics and foster a deeper understanding and commitment to these global goals. These challenges underscore the need for more concerted efforts and resource allocation to effectively integrate the SDGs into educational settings.

The biggest gap in the university curricula is the ethical foundation of sustainability which includes human rights, dignity, gender issues, poverty reduction, and climate change mitigation (Lovren et al., 2020). Regarding ethical issues, the integration of ethics and responsible management into management education and the curriculum of HEIs has been suggested (Avelar et al., 2019; Kapitulčinová et al., 2018).

Addressing this important subject, Dlouhá et al. (2019) proposed that sustainability competencies in HEIs should encompass normative knowledge and a personal dimension, including values, emotions, and motivation.

Furthermore, Lovren et al. (2020) emphasized the importance of a holistic approach to integrating SDGs into educational curricula, advocating for this integration at both the curriculum and institutional/organizational levels. They argued that such an approach would ensure a comprehensive and effective implementation of the SDGs, promoting a deeper understanding and commitment among students. However, the realization of this holistic integration is not always evident in practice, as highlighted by Kioupi and Voulvoulis (2019). They noted that, despite the potential for universities to adopt such an all-encompassing approach, the actual implementation often falls short. This discrepancy can be attributed to various factors, including institutional inertia, lack of resources, or inadequate prioritization of sustainability goals within the academic framework.

Including SDGs, in course weekly plans can enhance and extend human capital, boost engagement in activities, and guide students toward sustainability. This integration can heighten students' awareness, encouraging them to integrate SDGs into their assignments and feel prepared to pursue internships. By fostering multidisciplinary studies and research, promoting innovation, and establishing connections with human rights, students become more inclined to adopt responsible practices in utilizing natural resources and contributing to sustainable architecture. Achieving the incorporation of SDGs into courses requires support from instructors and departmental policies, facilitating the immersion of sustainability

principles throughout teaching methods and the learning environment.

For the integration of SDGs into HEIs to meet diverse requirements (Nhamo & Mjimba, 2019) and advocacy, it is crucial to establish and deploy multidisciplinary research teams, create sustainability centers, and develop interdisciplinary Master's programs focused on sustainability to facilitate the integration of sustainability principles into HEIs (Korhonen-Kurki et al., 2019). It is also important to adopt innovative educational strategies in HEIs to enhance students' critical thinking skills, especially in addressing societal problems (Adomßent et al., 2014). They recommend incorporating methods like role plays, case studies, problem-based learning, and simulations into curricula. These interactive and experiential learning techniques are particularly effective in engaging students more deeply with real-world issues.

In the context of various teaching styles, including self-inquiry-based learning, group-based learning, and active learning when delivering SDG-related or SDG-focused courses, it is imperative to analyze and implement these diverse approaches. Furthermore, seven principles for developing an Institutional Sustainable Strategy for HEIs have been identified. These principles include adopting a mixed bottom-up and top-down management model, ensuring the across-the-board integration of all sustainability policies, implementing specific programs focused on the efficient use of resources, maintaining continuous monitoring and communication, integrating collaborative networks, demonstrating commitment to stakeholders, and institutionalizing sustainable policies (Ramísio et al., 2019).

Methodology

This study employs a comprehensive methodology comprising an in-depth literature review and the presentation of a meticulously crafted curriculum aimed at enhancing awareness of SDGs within a public university setting. A pronounced emphasis is placed on elucidating the intricate process underpinning the curriculum's development, while concurrently delving into the underlying rationale that informed the chosen approach.

Institutional Background

The *institution* AGU is a state university located in the Anatolian Region of Türkiye, one of the first third-generation state universities that aims to expand the functional areas from purely conventional study and research to entrepreneurship and cooperation. The university currently has five schools, namely the School of Engineering, Architecture, Life and Natural Sciences, Managerial Sciences, and Humanities and Social Sciences, and offers various undergraduate and graduate degrees. Most of the academic personnel hold Ph.D. degrees from prestigious international schools. Those who do not possess international degrees have considerable international experience as post-doctoral fellows elsewhere. *The institution* is a strong advocate of SDGs and has been making serious attempts to raise awareness about SDGs on campus and implement them in every field (Bengu et al., 2020). The university has been ranked in the Times Higher Education UN SDGs for three consecutive years in the 101-200 tier. In the recent report, the university obtained its best scores in the following SDGs: “1-No Poverty (40th in the world)”, “11-Sustainable Cities and Communities (45th)”, “13-Climate Action (54th)”, “7-Affordable and Clean Energy (67th)”, and “17-Partnerships for the Goals” (79th) (AGU, n.d.a). Departments are also designing SDG-

specific activities for communities. For example, in 2021, the School of Architecture organized a workshop on SDGs for Children in which children between the ages of 7-12 participated. The university also recently launched a new program called the Public Seminar Series, where faculty members lead seminars every Wednesday on different subjects such as responsible production and consumption, urban life inequality, and so on. (AGU, n.d.a).

Curriculum Design Framework

The innovative 3Dimensional curriculum (referred to as 3dC) was created to develop youth who can contribute to society and shape the future of their communities by increasing their awareness of the seventeen fundamental goals established by the United Nations. 3dC comprises three paths: Personal and Professional Development, Globe-Local Challenges (Glocal), and Specialization Studies (Bengu et al., 2020). The Personal and Professional Development path aims to promote the personal, professional, and social growth of students. The Glocal Challenges path aims to raise awareness and sensitivity towards fundamental issues at the global, national, and local scales and develop sustainable solutions for assigned problems. The Specialization Studies path aims to equip students with skills and knowledge that align with the demands of the job market.

In 2016, the Global Problems & Responsibilities Courses (referred to as GLB Courses) emerged as a unique outcome of the Glocal Challenges path. Globe-Local (Glocal) Challenges Path which is the second dimension, offers courses that address glocal issues aligned with the UN's SDGs. The main objective of these sustainability-related courses is to increase awareness and sensitivity to the seventeen fundamental agendas developed by the UN (AGU, n.d.b.). These courses are an excellent example of integrating SDGs vertically.

Global competence is the ultimate goal of this curriculum course (AGU, n.d.b.). It includes developing mindsets such as valuing diverse perspectives, empathy, and a commitment to improving the world. It also involves gaining knowledge of world conditions, current events, and cultures (Tichnor-Wagner, 2019). Additionally, the courses in this curriculum focus on building skills like intercultural communication, cooperative teamwork in diverse groups, and acting on global issues (Tichnor-Wagner, 2019). The aim is to equip individuals with the necessary tools to thrive in a diverse and interconnected world, benefiting their life, work, and citizenship.

Curriculum Development

The university integrates SDGs into the curriculum using both vertical and horizontal integration. The GLB Courses are an example of vertical integration. Horizontal integration is encouraged in departments to interweave sustainability into their specialization courses. As previously mentioned, the GLB Courses have been using different pedagogical approaches to facilitate student-centered and future-oriented learning, such as collaboration, discussion, feedback, and reflection, explicit, guided, experiential, and independent learning (AGU, n.d.b.). These modes necessitate distinct interactions between students, teachers, and the learning environment, with implications for curriculum, pedagogy, lesson planning, and space design. However, instructors may not always possess the necessary competencies. Although some teachers adopt new curriculum materials or approaches, their implementation may remain shallow due to their unchanged deep-seated beliefs (Heng & Song, 2020).

The GLB courses included in the GLB Curriculum aim to create an interdisciplinary class environment where students from different majors can take courses together. GLB 101 AGU Ways, GLB 102

Innovation and Entrepreneurship, GLB 201 Food and Health, GLB 202 Immigration and Population, and GLB 301 Sustainability courses are continued in the fall and spring semesters with the valuable contributions of many lecturers (AGU, n.d.b.).

Need Assessment

Establishment of a Committee. In 2021, the establishment of an interdisciplinary GLB Curriculum Committee was an essential outcome of the evaluation of these courses. The committee consisted of four faculty members (Urban Planning, Nanotechnology Engineering, Sociology, and Educational Science) and one research assistant.

The GLB Courses Committee is responsible for overseeing these courses with the following objectives: a) Actively engaging students with the UN agenda, b) Encouraging students to develop tangible solutions for sustainability issues, c) Encouraging teamwork and a transdisciplinary approach, d) Developing 21st-century competencies such as communication, leadership, teamwork, self-learning, motivation, time management, negotiation, decision-making, responsibility, empathy, flexibility, and consistency, e) Creating an interdisciplinary classroom environment that integrates students' disciplinary knowledge with a curious, responsible, creative, passionate, and entrepreneurial mindset, and f) Providing orientation to faculty members from multidisciplinary fields to become part of the GLB team of instructors.

To help instructors develop the necessary knowledge, skills, and mindsets to lead these courses, the committee: a) coordinates a week-long orientation for the team of instructors before each semester, b) provides instructors with a handbook to adapt to the instructional

strategies, and c) designs a rubric to standardize assessments. Since 2016, the committee and a team of instructors have collaborated on each of these items and created handbook(s) to provide support for instructors.

New Design. The interdisciplinary class environment of GLB courses will remain unchanged. However, based on student feedback, the course design has been modified in the following manner: GLB 1XX courses are offered as two continuous courses in the fall and spring semesters and designed as orientation courses, where each week, one of the SDGs is introduced to students without going into too much detail. They are required for all majors in their first year. GLB 2XX courses are designed by a team of instructors that focus on the SDGs in line with their fields of study or interests. This allows students to learn about the chosen SDG in greater detail. GLB 3XX course is brand new and designed to provide students with the opportunity to work on SDG-focused community projects with an interdisciplinary and collaborative approach, aimed at finding solutions to local and global problems. At this stage, students are expected to work closely with NGOs. Both GLB 2XX and 3XX become elective courses for the second and third years. Table 1. shows sample designs and topics for the 2021-2022 Academic Term Fall Semester and the 2022-2023 Academic Term Spring Semester.

Table 1.

Sample syllabus design and topics

	GLB 101	GLB 102	GLB 2XX 1st semester	GLB 2XX 2nd semester	GLB 3XX
Topics	SDG 1-7	SDG 8- 17	SDG 3- 11- 12	SDG 3- 6- 7- 9- 10- 11	Glocal level projects
number of students	600	534	550	435	500
Number of sections & instructors	16	17	12	11	1 municipality, 10 NGOs, 10 instructors, 15 student clubs
Number of SDG-related guest speakers	3	3	5	5	5
Pedagogical approaches	Learner-centered, active learning, and transformative learning. Simple team tasks		Learner-centered, problem-based learning and team-based learning		Learner-centered, project-based learning, problem-based and transformative learning
Video Communication tool	Zoom*				
Course management system	CANVAS*				

*As of 2013, the institution started using MS Teams as part of the institutional agreement, and no difference was observed in terms of presenting the content

Creation of Supportive Documents. Additionally, a comprehensive handbook for instructors and an information pack for students have been designed to ensure consistency, efficiency, effective communication, and accountability. This is aimed at providing both students and instructors with a clear understanding of the curriculum's objectives, goals, and teaching strategies.

Discussion

In the face of global challenges like climate change, nuclear threats, inequalities, mass migrations, and the erosion of democracies, it's recognized that HEIs need to play a crucial role in advancing SDGs. This aligns with existing literature that supports the importance of integrating SDG-related education into academic curricula (Skene & Malcolm, 2019). Educational systems and institutions must undergo a significant transformation to equip the next generation with the tools to effectively tackle these issues. Our study further emphasizes the need for innovative strategies and collaboration.

Universities worldwide are working to incorporate SDGs into their operational and educational frameworks. Our study aligns with the literature in highlighting the compartmentalized nature of SDG implementation in HEIs (Filho et al., 2019). However, to drive meaningful change, collaborations with governmental bodies, management, and administrations are crucial. A more interdisciplinary academic culture is needed (Aleixo et al., 2018; Korhonen-Kurki et al., 2019) This can enhance the potential to implement SDGs and instigate vital political reforms.

The literature suggests the integration of ethics into management education. Thus, while infusing SDGs into curricula, it is essential to underscore the "ethical foundation of sustainability" (Avelar et al., 2019; Lovren et al., 2020). This includes aspects like human rights, dignity, gender equality, poverty reduction, and climate change mitigation, to bridge any existing gaps. To effectively promote and achieve SDG-related goals, HEIs need strong support from governmental bodies and administrative entities. These supports should be forward-looking and consider potential changes or

improvements in political systems with an awareness of potential future political reforms.

The cultivation of sustainability competencies becomes crucial in building capacities that empower individuals to critically assess prevailing values, policies, and practices (Vareda, 2020). This not only enables students to make informed decisions but also emboldens them to initiate transformative actions. These competencies also serve as a wellspring of inspiration, motivating students to emerge as proactive citizens adept at participating in the collective endeavor of forging a sustainable future. Armed with these refined abilities, students are prepared to recalibrate their actions with due consideration for long-term sustainability. Given that today's students are destined to occupy various roles within the workforce they possess the agency to infuse SDGs into their career trajectories.

The significance of fostering awareness regarding SDGs cannot be overstated; this imperative applies universally to students, faculty, communities, and institutions alike. Grounded in existing literature, the foundational step for HEIs lies in heightening students' consciousness regarding SDGs. While the integration of SDGs into daily practices may encounter specific challenges in developing nations due to various obstacles, including political instabilities, cultural and social factors, and infrastructure challenges, the strategic promotion of awareness within the existing curriculum proves to be a pragmatic approach. Aligned with innovative trends in university curricula that often rely on vertical, horizontal, and/or network-based structures, this approach aims to mitigate challenges efficiently without necessitating additional budget allocation. Our study contributes to the existing literature by providing a nuanced understanding of SDG implementation in HEIs. The identified

variations and challenges underscore the complexity of implementing SDGs, offering valuable insights for future research, policy, and practice.

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An Evaluation of the Spatial Repercussions of Student Mobility Policy in European Higher Education Area Using Network Analysis

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Abstract

The mobility of international students is a crucial tool for the European Union's goal of creating a unified European Higher Education Area. Despite the initial assumption that all European universities and students can benefit equally from cross-university study experiences, certain European regions have become disproportionately favored over time. This has resulted in specific geographical patterns, challenging the principles of equality and openness in the EU's higher education policy. To better understand these spatial effects and enhance the EU's mobility policy effectiveness, this research analyzes the network properties of Erasmus+, comparing it with traditional degree-seeking activities. Utilizing a modularity measure with data from the EU and UNESCO, the study reveals significant sub-regional variations in the Erasmus+ geographical network,

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posing challenges for policy implementation and limiting mobility alternatives.

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Introduction

Studying abroad is not new; even in the 20th century, talented, wealthy, and adventurous students often studied abroad for some courses (Teichler, 1996). For a long time, student mobility has been the best-known form of internationalization (Van Damme, 2001), and mobility is perceived as an indicator of quality (Mızıkacı, 2005). 1.3 million international students were undertaking tertiary-level studies across the European Union (EU) member countries in 2018 (Eurostat, 2020). However, international student mobility in higher education has become more than an individual endeavour in the last decades and has transformed into a common strategy for competing supra-national organizations, national governments, and higher education institutions. Yet, this raises questions about various dimensions and repercussions of policies to deal with mobility to meet this end, starting with geographical distribution and equal opportunities for all. It is also a matter of debate on what kind of theoretical and methodological approach can be taken in analyzing the implementation of mobility

policies by supranational and national institutions and how the big picture can be seen in the end (Watson, 2009).

It has been argued since Pressman and Wildaksky's (1984) long-ago article that the larger the scale at which policies determined by any institution are to be implemented, the more difficult it is to monitor how the principles underlying these policies are reflected in practice, and the more pronounced the effects of spatial dynamics on implementation become (Hupe, 2011). In the literature on policy implementation, such challenges are often associated with network governance and its spatial projections (Rhodes, 1997), and this theoretical approach is often utilized concerning education policies in particular. This is because, when analyzing the implementation of education policies, approaches based on seeing aggregate effects rather than isolating the effects based on the mobility and preferences of individuals and the structures of educational institutions may yield more substantive results (Ball, 2016).

Although there are various types of student mobility in tertiary education around the world, in terms of funding institutions, rules and regulations, and individual preferences, degree, and credit mobilities are the most widely recognized forms (Brooks & Waters, 2011; European Commission, 2018). "Degree mobility" or "diploma mobility" is the physical crossing of a national border to enroll in a higher education program to pursue the whole of an undergraduate or postgraduate degree. It requires a relatively long-term commitment to mobility, i.e., students are enrolled in a degree program to receive a diploma as regular students in the destination country. There are other types of short-term mobilities with relatively different expectations, such as credit mobility, a short-term circulation that typically emerges as part of an organized mobility program such as the Erasmus+

program. It is defined as a temporary education and a study-related internship abroad within the framework of enrollment in a higher education program to gain academic credits. The credits taken abroad are expected to be recognized at the home institution somehow, and the student will graduate from the home institution. If credit mobility is realized independently, out of a structured program via a student's application to a university abroad, these students are called "free movers." In general, although individuals may try these different types of mobility simultaneously or sequentially to take advantage of educational opportunities that come their way at different periods of their lives, the impact of structural conditions that enable or hinder their ability to take advantage of these opportunities is undeniable.

Although transnational and national authorities try to handle these different choices of mobilities via grant schemas, rules, and regulations for acceptance to accentuate their eminence in the world more effectively, there is mostly a complex decision-making process at work involving individual and institutional preferences and socioeconomic and cultural tendencies. Usually, this sophisticated dynamic interplay of movements among countries and universities results in the emergence of certain path dependencies of mobility between different actors, agencies, and geographies that can be elaborated upon using a social network analysis methodology, as there is a mutual relationship between sending and receiving students, academicians, and other types of degree seekers. Research on social networks purports the idea that, as can be seen in many other forms of international cultural, political, social, and spatial networks, the dynamics of networks are closely linked to institutional regulations, preferential attachments, and geographical components (Glückler, 2007; Ter Wal & Boschma, 2009). Moreover, the dynamics of an international social network and

its geographical reflections might have the potential to provide valuable insights for policy endeavors that are based on general trends of collaboration among agencies like universities (Cross, Borgatti, & Parker, 2002). Therefore, it can be inferred that social network analysis, taking different types of individual preferences for mobility and geographical dimensions of emerging sub-structures into account, has the potential to be instrumentalized as a policy analysis tool for the implementation of internationalization in higher education.

Hence, the main aim of the study is to elaborate upon the implementation of the EU's policy on mobility in higher education, taking differentiations of the existing degree and credit-seeking activities in Europe and looking into the networks and sub-networks created by these mobility activities on a European scale between different countries. Even though, as a result of the recent COVID-19 pandemic, virtual versions of higher education mobility have also become widespread, this study is limited to analyzing the physical mobility of students. Since the Erasmus+ Program, the main instrument of the European Union's mobility policy in higher education is essentially a credit-seeking activity, it is important to distinguish this policy from the degree-seeking opportunities that people usually choose to take advantage of in the absence of such a Program. Seeing the differences in spatial networking between Erasmus+ and other degree-seeking programs can help identify the main problematic areas in implementing the policy.

International Student Mobility in Europe

The EU is a significant policy-making supranational actor in the higher education sector. Aiming to become a powerful global player in higher education (Barkholt, 2005), the EU's general policy framework stands on the pillars of mobility and standardization to strategically create the

European Higher Education Area (EHEA). Bols and Nillson (2004) explain a sense of urgency recognized in the Bologna Process based on the fact that higher education is becoming increasingly globalized, and universities have started acting as an international hub of multi-sectoral development. Students from all over the world study everywhere, but mainly concentrated in North America, but not as much in Europe. It has been envisaged that with a more compatible system of higher education throughout Europe, more foreign students would choose Europe to study, and at the same time, students within Europe would become more "mobile." In 2001, the European ministers congregated in Prague and reaffirmed that efforts to promote mobility must be continued to enable students, teachers, researchers, and administrative staff to benefit from the richness of the EHEA, including its democratic values, diversity of cultures and languages, and diversity of the higher education systems (Prague Communiqué, 2001). As a consequence of the two decades of EU policy interventions, Europe is now one of the leading destinations for higher education students from within and outside Europe, with one in every two students in circulation being European (Campus France, 2020; Eurostat, 2020).

Yet, there has always been a discussion about the way the European Commission (EC) aims to steer European educational activities with a "top-down" approach and the extent to which the beneficiaries have room for "bottom-up" action through the projects they design and request for support (Teichler, 2002). As Marginson & van der Vande (2007) explain, whereas the Bologna Process emerged bottom-up and the role of the European Commission (EC) in the process was initially limited but over time gradually developed into a leading one, the EC took the initiative for the Lisbon strategy at the supra-national level,

and in its implementation, it exhibits a more top-down character. He also explains that this strategy cannot be characterized entirely as top-down since the formal competencies of the EC in education policy have not been enlarged, and the instruments used are thus not legally binding EU directives but take the form of recommendations, communications, consultations, or other working documents. The difference between top-down and bottom-up approaches to determining mobility policy is felt most effectively in exchange programs such as Erasmus+. Although it is thought that these programs should cover all of Europe without any threshold, it is known that there are natural barriers and capacity problems (Souto-Otero et al., 2013).

As a result of this mobility policy, the Erasmus+ program became the most extensively used credit-seeking student exchange program in the EHEA. The program was launched first in the 1987–88 academic year and included member states of the European Union, members of the European Free Trade Association (EFTA) countries (Norway, Iceland, and Liechtenstein), and candidate countries (the Republic of North Macedonia, the Republic of Turkey, and the Republic of Serbia) to increase the quality of higher education in Europe and strengthen the European Dimension in Higher Education in Europe. It is funded by the EU to link universities in the EU member states via mobility grants. There are no country restrictions in the Program on sending or receiving students since Erasmus+ is seen as a means of unification under the EHEA and the Bologna Process, and EU mobility targets have been set with the expectation that all member states will accord similar priority to this policy area (Brooks, 2018).

Since Erasmus+ started, the European Commission has tried to identify and monitor the profiles emerging in the Program countries regarding policy implementation based on the expectation of conducting reciprocal exchange between the countries. According to the Bologna Process implementation report (European Commission, 2018), there are three types of countries identified: net importers, i.e., the countries that receive more students than they send; net exporters, i.e., the countries that send more students than they receive; and countries that have balanced mobility. As can be expected, net importers are mostly advanced Western or Central European countries (e.g., the United Kingdom, Denmark, the Netherlands, Austria, Switzerland, etc.); the top net exporting countries are situated in the Balkans or Eastern Europe (e.g., Croatia, Poland, etc.); and some countries have a balanced incoming/outgoing ratio of mobile students in Europe (e.g., Ireland).

As a priority of the mobility policy in the EU, the concept of "balanced mobility" was used in several policy documents and Bologna reports. In 2012, the EHEA Mobility Strategy document (EHEA, 2012) was published to draft the mobility strategy for 2020, and it stated that the member countries should be encouraged to strive for more and better-balanced mobility of the EHEA with countries in and outside the EHEA. This document mentions the imbalance in mobility in 2012 and states that mobility flows should be analyzed carefully and systematically. Yet, in this document, mobility imbalance is seen as a significant problem for only degree mobility:

> *Our demand for more balanced mobility is directed particularly at degree mobility since it can have a sustained effect on the host and home countries, facilitate capacity building and cooperation, and may lead to brain gain on the one side and brain drain on the other. In order to be able to better evaluate the development of degree mobility*

> *in the EHEA and react in good time to possible negative consequences for certain countries and regions, we intend in the future to analyze the mobility flows systematically and regularly. If the findings show greater imbalances over longer periods, the governments concerned should jointly investigate the causes, consider carefully the advantages and disadvantages of the specific imbalance, and seek solutions if deemed necessary. (EHEA, 2012, p.2)*

Eight years later, the Bologna Process implementation report put forward a broader sense of mobility regarding the different positions of the countries involved in the mobility programs in using degree and credit mobilities alike:

> *Although the balance was and still is sought in degree mobility, reciprocity is a characteristic of credit mobility, where the funding bodies have, through the amount of scholarships they provide, the financial means to control the flows. As most degree-mobile students are free movers, governments have very few positive means for intervention (apart from the not-so-positive courses of action such as imposing quotas). Third, although balanced mobility is endorsed as an objective, particular types of imbalances have been not only tolerated but also actively pursued by many EHEA and non-EHEA countries. Generally, most countries have aspired over time to become 'attractive systems' in degree mobility (heavily imbalanced towards inflows) rather than to be in the situation experienced by 'closed' (low rates of outgoing students and even lower incoming) or 'limited' (high outward mobility, with excess) (European Commission, 2020a, p.128)*

When the change in the Commission's reports is followed, it can be seen that a clear concern has been expressed regarding the implementation of mobility policy on a European scale, and therefore, a call has been made to develop new analysis methods and

perspectives against unbalanced mobility. It can be said that, over the years of implementing the Erasmus+ program, specific mobility patterns emerged between countries that reciprocally exchange students based on the universities' inclinations to sign mobility agreements predominantly with other universities in certain regions of Europe. Under the auspices of the EU guidelines and the monitoring of the EU agencies, certain sub-networks emerged as a consequence, which can be taken as reminiscent of the pragmatic tendencies of individuals and the programmatic priorities of institutions that got involved in the mobility schemes. The effects of these sub-networks, whose existence can be felt even observationally, may cause serious doubts about the degree to which the European Higher Education Area is unified. Therefore, this research aims to address the network properties of the Erasmus+ credit mobilities while comparing them with the general scheme of degree mobilities in Europe, based on official statistics provided by the European Commission (2020b) and UNESCO (2022), to reveal the geopolitical structures and sub-regions concerning the EHEA.

Previous Studies Concerning Network Analysis of Student Mobility

As a part of the rising interest in internationalization in higher education, the dynamics and consequences of international student mobility in Europe and the world have become a popular inquiry in the last two decades. The relatively under-researched emerging "highly uneven geography" of mobility has been linked with various elements such as institutional changes, polarization, regionalization, and connectivity factors like language, spatial proximity, and established flows of labour, trade, and knowledge (Balaz, Williams & Chrancokova 2017). In this respect, various research methods and

social network analysis techniques were used to reveal relatively unexplored geographical and sectoral underpinning dimensions of mobility. For instance, Kondakci, Bedenlier & Zawachki-Richter (2018) conducted a social network analysis based on a worldwide dataset representing 229 countries. Their findings uncovered both the strong positions of traditional destinations for international students and the emerging regional hubs deviating from those in traditional destinations. Similarly, Shields (2013), Beine, Noël, and Ragot (2014), Macrander (2017), Yin and Yeakey (2019), and Hou and Du (2022) all tried to determine the main driving factor behind the mobility of students internationally, or what the pulling and pushing elements are behind their movement.

The European experience with mobility in higher education has also been occasionally addressed in several pieces of research using social network analysis since the Erasmus+ program provided an exchange program within a clearly defined administrative and transnational boundary. In some of these studies, Erasmus+ data is used as a mere statistical source to determine the mathematical properties of the network structure. For instance, Derzsi et al. (2011) analyzed Erasmus student mobility data in 2003 to reveal the network of professional connections between universities. Their analysis indicates that in a bipartite network of Erasmus connections, i.e., every country has some links with the majority of the other countries, there is an exponential degree distribution, a relatively high clustering coefficient, and a small radius, which denotes a high probability of the existence of clusters in the network.

While trying to test the hypotheses about different features of the Erasmus+ network and accompanying networks like Erasmus Mundus, some authors consider the influences of the departments,

university types, higher education quality, settlement types, etc., and experiment with different statistical and social network analysis tools. For example, Breznik and Gologranc (2014) used the advanced network analytic method—the island approach—to differentiate diverging groups of HE institutions in the Erasmus mobility program. Later, Breznik and Ragozini (2015) analyzed the Italian Erasmus agreements network through the multiplication of 2-mode networks and multiple correspondence analysis (MCA). Analyzing the Erasmus agreements helped classify different types of Italian universities in terms of their cooperation with other countries. In another study, Breznik (2017) analyzed the mobility of engineering students through social network analysis to identify more significant HE institutions in terms of departmental influence. According to the results, Spanish universities were shown to have the highest mobility regarding engineering departments. On the other hand, Marques et al. (2020) used social network analysis to research the Erasmus Mundus Program and used data from 561 participating universities. They identified some universities that actively facilitate the evolving Europeanization of higher education by strengthening inter-university networks through participation in this program at different cycles.

There are also some studies focusing on the geographical and spatial characteristics of the Erasmus+ network. For example, Van Mol and Ekamper (2016) analyzed the spatial distribution of Erasmus+ students in different European cities based on Erasmus+ student data from 2012 to 2013. The results reveal that the capital and second-tier metropolitan cities attract European exchange students. Breznik and Skrbinjek (2020), on the other hand, used the "R" software for statistical analysis and "Pajek" software for network analysis to handle Erasmus data from 2007–2008 to 2013–2014 and identified three groups of countries:

good receivers and senders, good receivers only, and good senders only. Gadar et al. (2020) delved deeper into the spatial characteristics, merged four different datasets on the Erasmus+ student mobility program, and investigated the flow of students, teachers, and staff between European higher education institutions between 2008 and 2014. All the institutional headquarters were geo-coded and characterized according to the attractiveness and quality of their contexts and environments. The interlinked datasets offered relevant information to increase the understanding of educational institutions' mobility patterns and attractiveness.

The recent literature on international student mobility in the world and Europe provided fruitful insights about the working of mobility networks regarding geographical location, spatial characteristics, institutional arrangements, educational process, etc., and has shown that social network analysis has significant potential in bringing out the implicit repercussions of mobility endeavours. Yet, most of these studies lack a public policy perspective in examining the repercussions of policy implementation and fail to bring together a multi-dimensional approach to address the comparative perspective, taking different types of mobilities into account. Although higher education mobility policies are based on assumptions about the behaviours of the individuals and institutions involved, social network analysis helps investigate whether or not the overall picture indicates achievements as a result of implementation in line with the intended policy objectives. For this reason, this study aims to focus on the spatial characteristics of higher education mobility networks and sub-networks in Europe by comparing Erasmus+ and other degree-seeking activities.

Methodology of the Study

In this study, social network analysis is used to analyze to what extent countries involved in the mobility programs are connected, the type of structure (homogeneous or heterogeneous), and sub-networks of the Erasmus+ credit mobility compared to degree-seeking mobility. While doing this, data presented in the Erasmus+ annual reports by the EC (European Commission, 2020b) is used to portray the credit mobility network of Erasmus+, and the UNESCO database (UIS, 2022) is used to obtain data about the flow of tertiary students between 33 EHEA countries and draw a degree-seeking mobility network. These databases cover the international flow of students at institutional and national levels in EHEA, including information about the country of origin and destination, and provide an opportunity to construct social networks to describe flow patterns and the strength of connections between different countries.

Like the Erasmus+ data, UNESCO data refers to all educational programs in tertiary education, which provides an opportunity to comparatively analyze the structures of two-way mobility between EHEA countries. It is assumed that both credit and degree mobility movements in the EHEA create unique and comparable patterns of network structures and sub-networks based on the interconnectedness of the sending and receiving countries. Therefore, the interconnectedness differences that emerged with the orientation of Erasmus+ and the usual degree-seeking regulations at the EHEA will be tested and revealed by modularity analysis. The network analysis was conducted using the modularity feature (Marcoux & Lussea, 2013; Newman, 2003; Reichardt & Bornholdt, 2007), which measures the structure of networks, measuring the strength of the division of a network into communities or clusters. As the main aim is to ascertain

whether or not geographical differences or unevenness emerge from the current mobility policies, analysis of the Erasmus+ and UNESCO data is utilized via trials of different modularity measures. This article represents a specific subset of student mobility, namely those involving only Erasmus+ Program countries, and thus differs from the general figures found in UNESCO's database. This selection was made to reflect the scope of our study and the specific nature of the student mobility being analyzed.

Both 2015 and 2019 data are available for Erasmus+ and in the UNESCO database, and in the analysis, Europe-wide mobility data were extracted from ERASMUS+ and UNESCO's general data on higher education student mobility. Yet, because a single set of highly representative data is sufficient to elaborate on the current structure of the networks, as a first step, the correlation between the 2015 and 2019 datasets is analyzed using the two-tailed Pearson test. As shown in Table 1, there is a high correlation between the distribution of the numbers of incoming and outgoing students in 2015 and 2019 to 33 countries in the EHEA in both databases; thus, more up-to-date 2019 data is preferred. Then, the mobility of both the credit-seeking and degree-seeking international students is analyzed using descriptive statistics and social network analysis tools. There were two critical issues to be concerned about in the analysis. First, the balance of incoming and outgoing students for each country in the EHEA should be considered to determine their weights in the network. Secondly, countries displaying similar behaviours of sending and receiving students to similar countries are classified under certain geographical sub-networks. After obtaining the necessary data sets to solve these problems, the obtained network structures were drawn on the map

with geo-coding, and the network structure characteristics were handled with modularity analysis.

Table 1.

Descriptive statistics and correlations of the data provided for Erasmus+ and degree-seeking students for the years 2015 and 2019

Variable	*n**	*M*	*SD*	*1*	*2*	*3*	*4*
1. ERASMUS+ (2015)	949	308.23	796.97	-			
2. ERASMUS+ (2019)	1056	317.53	882.75	.97**	-		
3. Degree-seeking (2015)	870	621.43	2072.31	.44**	.43**	-	
4. Degree-seeking (2019)	977	647.92	2056.64	.48**	.46**	.95**	-

** Correlation is significant at the 0.01 level (2-tailed)

* total number of connections between countries

Mobility Balance of Countries in the ERASMUS+ and Degree-Seeking Mobility

It is assumed that within the Erasmus+ Program and degree-seeking activities, there is a constant flow of students, and each country has a specific ratio of incoming and outgoing students from each of the 33 countries. Although in Table 1, the total number of students in mobility is used as a unit of analysis, in Table 2, since the position of each

country in the networks of mobility is needed for network analysis, the ratio of incoming and outgoing students is used instead. In this study, the ratio of the number of incoming students to the number of outgoing students is defined as 'the mobility balance factor,' showing whether a country's characteristics are more inclined toward an attraction point for students or a distribution center in the network (Table 2). This table analyzes the flow of students between European countries in the context of the Erasmus+ program and degree-seeking activities in 2019. The 'mobility balance' refers to the ratio of incoming students (those coming to a country for education) to outgoing students (those leaving a country for education elsewhere). It provides insights into whether a country is a net receiver of students, indicating a strong pull factor for international students, or a net sender of students, which might suggest a more outward-oriented educational engagement. The data in this table help to understand the patterns and preferences of student mobility in Europe, shedding light on the dynamics of international education and cultural exchange. Countries with a mobility balance value closer to 1 in both data sets have approximately closer numbers of incoming and outgoing credit-seeking and degree-seeking students. In addition, in countries with a value over 1–5, the number of incoming students is higher than that of outgoing students. Similarly, in countries with values below 1, the number of incoming students is higher than the number of outgoing ones. It has been determined that the countries that distort the balance in favor of incoming or outgoing students exhibit different characteristics in both data sets and act as an attraction point in the network. In the table and figure below, two-digit ISO country codes are used, and extreme values are shown in bold.

Table 2.

The Mobility Balance Data for Erasmus+ and Degree Seeking Mobility for 2019

Country Codes (ISO)	Erasmus+_ Incoming #	Erasmus+_ Outgoing #	Erasmus+ Incoming/ Outgoing	Degree_ incoming	Degree_ Outgoing #	Degree Incoming/ Outgoing
AT	8318	6954	1.20	54298	18837	**2.88**
BE	12534	9464	1.32	27050	13908	1.94
BG	1645	2665	0.62	12029	23214	0.52
CY	1465	743	1.97	4616	25554	0.18
CZ	10628	7240	1.47	17088	10216	1.67
DE	32855	42286	0.78	89666	97368	0.92
DK	5974	4107	1.45	25463	4144	**6.14**
EE	1881	1181	1.59	2169	2825	0.77
ES	49664	43678	1.14	26441	31320	0.84
FI	11980	5357	**2.24**	4626	9724	0.48

FR	27971	48772	0.57	34310	61152	0.56
GB	29677	18099	1.64	152640	20598	**7.41**
GR	5246	5630	0.93	16222	35364	0.46
HR	2450	2151	1.14	2257	6052	0.37
HU	6569	4328	1.52	13775	11415	1.21
IE	8386	3952	2.12	6220	13516	0.46
IS	783	352	**2.22**	765	2141	0.36
IT	27668	40805	0.68	14393	61890	**0.23**
LI	87	60	1.45	576	292	1.97
LT	3544	4612	0.77	1657	9272	**0.18**
LU	1396	594	**2.35**	2483	11475	**0.22**
LV	1899	2385	0.80	2731	3949	0.69
MK	281	407	0.69	32	4357	**0.01**
MT	2873	570	**5.04**	822	1131	0.73
NL	15376	14790	1.04	59541	15350	**3.88**

NO	7575	2926	**2.59**	3457	13844	**0.25**
PL	17348	14716	1.18	8340	21700	0.38
PT	15957	10381	1.54	5330	13545	0.39
RO	3665	8381	0.44	9193	27318	0.34
SE	10353	4618	**2.24**	11159	11294	0.99
SI	2821	2123	1.33	2741	3938	0.70
SK	2270	3664	0.62	7344	21068	0.35
TR	4171	17319	**0.24**	13662	25325	0.54
Average			**1.42**			**1.18**

At first glance, in Table 2, there are two main findings when mobility balances are analyzed for both data sets. First, most countries have a more balanced flow of students in terms of credit and degree-seeking mobility, meaning that the ratio of incoming students over outgoing students is between 0.24 and 5.04. This ratio indicates whether a country is more of an attraction point for students or a distribution center within the student mobility network. A ratio close to 1 suggests a balanced exchange, with similar numbers of incoming and outgoing students. Conversely, ratios significantly greater than 1 indicate countries that attract more incoming students than they send out, while ratios less than 1 denote countries where the number of outgoing

students surpasses the number of incoming ones. This mobility balance factor, therefore, offers a quantitative measure to understand the dynamics of student flow between countries in the context of Erasmus+ and degree-seeking activities. Notably, the average balance value in the Erasmus+ network is higher than that in the degree-seeking network, suggesting a more uniform distribution in the latter. These patterns highlight the varying roles of countries within the European higher education landscape, either as destinations or sources of student mobility, thereby contributing to the central and outlier positions within the overall mobility network. However, the average balance value of Erasmus+ is higher than the degree-seeking balance, meaning that the degree-seeking network is more uniformly distributed than the Erasmus+ network. Secondly, some countries have exceedingly higher or lower mobility balance values. For instance, regarding credit-seeking mobility, Finland, Iceland, Luxembourg, Norway, Sweden, and Malta receive exceedingly more students than they send, whereas Turkey receives exceedingly fewer students. Similarly, in the degree-seeking network, Austria, Denmark, Great Britain, and the Netherlands receive significantly more students than they send. In contrast, Norway, Macedonia, Luxembourg, Lithuania, and Italy receive significantly fewer students than they send. Some countries are credit-seeking destinations, and others are degree-seeking ones, as pointed out in the previous literature. This feature carried them to a central and outlier position in the mobility network.

On the other hand, if the mobility balances of these 33 countries are compared, it can be seen that the mobility behaviours of these countries indicate different groups of countries (Figure 1). In the first group, there are natural degree-seeking destinations of the higher

education market in Europe, and Great Britain, the Netherlands, Denmark, and Austria are on this list. Although these countries still receive relatively more incoming students than outgoing ones, the difference between incoming and outgoing students is significantly higher in degree-seeking mobility. Unlike them, the second group of countries, including Malta, Norway, Iceland, Finland, Sweden, Luxembourg, Cyprus, and Ireland, are natural credit-seeking destinations, meaning that they receive significantly more incoming students than outgoing ones through Erasmus+. Thirdly, there is also a group of countries such as Hungary, Czechia, Belgium, Liechtenstein, Poland, Spain, Germany, Slovenia, and Estonia, where mobility balances are relatively close to 1 in both degree-seeking and credit-seeking mobilities, meaning that there is not a significant difference between the numbers of incoming and outgoing students. Lastly, countries like Turkey, Romania, Italy, Lithuania, Bulgaria, Macedonia, Slovakia, and Latvia are student-sending countries since they receive significantly fewer incoming students than outgoing ones in both credit-seeking and degree-seeking.

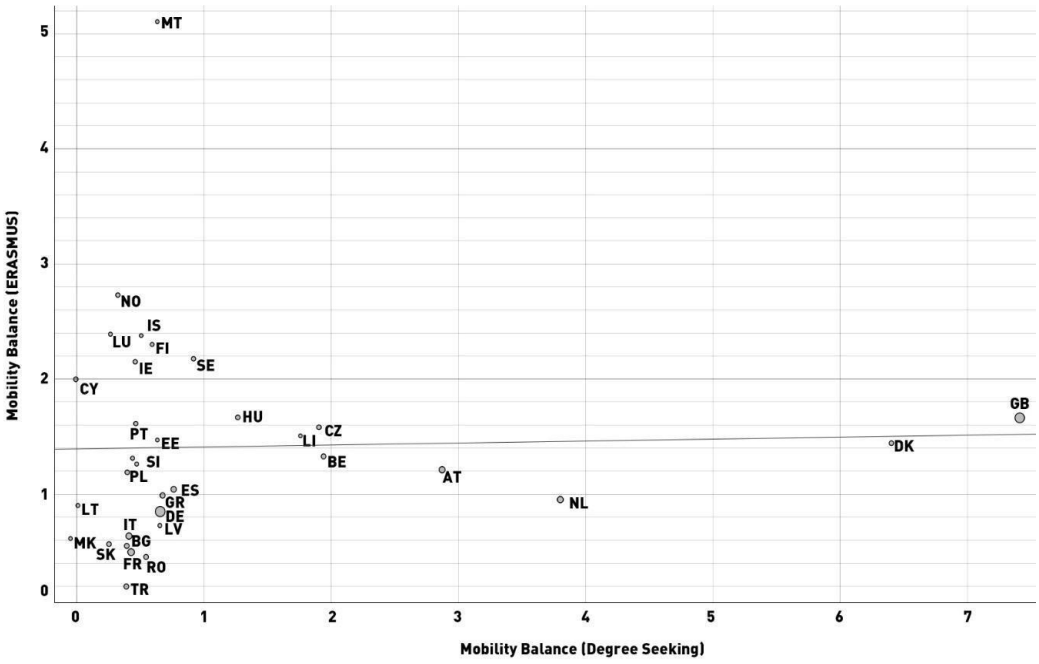

Figure 1. *Mobility balances of countries according to Erasmus+ and Degree-Seeking data*

This analysis shows that looking descriptively into the general number of student flows of degree-seeking and credit-seeking mobilities results, it can be said that each country has a specific behaviour both in the credit-seeking and degree-seeking networks. These behaviours may cause countries to create different sub-networks depending on which other countries they send students to and from which they receive students. Addressing the effects of geographical, cultural, and spatial elements in forming these sub-networks has the potential to provide important insights into the implementation of mobility policy. The next section uses modularity measures to determine significant

geographical sub-networks of countries in the Erasmus+ and degree-seeking networks.

Applying Modularity Measure to Explore Network Structures

In this study, network modularity proposed by Leicht and Newman (2008) is used to detect communities in a network using social network analysis. Network modularity divides the network into communities in which the number of edges within each community is greater than the number of edges that would be found by random chance. The modularity measure is computed as the number of links in each community minus the number of links in the same groups in a graph where the links were redistributed randomly (Newman, 2006). Consequently, each community is a subset of nodes more connected between them than with the rest of the nodes in the network. In this respect, modularity measures both represent more tightly-knit nodes of a network and nodes with similar types and quality of connections.

When the concept of modularity is adapted to real-life systems, it provides clues about the topological properties of a complex network, and it can also show clusters of similar nodes formed by the edges in the network. Finding communities in the geographic domain is a convenient algorithm for detecting interoperable clusters in the network. However, the analysis depends on the scale and number of countries involved. For instance, previous degree-seeking mobility research to investigate clusters at the global level with the modularity measure (Kondakci, et al., 2018) shows clusters different from this study as it included all countries in the analysis. Whereas, in this study, an algorithm provided by the Gephi Software is used to estimate the level of modularity and number of modules in the networks of Erasmus+ and degree-seeking.

The modularity algorithm is a pivotal tool in network analysis, particularly effective in discerning the overall structure of the network and identifying distinct subgroups or communities within it. In Gephi, the modularity value, which typically oscillates between -1 and 1, measures the network's division into modules. A higher modularity value indicates a network with well-defined and distinct modules, while a negative or low modularity value suggests that the modules within the network are either vague or poorly delineated.

Gephi's implementation of the Newman-Girvan modularity algorithm (Newman & Girvan, 2004) plays a critical role in our analysis. This algorithm focuses on identifying groups of nodes that exhibit denser connections among themselves compared to what would be expected in a randomly connected network. By seeking node partitions that accurately mirror the network's modular structure, the algorithm effectively unveils the community structure inherent in the network. Calculating a network's modularity score, or the Q value, is a crucial aspect of this analysis. The algorithm achieves this by contrasting the observed number of edges within the network against the expected number of such edges under a random connection scenario. The resulting modularity score, computed as the aggregate of these discrepancies, indicates the prominence and strength of the community structure within the network. The selection of the modularity algorithm for our study was guided by its ability to reveal complex community structures within networks. This capability is crucial for achieving these research objectives, as it allows for an in-depth understanding of our dataset's intricate relationships and subgroup dynamics. The modularity algorithm's effectiveness in identifying and characterizing these community structures makes it an

ideal tool for our network analysis, aligning seamlessly with the scope and needs of our study.

On the other hand, since the analysis scale is Europe, networking the clusters via geo-coded countries will allow us to see the effect of spatial proximity at the EU level. In addition to using the modularity measure, similar relationship patterns were found, and the geographic/spatial proximity was visualized on the map. Also, the density of the established ties was tested by including the weighted degree calculation on two different datasets. Thus, in the end, the more centralized countries of the student mobility networks and the structure of similar mobility patterns were detected. The analysis allowed the identification of the core and peripheral countries in the networks and helped to see countries with similar characteristics being included in a cluster according to different weighted modularity levels.

Student mobility within Europe was visualized with network diagrams produced using the Gephi software for both datasets. In the graphs drawn from the network analysis, the nodes in both networks show the countries that send and receive higher education students, and the node sizes are shown proportionally with the number of incoming students. Each node has a degree equal to the number of edges it creates with other nodes, and thus, the degrees are weighted according to the edge volume, which is the total number of students a country sends or receives. In Figure 2, Erasmus+ and degree-seeking mobility network structures can be seen concerning different numbers of sub-groups or communities. In general, in the Erasmus+ network, at all five levels of modularities or communities, there happen to emerge strong and coherent sub-groups, whereas, in the degree-seeking

network, the strong ties of the central countries in the network seem to be effective throughout all levels of the modularity measure.

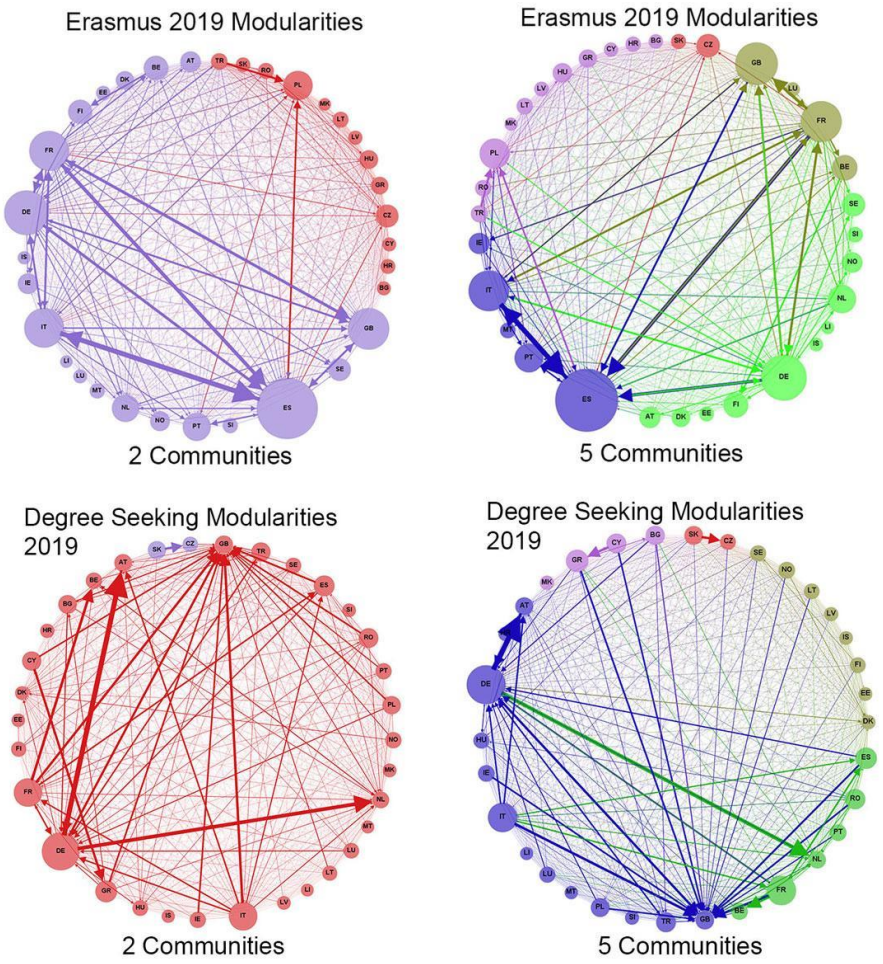

Figure 2. *Network diagrams for EHEA student mobility structure in 2019*

Modularity is also a topological attribute of spatial networks that refers to the degree to which modules dissociate from each other. The modularity of functional networks varies by country and is related to network connectivity patterns. Low modularity is associated with heterogeneous connectivity patterns in the network, which are more dissimilar from each other. Within the framework of the study, the modularity values of two different data sets were compared, and statistically significant classes were searched. The number of communities formed at different resolution values was evaluated using the community detection algorithm in Gephi software. In this context, low resolution means more communities, and high resolution means fewer communities. It can be said that the higher the resolution, the greater the number of communities. The significance of the divided community numbers is related to the modularity with resolution values higher than 0 in the network. Usually, there are many edges within a community; if the modularity with resolution value is close to 1, the differences between those clustering communities are also high. On the other hand, if a network partition is no better than random, the value is 0, and these communities cannot be topologically separated from each other.

Modularity compares the number of edges inside a cluster with the expected number of edges that one would find in the cluster if the network were a random network with the same number of nodes, where each node keeps its degree, but edges are otherwise randomly attached. In this context, it was assumed that values above about 0.30 would be a sign of modular structure (Newman & Girvan, 2004). Moreover, the definition of a good partition into communities should depend on the nature of the network and the dynamics taking place in it.

Thus, two clusters are used to extract two major distinctive connectivity bundles, and the connectivity patterns are compared within each network and among each other. To detect different clusters formed in the network at different modularity levels; 2, 3, 4, and 5 communities have been put forward for both data sets (Table 3). Communities with 2 and 5 classes that allow comparison are geo-coded and shown on the map (Figure 3). Thus, an insight into the network structures was provided based on geographical proximity. Modularity resolution values were iterated to reach different community numbers, and sub-networks were created for both datasets. In Erasmus+ network modularity with a resolution value closest to 0.3, two distinct classes are formed, meaning that at the EU level, two different topologically optimum communities can occur in the Erasmus+ network. On the other hand, the divisions of 2, 3, 4, and 5 communities created by the degree of mobility show that different groups can be distinguished apart from the Erasmus+ network.

The resolution of different levels of modularity shows that, in the degree-seeking network, there is a very strong center of the network, together with diverse communities formed according to different levels of modularity. This indicated the existence of strong sub-groups within the network, working in a heterogeneous fashion. Whereas in the Erasmus+ network, at each level of modularity, the most meaningful community of countries emerges based on a two-level modularity scale, and on the 3-4-5 modularity levels, the distinction of sub-groups is not significant, and the network structure is relatively homogeneous. It can be inferred that although the centrality of certain countries and heterogeneity of the degree-seeking network is significant, the structural division of the EHEA is more striking in the Erasmus+ network.

Table 3.
Modularity metrics for Erasmus+ and UNESCO Networks

	Number of Communities	Modularity with Resolution
1. Erasmus +	2	0.228
	3	0.094
	4	0.003
	5	0.005
2. Degree-seeking Mobility	2	0.564
	3	0.519
	4	0.357
	5	0.249

After the Erasmus+ and degree mobility data were divided into modularity clusters, they were geo-coded (Figure 3). They are displayed on the European map to make sense of the geographical relations and reveal the flow patterns and strength of the connection between countries. While the colors represent different classes in the analysis, the sizes of the circles of the countries are visualized according to the size of the incoming students. The reason why incoming students were taken as the basis for the analysis was to see the core-periphery relationship of the network, and it allowed us to test whether the countries with high numbers of incoming students have the power to influence the EHEA space at the regional level.

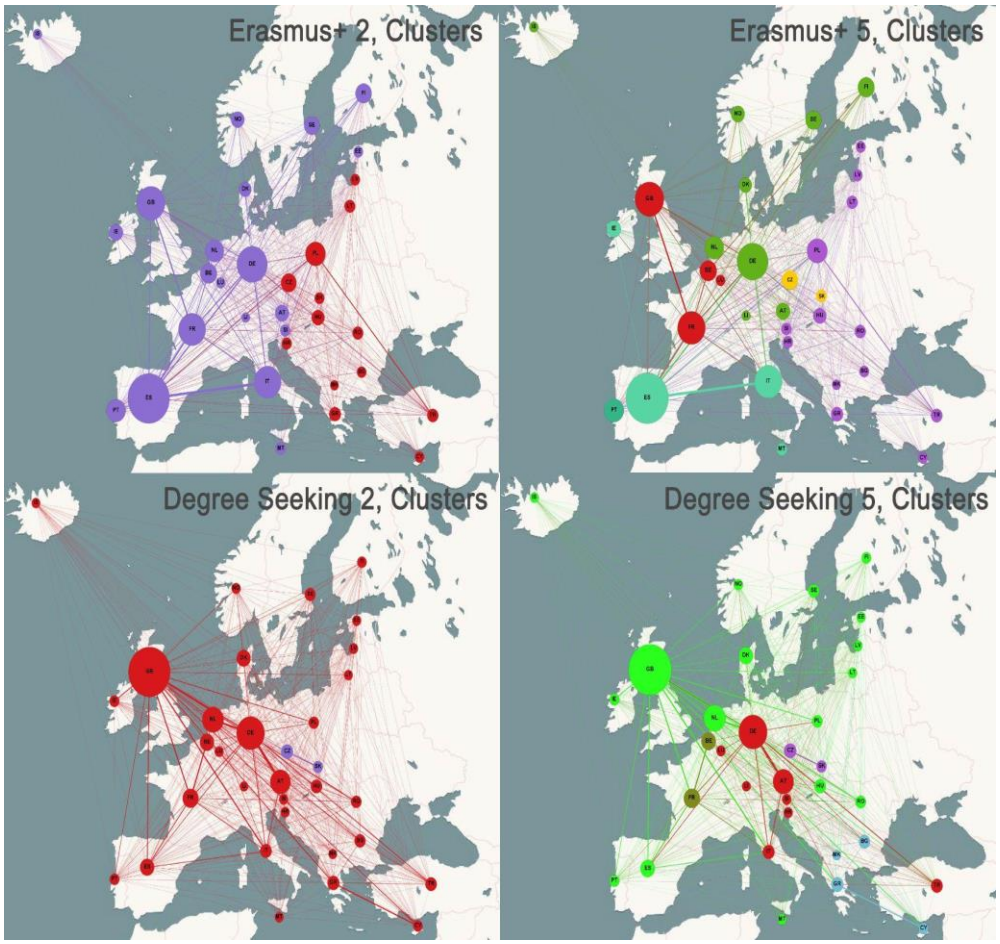

Figure 3. *Geo-coded Network diagrams for 2 and 5 clusters for Erasmus+ and Degree Seeking*

To make a geographical comparison, both networks are first divided into two clusters and analyzed regarding geographic/spatial proximity and connections. Thus, the existence of the communities that make up the basic distinction of both networks has been tested, assuming that the communities that will emerge regarding geographical context

provide important clues about the form and content of student mobility-based relationships. As a result of the analysis, it is seen that while the EHEA is divided into two sub-regions concerning the Erasmus+ Program due to geographical proximity, a predominantly single network emerges in the degree-seeking mobility network, with the only exception of the intense relationship between Slovakia and the Czech Republic, which can be seen as expected since they were the same country until recently. Later, both networks are divided into five modularity classes to reveal the intensity of regional relations in the EHEA geography and the operational characteristics of inter-country relations to further elaborate on lower-level regional geographical clustering in both networks. In the two modularity class evaluations, it was revealed that the clusters that emerged in the Erasmus mobility network were shaped in direct relation to geographical proximity, while the geographical character of the degree mobility network appears as a single network with a strong core group of countries, structured as a result of sectoral supremacy. In the Erasmus+ network, there is a clear distinction between Europe's Western and Eastern countries based on the incoming number of students due to credit-seeking mobility activities.

Thus, both the incoming centralities in the space are shown, and the connection structures are based on the regional proximity (neighborhood) in which these centers also appear. The relationship of the clusters with the spatial neighborhood pattern was tested by comparing the five classifications. In the Erasmus+ network, according to five cluster modalities, East and South European, Mediterranean, Scandinavian, Central European, and North European sub-regions can be seen, with a strong core of the UK and France countries (Figure 3). In 5 cluster modalities, in addition to proximity, it is easier to infer

other factors such as the influence of language, as in the cluster where Germany is located, or ease and expense of living costs, as can be seen in the clusters where Spain, Italy, and Poland are located. Unlike Erasmus+, in degree-seeking mobility, according to five cluster modalities, the influence of proximity looks negligible since, apart from a small cluster of Germany's hinterland, France and Belgium, and Hellenic-speaking Balkan Countries, the whole EHEA is under the heavy influence of the UK's higher education pull effect. It can be inferred that language, sectoral impact of countries, and long-term commitments are at work in the degree-seeking mobility network.

The geographical clustering of countries in degree and credit mobilities indicates intricate behaviours of individuals making decisions for their careers and universities, looking for suitable opportunities for their education and career. Regarding mobility principles of Erasmus+ and competitive sectoral conditions of degree-seeking, a short-term and more pragmatic mobility style can be distinguished from a long-term and more conformist one, which in turn causes a different network structure of countries involved in the exchange of students. Although there is the possibility of equal opportunity for all countries in higher education mobility by definition of EU policies, in the end, the use of these opportunities is based on the individual decisions of students and the institutional policies of the universities. The fact that a network analysis based on which countries within the EHEA send and receive students to which countries and for what purpose also points to the formation of differentiated geographical sub-networks is a situation that policy implementers in this field should consider.

Conclusion and Discussion

Policies developed by transnational organizations covering large geographical areas, such as the European Union, are expected to meet the needs of the entire geographical region and will be sufficient to overcome institutional and regional inequalities. This was the same purpose when creating student exchange policies in higher education. The European Union uses statements in the published reports (EHEA, 2012; European Commission, 2020a) showing no limits or restrictions within the scope of Erasmus+ Program cooperation and that it accepts that the Erasmus Program will be a policy tool for forming the European Higher Education Area. This program assumes that short-term student mobility will occur without restrictions for the European Union program and partner countries. This article investigates whether this is the case by examining official statistics (European Commission, 2020b; UIS, 2022).

In this study, statistics for both credit-seeking and degree-seeking students were included. Diploma mobility is a much more institutional type of mobility that dates back to the founding of universities, and some countries in the world have become centers of attraction in this mobility and expanded their sphere of influence by attracting more international students. Western English-speaking countries such as the UK, USA, etc. have maintained these positions for many years (Altbach, 2004; Altbach & de Wit, 2017; Buckner, 2019; Glass & Cruz, 2023; Kondakci et al., 2018). On the other hand, the Erasmus+ Program, which dates back to 1987 (European Commission, n.d.), is one of the most institutional and widespread programs of short-term mobility, and there is limited research (Breznik & Gologranc, 2014; Breznik & Ragozini, 2015; Derzsi et al., 2011; Gadar et al., 2020; Marques et al., 2020; Van Mol & Ekamper, 2016) on the student flows under this

program. Moreover, the previous research did not intend to find out the geographical clusters in Europe for the Erasmus Program. Therefore, in this study, research was conducted to compare the flow of the degree students with the Erasmus+ ones.

To make this comparison, a social network analysis was applied. This method of analysis is well-applicable to international student mobility research (Gadar et al., 2020; Glass & Cruz, 2023; Kondakci et al., 2018; Yin & Yeakey, 2019) to analyze the mobility patterns and flow of students between the countries and the push-pull factors of student mobility. The results of this study revealed that there is a significant geographical and structural difference between Erasmus+ and degree-seeking mobility in Europe.

In the Erasmus+ network, geographical proximity is significantly influential, causing it to be divided into western and eastern clusters, with some minor differentiation at a higher number of clusters. There are interesting similarities between countries such as Turkey and Poland regarding the number and origin of the students they receive. These findings are quite similar to the research (Stein, 2016) showing that the inequalities between different countries in terms of internationalization are also valid for the European continent (Bulut-Sahin & Brooks, 2023) against the periphery countries. Similarly, Van Mol and Ekamper (2016) also found out that some European capitals are more attractive for Erasmus+ students compared to other European cities.

Whereas in the degree-seeking network, the sectoral centrality of countries is more influential than their geographical positions, rendering the network more heterogeneous at a higher number of clusters. Apart from some minor sub-groups around France, Greece, and Germany, the whole network revolves around the significant

influence of the UK and Western European countries. The dominance of Western countries in international student mobility was also found by some other social network analysis (Glass & Cruz, 2023; Kondakci et al., 2018; Shields, 2013) and some other research using other methodologies (Altbach, 2004; Varghese, 2008; Wadhwa & Jha, 2014). Even the European Commission (2018) defined some Western or Central European countries (e.g., the UK, the Netherlands, Switzerland) as net importers and some Eastern European countries (e.g., Croatia, Poland) as net exporters in terms of degree-seeking mobility.

The analysis of this research showed that there are differing center and periphery country positions regarding different mobility frameworks, and geographical clusters exist for different types of mobility. The centrality of Western Europe is not new for degree-seeking mobility, since students prefer to study in these reputable countries for various reasons, like research capacities (Altbach, 2009). The network analysis for degree-seeking mobility can indicate that "the host university" might be more effective in students' decisions. In other words, degree-seeking students might have more career-oriented choices so that they can target universities located in countries with a central position in the network. It seems that quality and reputation considerations can be seen as reasons for their country preferences.

However, the findings of two clusters for the Erasmus+ mobility scheme are significant, which shows that the equity principle of European Union policy (EHEA, 2012; European Commission, 2020a) should be re-evaluated. Therefore, the results of the study show that policy-makers in the European Union should consider the reasons for these inequalities between different parts of Europe. Moreover, in terms of the Erasmus+ program, student mobility is based on

partnership agreements between the home and host universities (European Commission, n.a.). In other words, the students choose their host country among the signed partnership agreements. Recent research (Bulut-Sahin & Brooks, 2023) revealed that internationalization is nation-bounded, in other words, countries can only make partnership agreements with other countries, and the partnership choices are limited to their country' position. Similar to that, the flow and mobility patterns that were found in this study show that there are limitations for sending students.

This dual mobility pattern might pose some critical challenges for students by limiting study abroad destination choices and achievements. Therefore, there is a need for supra-national and national policy-makers, university leaders, and practitioners to develop new internationalization attitudes to go beyond the limitations of these networks. There are two important lessons to be drawn from this analysis. First, higher education mobility policies can lead to the emergence of unique geographical clustering, which can be revealed using social network analysis as a useful tool for policymaking. Secondly, an integrated policy approach takes both short-term pragmatic mobility preferences and longer-term degree-seeking mobility alternatives into account to allow flexible solutions that can eventually handle mobility inequalities and geographical clusters. This article opens up a new discussion on the current critical internationalization discourse (Critical Internationalization Studies Network, n.d.; De Wit, 2024; Jones et al., 2021; Stein, 2016), which emphasizes the inequalities in international student mobility, adding geographical cluster inequalities to the other inequality issues. As Crăciun & de Gayardon (2021) explain, the spatiality of knowledge

divides the countries as centers and peripheries, and more policies should be developed to de-center internationalization.

This research has some limitations since it only analyzes the patterns of mobility based on official statistics and does not include the voices of students or other stakeholders. Therefore, further research should be conducted to analyze the views of authorities and students to understand the reasons behind certain behaviours of mobility constituting these networks.

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External School Evaluation Feedback and School Self-Evaluation: What Feedback Is Provided?

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Abstract

Concerns with educational quality have led to the implementation of external school evaluation (ESE), based on the premise that these processes can provide valuable information about schools and, consequently, create conditions for improvement. Improvement is based on the feedback, commonly in the form of an evaluation report, resulting from evaluations, describing the reality of each school, and providing clues and guidance for action and progress. Nonetheless, ESE still has a relatively weak impact on overall school improvement. With this in mind, this paper focuses on the potential of evaluation reports to promote improvement, aiming to answer the question: What kind of feedback on school self-evaluation (SSE) does ESE provide to schools? Focusing on the Portuguese case, the paper analyses the feedback regarding school self-evaluation provided in evaluation reports from the northern region of Portugal. The study concludes that the feedback provided in the reports is mainly descriptive and generic, referencing issues that apply to all schools rather than targeting issues specific to each school. This leads to the hypothesis that the vagueness of ESE feedback can explain the limited contribution external evaluations make towards SSE improvement in particular, and school improvement overall. The example of Portugal

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and self-evaluation can help bring to light where ESE processes are underperforming and require investment to achieve their goals.

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Introduction

The end of the 90s saw growing concerns over educational quality due to the greater attention being paid to students' learning and academic success, as well as to changes in school governance as powers were devolved from the state to the schools and school autonomy increased (Faubert, 2009). Governments transferred decision-making power to schools, while maintaining responsibilities for education funding and regulation (Figueiredo, Leite & Fernandes, 2018). This led to the establishment of accountability processes to ensure, as well as to promote, the quality of the educational service provided and to verify whether the resources invested were appropriately used and reached the desired outcomes (Figueiredo, Leite & Fernandes, 2018).

These concerns led to a rise in the implementation of quality assurance processes, which were considered helpful in assessing the quality of schools and supporting educational improvement (Ehren & Visscher, 2008; Figueiredo, Leite & Fernandes, 2018). As so, many countries implemented quality assurance systems based on school evaluations, either in the form of external school evaluation (ESE), school self-

evaluation (SSE), or a combination of both (Eurydice, 2004, 2015; Faubert, 2009).

The potential of evaluation to promote improvement is associated with the collection and analysis of data, thus generating knowledge and identifying needs and possibilities for action (Coe, 2009; Figueiredo, Leite & Fernandes, 2016a, 2016b, 2018; Gaertner et al., 2014; García, 2013; Leite et al., 2014; Lindahl & Beach, 2013; Schildkamp et al., 2012).

School self-evaluation processes can be defined as processes of evaluation that are designed and developed within schools by their own staff and emerged as a means for school management and improvement as well as accountability and regulation (MacBeath, 2004; Nevo, 2001).

Despite their increasing relevance in the drive for educational improvement, self-evaluation processes are still challenging for many schools (Figueiredo, Leite & Fernandes, 2018; Figueiredo, 2023). One of the most prevalent challenges refers to the difficulties faced by school staff stemming from insufficient knowledge and training, lack of knowledge regarding methodological procedures and process design, and overall insecurity. A fundamental issue with self-evaluations is that, in many cases, as self-evaluations have become mandatory, or at least highly recommended, schools and school staff are expected to develop self-evaluations as if this was already a well-known process, and without support or help (O'Brien, McNamara & O'Hara, 2014). The need to support schools with self-evaluation is well documented in literature (Leite, Fernandes & Rodrigues, 2020; Leite & Marinho 2021; Leite, Rodrigues & Fernandes, 2006; MacBeath, 1999; Nevo, 2001; O'Brien, McNamara & O'Hara, 2014). Some authors explore the role of a critical friend (Leite & Marinho, 2021; MacBeath, 1999; O'Brien, McNamara & O'Hara, 2014), someone outside the

school who collaborates with the staff, helping them debate and reflect on the matter, providing an outside perspective and support in process design and development.

External evaluations provide another possible source of support. In many countries, external evaluations are, amongst other objectives, aimed at fostering self-evaluation in schools as a means of assuring and improving educational quality. In these cases, external evaluations include an appraisal of schools' self-evaluation processes and results. The feedback provided by such evaluations can, with the right characteristics, provide support and help schools to improve SSE. In fact, scientific literature shows that SSE is often one of the issues scrutinised by ESE processes, and one where external evaluation have a more significant impact (Brown et al., 2018; Ferreira, 2016; Sá, 2018; Sampaio et al., 2016; Seabra et al., 2022).

Nonetheless, research has shown that ESE has a somewhat limited influence on school improvement, often due to the feedback provided and the insights it offers (Penninckx & Vanhoof, 2015). The range of any such improvement depends on the quality of the information provided in the feedback to schools (Behnk & Steins, 2017; Gustafsson et al., 2015). Also important is the feedback communication channel, which in the case of ESE is often an evaluation report. For reports to be a helpful source of feedback, they must provide not only a description of the situation, but also an evaluative judgment as well as some suggestions and guidelines for future action (Altrichter & Kemethofer, 2015; Gustafsson et al., 2015; Quintelier et al., 2018).

In Portugal, some authors state that one of the most significant impacts of ESE in schools regards self-evaluation processes (Bidarra et al., 2018; Ferreira, 2016; Figueiredo, Leite & Fernandes, 2018; Sá, 2018; Sampaio & Leite, 2016; Sampaio et al., 2016; Seabra et al., 2022). However, SSE

processes remain weak in Portuguese schools, lacking consistency broadness and impact, according to the general reports of external school evaluations (IGEC, 2011, 2018). One possible answer can be found in the nature of the feedback offered to schools as a result of external evaluations.

With this in mind, this paper focuses on the potential of evaluation reports to promote improvement, aiming to answer the question: What kind of feedback on SSE does ESE provide to schools?

Focusing on the Portuguese case, in which reports are the primary source of feedback in the ESE process, the paper analyses the feedback provided in evaluation reports regarding school self-evaluation, exploring the type of information provided, the presence or absence of feedback, and how this feedback can provide clues and suggestions for improvement.

Although focusing only the example of SSE, this paper's conclusions can also help those involved in ESE recognise how evaluations contribute to improvement, encouraging them to reflect on and revisit their procedures.

External School Evaluation and School Self-Evaluation: An Ongoing Relationship

The debate on the relationship between external evaluations and internal/self-evaluations has long been a feature of research into the subject (MacBeath, 2004, 2008; McNamara & O'Hara, 2012; Nevo, 1994, 2001; Vanhoof & Petegem, 2007). In many countries, the two forms of school evaluation coexist, leading to a discussion of the nature of this coexistence and/or how external and internal/self-evaluations can be articulated with one another.

MacBeath (2004) relates the origins of school self-evaluations, highlighting the pressure of external evaluations. The author refers to accountability concerns and demands, which led to political actions such as the implementation of external inspections or evaluations that more recently shifted to a combination of external and internal evaluations. This shift led to internal or self-evaluations becoming the main focus of external evaluations. Inspectorates or external evaluation teams draw primarily on information generated by the school self-evaluation process and appraise it. In this scenario, self-evaluations are somewhat subordinate to external evaluations.

Other authors refer to the relationship between ESE and SSE as part of the "whole school evaluation" approach, in which external and self-evaluations are two parts of a whole (McNamara & O'Hara, 2012; McNamara, O'Hara & Aingléis, 2002).

Literature also presents this relationship as one of collaboration, a symbiotic relationship in which both kinds of evaluations can benefit from one another. External evaluations can benefit from self-evaluation in a variety of ways (Nevo, 2001; Vanhoof & Petegem, 2007). The knowledge and information generated by self-evaluation can provide a deeper and contextualised perspective that is at times noticeably lacking. At the same time, this internal perspective can help give meaning to data and information gathered through external evaluation. Schools with a culture of self-evaluation are also more likely to be less resistant to external evaluations and feedback, using evaluation for their own benefit (Nevo, 2001; Penninckx et al, 2016; Vanhoof & Petegem, 2007).

Likewise, internal/self-evaluation benefits from the existence of external evaluations in a number of ways. External evaluations can serve as a stimulus for internal/self-evaluations (Nevo, 2001; Vanhoof

& Petegem, 2007), particularly if schools are subjected to external evaluations, or if in external evaluations, self-evaluation emerges "as a prior condition or counterpart" (Nevo, 2001, p. 98). Likewise, the image of the school constructed by external evaluation can help to broaden the analysis of the school made by internal/self-evaluations and provide new insights and information, while also contributing information about the national reality. External evaluations can also provide validation and help to legitimise self-evaluation when the latter is treated as an equally important process (Nevo, 2001; Vanhoof & Petegem, 2007).

External evaluation also promotes SSE improvement by setting expectations (Gustafsson et al., 2015). The use of evaluation frameworks helps schools become aware of the criteria they are judge upon, and work towards meeting the criteria. However, a number of conditions should be met for this to be achieved. For example, evaluations should adopt a formative attitude (Nevo, 1994) and be focused on providing understanding rather than judgement or scores (Nevo, 2001). Moreover, because general and vague judgements contribute little to improvement, evaluations should provide constructive feedback and recommendations. As Nevo states "providing sound, specific and practical recommendations is an integral part of evaluation" (2001, p. 101).

Evaluation should focus on specific and pertinent information (Nevo, 2001) and include an appraisal of different aspects of the school's functioning by compiling information derived from different sources, methods, and criteria (Nevo, 1994). Evaluations, in any form, should also be humble and respectful while also acknowledging their own limitations (MacBeath, 2004; Nevo, 2001). Evaluation is a process rather than just a single moment in time, entailing data collection,

analysis, feedback, negotiation, and dialogue, meaning that there should be a relationship between internal and external evaluators that features open channels of communication. Evaluation must be clear and fair to all parties, and if the aim is to promote improvement, all parties should bear responsibility and engage in efforts to reach that aim. This means not only that schools should try to reflect on the evaluation results and implement changes, but also that evaluators should provide expertise and support to schools (Petegem & Vanhoof, 2007).

Recent research has shown that, although still in a place of subordination, SSE is one of the main school areas to benefit from ESE (Brown et al., 2018; Ferreira, 2016; Sá, 2018; Sampaio et al., 2016; Seabra et al., 2022). This impact comes largely from the pressure exerted by ESE and the information it provides.

In the first case, research has shown that external evaluations become a source of pressure that leads schools to engage in self-evaluation, either for accountability purposes or to be better prepared for the external scrutiny they are about to endure. In the second case, schools receive useful feedback from external evaluations regarding the strengths and weaknesses of their self-evaluation processes. The feedback provided can help schools to identify issues that undermine the quality of their SSE processes, whether related to SSE design and planning, the methodology and/or procedures followed, data analysis, or data use, of which internal agents might be unaware (Leite et al., 2020; Nayir & McNamara, 2014). Based on such feedback, school leaders and staff are able to change their practices and improve SSE. However, the potential for improvement can become compromised unless feedback meets certain criteria.

Attention should be paid as to whether ESE provides sound, rigorous, and specific information or becomes a controlling mechanism that leads to standardisation of SSE processes by imposing, even if indirectly, a framework to be followed, consisting of the criteria used to appraise SSE (Brady, 2019; MacBeath, 2004, 2008; Richards, 2004; Sousa & Terrasêca, 2015)

Evaluation Feedback: Do's and Dont's

As stated previously, the potential for external evaluations to promote improvement is closely linked to the feedback provided, which is expected to be used by schools to take action (Behnk & Steins, 2017; Gustafsson et al., 2015). However, research has revealed a number of characteristics that feedback must exhibit if it is to be useful for schools.

First, the feedback must be *clear and understandable* (Devos & Verhoeven, 2003; Olafsdóttir et al., 2022; Schildkamp, 2019). There are two aspects to this parameter. First, when evaluations follow a specific framework or set of criteria, the feedback should later address those criteria. If there is no mention of the framework, it may not be clear what was evaluated and what the judgments made and conclusions reached refer to. Therefore, the clarity of feedback is related to its alignment with the evaluation criteria (Behnk & Steins, 2017). Second, the discourse must be direct, objective, and easy to follow by different audiences to be understandable and clear. In practical terms, the feedback must clearly identify the issues found, provide objective recommendations addressing the issues found, and avoid technical wording (Gustafsson et al., 2015).

Second, it must be *contextualised*, making clear and concrete references to the specific reality being evaluated (Behnk & Steins, 2017; Coe, 2009; Petegem & Vanhoof, 2007; Quintelier et al., 2020; Schildkamp, 2019;

Verhaeghe et al, 2015; Visscher & Coe, 2003). This means that the feedback should provide examples of issues and aspects found in each context and address them directly, avoiding vague references or a generic discourse that could equally apply to very different situations. In other words, despite the generalist nature of evaluation frameworks, ensuring their applicability to all schools, the information generated in the evaluation must refer to how each school is doing on each criterion, with specific references to school characteristics, functioning, strengths, weaknesses, and other relevant aspects.

Third, it must *provide clues for future action* (Behnk & Steins, 2017; Ehren & Visscher, 2008; Richards, 2020; Schildkamp, 2019; Visscher & Coe, 2003). Considering the aim of evaluations to promote improvement and the role of feedback as the main mechanism to help achieve such aims, the information provided in feedback must go beyond the "simple" description of situations to include guidance on what changes are needed and point towards solutions for problems found (Devos & Verhoeven, 2003; Olafsdóttir et al., 2022; Penninckx et al, 2014; Quintelier et al., 2018; Schildkamp, 2019). That is to say, feedback must be constructive and formative (Altrichter & Kemethofer, 2015; Figueiredo, Leite & Fernandes, 2017; Vanhoof & Van Petegem, 2007).

Fourth, feedback must *provide useful and meaningful information* (Gutwirth, Goffin & Vanhoof, 2021; Petegem & Vanhoof, 2007). This information should be relevant for the daily functioning of the school, meet the needs of individual schools (Verhaeghe et al, 2015), and refer to up-to-date information and data (Petegem & Vanhoof, 2007). This characteristic is closely related to feedback being contextualised. However, contextualisation does not, in itself, guarantee that feedback is meaningful and useful. It must also be relevant, addressing issues

and answering schools' needs and difficulties (Ehren & Swanborn, 2012; Datnow & Hubbard, 2016; Geel, Visscher & Teunis, 2017).

Fifth, attention should be paid to *how feedback is delivered* (Behnk & Steins, 2017), meaning that the channel of communication must be appropriate to the target audience, and that the message to convey is aligned with the characteristics explored above.

Research shows that with these characteristics, feedback is more likely to be used effectively by schools, their leaders, and professionals to learn and promote change and improvement (Behnke & Steins, 2017; Visscher & Coe, 2003).

School Self-evaluation in Portugal: From Legislation to the ESE Framework

In Portugal, school self-evaluation processes do not follow a common structure in all schools. In fact, as these processes are expected to be tailored to the specific characteristics of each school, no official guidance suggests how SSE should be developed. However, there are some references in the legislation regulating school evaluation that provide insight into what general features are expected of SSE. Likewise, the criteria followed in external evaluations of SSE provide clues as to what is valued in self-evaluations and what is expected from these processes.

Article 52 of the Portuguese Basic Law of the Education System, without referring to any specific form of evaluation, states that:

> *The education system must be continually evaluated, considering educational and pedagogical, psychological and sociological, organisational, economic and financial aspects, as well as those of a political-administrative and cultural nature.*

In Law no. 31/2002, which approves the education and non-higher education system, thus regulating school evaluation in Portugal, Article 6, devoted to self-evaluation, states that:

> *Self-evaluation is compulsory, is carried out on an ongoing basis, has the support of the educational administration and is based on the following terms of analysis: a) Degree to which the educational project has been implemented and the way in which the education, teaching and learning of children and students is prepared and implemented, taking into account their specific characteristics; b) Level of implementation of activities that provide educational climates and environments capable of generating the affective and emotional conditions of school life that are favourable to interaction, social integration, learning and the integral development of children's and students' personalities; c) Performance of the administration and management bodies of schools or school groupings, covering the functioning of school management and educational guidance structures, administrative functioning, resource management and the vision inherent in educational action, as a project and action plan; d) School success, assessed through the ability to promote school attendance and the results of the development of students' school learning, in particular the results identified through the learning assessment systems in force; e) The practice of a culture of collaboration between members of the educational community.*

From the excerpt above, it is possible to conclude that although no clear guidance is provided as to how SSE should be developed, it is still expected that the processes address the schools' functioning as a whole, from organisational aspects to management and pedagogy.

In the Portuguese process of external school evaluation,[1] school self-evaluation processes are assessed, their improvement being one of the main goals of ESE, as stated on the website of the General Inspectorate for Education and Science (IGEC) and in related structural documents (IGEC website[2]; IGEC, 2010, 2016, 2019). Each ESE cycle (see footnote for clarification) follows specific guidelines and frameworks. Figure 1 shows a synthesis of the criteria regarding SSE followed in each cycle.

[1] The Portuguese process of external school evaluation is developed by the IGEC in cycles of 4 years, on average, during which all schools are evaluated. At the end of each cycle, the process is evaluated and reformulated. It is currently in its third cycle, which began in 2018. Evaluations follow a specific framework of evaluation domains and topics. The process concludes with the publication of an evaluation report sent to schools and made publicly available on the IGEC website, with feedback and classification in each domain evaluated Classifications can be Insufficient, Sufficient, Good, Very Good, Excellent.
In the first ESE cycle (2006–2011), the topics were results, educational service provided, school management and organization, leadership, and school capacity for self-regulation and improvement, which includes the SSE process. In the second cycle of ESE (2011–2017), the topics were results, educational service provided, and leadership and management, which covers the SSE process. In the third cycle of ESE, currently in place (2018–), the topics are school self-evaluation, leadership and management, results, and educational service provided.
[2] IGEC website: https://www.igec.mec.pt

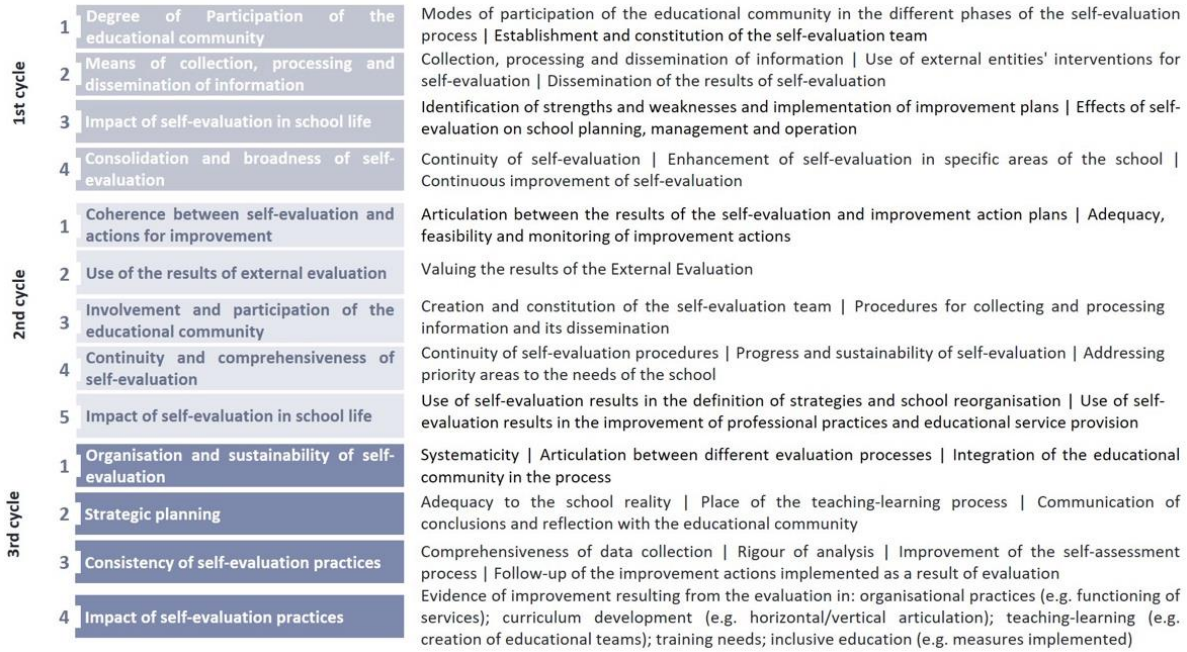

Figure 1. *Synthesis of the criteria followed in each cycle regarding SSE (own production)*

As can be seen in Figure 1, in the first cycle of ESE, four main aspects of self-evaluation were analysed: the involvement of the educational community in the process and the composition of the evaluation team; the methodology, including the reporting and dissemination of results; the impact of the SSE on school improvement; and the level of consolidation and scope of the process. In the second cycle of ESE, the criteria were expanded, and descriptors slightly changed, with the following three criteria retained: the participation of the educational community, the consolidation and scope of the SSE process, with emphasis on its progress and adequacy to the specific reality of the school, and the impact of SSE and the use of its results towards improvement. Two new criteria were added, namely, the coherence between SSE findings and actions for school improvement, which

complements or reinforces the focus on impact, and the relationship with external evaluation, especially regarding the use of ESE inputs for school improvement. SSE gained new criteria and a new organisation in the third cycle, the framework currently in use. The impact of SSE remains a criterion, although it is now analysed based on evidence of improvements resulting from the evaluation carried out in different fields of school action. The criterion of consolidation and sustainability of self-evaluation has also remained, as evidenced by its cyclical continuity, the participation of the educational community, and the articulation of SSE with other evaluative processes in the school. New criteria were added, such as the coherence of the SSE, with emphasis on the rigour and comprehensiveness of data collection and the evolution of the process itself, and strategic planning, which analyses the adequacy of the SSE process to the reality of the school, and the use of SSE for extended reflection.

Despite the differences and specificities in the three cycles, their common features together provide an image of what is expected of SSE: participation by the school community; rigour in collecting, processing, disseminating, and using information; articulation with other internal or external evaluation processes; broad, sustainable, systematic, and progressive evaluation; strategic identification of critical aspects; and impact, with effects on the planning and implementation of actions and improvements.

These are the topics around which knowledge and evaluation are produced and, therefore, expected to be addressed in the reports and feedback provided to schools, thus supporting change and improvement.

Method

This study followed a qualitative approach based on document analysis (Bowen, 2009), using thematic content analysis (Amado et al., 2017; Bardin, 2011) of all existing evaluation reports from schools in the northern region of Portugal since the first cycle of ESE in 2007 up to 2020, focusing only on the parts addressing the school self-evaluation processes. Reports were distributed as follows: 376 reports from the first cycle of ESE, 287 reports from the second, and 38 reports from the third. All documents were retrieved from the IGEC website.

The analysis framework stems from the characteristics of feedback explored in the previous section, which helped to pre-determine some thematic dimensions of analysis, combined with categories emerging from the documents, which account for the main themes in focus in the different documents. Reports were analysed through content analysis and frequency content analysis (Bardin, 2011).

The content analysis exploring and interpreting the text focused on the nature of the discourse, with two foci: 1) alignment between the evaluation frameworks' criteria and the evaluative judgements made in the reports, and 2) the generic or context-driven nature of the recommendations.

Table 1 presents the analysis rationale.

Table 1.
Analysis rationale (own production)

Feedback characteristics	Questions asked in the analysis	Focus of analysis	Other focuses	Procedure followed
Clarity and understandability	Does the report refer to the evaluation criteria present in the evaluation framework?	Alignment between the evaluation frameworks' criteria and the evaluative judgements made in the reports		Content analysis of the reports, focusing on the section regarding SSE
Providing clues for future action	Does the report make recommendations on what can be done to solve problems found, or only generic considerations?	Frequency analysis of the presence or absence of recommendations	Frequency of generic recommendations	Frequency content analysis of the reports, focusing on the section regarding SSE Detail analysis by ESE classification
			Frequency of specific recommendations	
Contextualised	Does the report make concrete references to the specific reality of the school evaluated or only generic considerations in the recommendations made?	Nature of the recommendations found: generic or context driven		Content analysis of the reports, focusing on the section regarding SSE

The analysis of the nature of the recommendations consisted of a content analysis of the discourse in each report through coding and categorisation. The unit of meaning considered for coding was the sentence or paragraph that conveys an idea. This level of analysis was targeted at three stated characteristics of feedback: *clear and understandable*, *contextualised*, and *providing clues for future action*. The

analysis focused on whether the discourse was intended as guidance or only of a descriptive nature. When recommendations were found, the analysis appraised if the report presented a description of the school's situation with detailed recommendations, targeting specific aspects for each school, and providing clues for problem-solving and improvement in a constructive/formative way, or if the discourse was vague and generic, and thus applicable to any school. Excerpts from reports are provided as examples. Table 2 presents the structure of content analysis.

Table 2.
Structure of analysis (own production)

Dimension	Category	Subcategory (emergent)
Alignment with evaluation framework/criteria	-------	-------
Recommendations for future action	Presence	-------
	Absence (only description)	-------
Nature of recommendations	Generic	-------
	Specific (formative/constructive)	Constitution of SSE teams
		Participation of the educational community in SSE
		Methodology
		Use of SSE conclusions/results

In this second focus of analysis, a frequency content analysis was made, aimed at identifying the presence (or absence) of recommendations in the ESE reports, detailing, when found, whether the recommendations were generic or context-driven. Based on the assumption that schools with lower classifications were more likely to receive recommendations to support improvement, the frequency analysis was detailed by classification.

The only aspects of feedback that were not analysed in this paper regard *how feedback is delivered* and *the provision of useful and meaningful information*, as these would demand data collection from schools.

Results

Alignment between the evaluation frameworks' criteria and the judgements made in the reports

The first aspect to emphasize is the consistency between the evaluative judgements in the reports and the criteria and descriptors from the evaluation frameworks.

In general, there is coherence between the reports and the criteria, as illustrated by the following excerpts:

> *The self-evaluation process is structured and coherent and has enabled the school group to relaunch its educational action, defining strategies for improvement in line with the guidelines and objectives set out in the SP. It needs, however, more active participation of the educational community and an extension to other areas. (Example from an ESE first-cycle report)*
>
> *Self-evaluation practices are disseminated in the different structures and intermediate bodies. The self-evaluation report […] demonstrates that the school is concerned about evaluating the areas considered*

> *structural to its functioning […] Although there are intentional and systematic self-evaluation practices, there is still a lack of improvement plans to make the impact visible. (Example from an ESE second-cycle report)*
>
> *The Cluster has been developing a self-evaluation process, articulated with the educational project […] The current self-evaluation process is based on a SWOT analysis […] with consultation with the educational community […] It is worth highlighting the impact of evaluation practices […] that promote improvement. (Example from an ESE third-cycle report)*

Based on the frameworks, it would be expected that reports addressed: 1) the quality of the SSE processes and methods used, 2) the impact on school improvement, 3) the participation of the education community in SSE, and 4) the coverage of the analysis carried out, and all related descriptors. The excerpts above show that the evaluative judgements were formulated based on those criteria, describing how schools are developing their SSE processes and their impact on school improvement. They also addressed the participation of the educational community, the articulation between school processes and structures, the coherence of practices (methodology), and the impact of the SSE on the functioning of the school (improvement).

Having responded to each of these aspects of the school's SSE, the reports can be said to demonstrate an *alignment with the evaluation framework/criteria*.

Presence or absence of recommendations in reports

Although the information provided in reports serves as the basis for improvement processes, more is needed for institutions to move forward, particularly in the form of constructive and formative

feedback, translated into recommendations for future action and clearly directed at the specific reality of each school. Figure 2 outlines the presence of recommendations in the evaluation reports in each cycle, distributed by the classification given to the domain of self-evaluation. Figure 3 furthers the analysis by focusing on the cases where recommendations were found, showing whether those are generic or context-driven.

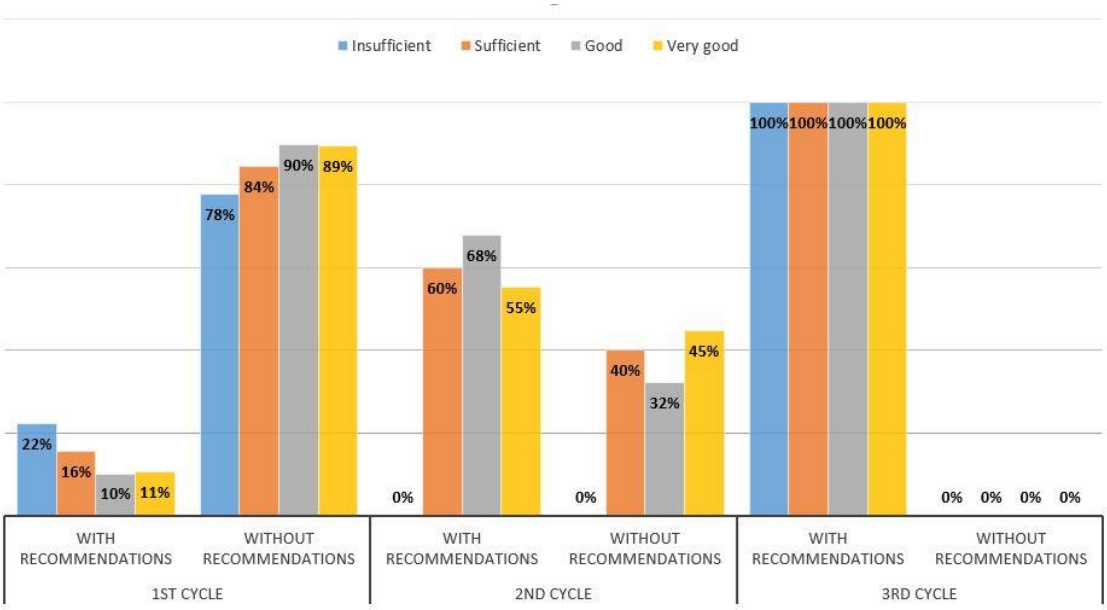

Figure 2. *Presence or absence of recommendations for improvement in the reports in each EES cycle (own production).*

Figure 2 indicates that all external evaluation cycles provided recommendations for improvement in the evaluation reports. However, there is an apparent disparity between the three cycles and by classification.

In the first cycle of external evaluation, most of the reports, regardless of the classification attributed to the domain of SSE, are of a descriptive nature. Only a small percentage of these provide recommendations, with this proportion progressively decreasing for higher classifications. As regards quantity, the percentage of reports with recommendations ranges from at most 22% in cases where the classification was the lowest (Insufficient) to only about 10% to 11% in cases where the classification was higher (Good and Very Good). The lower prevalence of recommendations for schools with higher classifications comes as no surprise, as it can be argued that schools demonstrating a high quality in their SSE need less guidance and support to continue working at the same level. In contrast, schools showing more difficulties require more support. Nonetheless, since a significant number of schools were given a negative classification (Insufficient), the low percentage of 22% may reveal a tendency, in the first cycle of ESE, to opt for a descriptive rather than a constructive approach to evaluative feedback.

In the second cycle of ESE, reports for schools in all classifications present recommendations on how to improve the school's self-evaluation processes, with a minimum of 55% and a maximum of 68% of reports including such recommendations. This could reveal a reversal of the trend identified in the first cycle. However, unlike the first cycle, there is no linear decrease in the percentage of reports with recommendations as classifications increase: the classification with the highest percentage of recommendations is the second highest (Good) and not the lowest (Sufficient). Similarly, there is a more balanced distribution between the percentage of reports presenting recommendations and those with purely descriptive information.

Finally, although the number of third-cycle reports available is significantly smaller compared to the first cycle, all of these reports provide recommendations for improving SSE processes in all classifications, including the highest one found (Very Good).

Having found that a significant number of reports present recommendations, it is now important to explore whether these are generic or context-driven.

Figure 3 shows the percentage of reports with recommendations of each type.

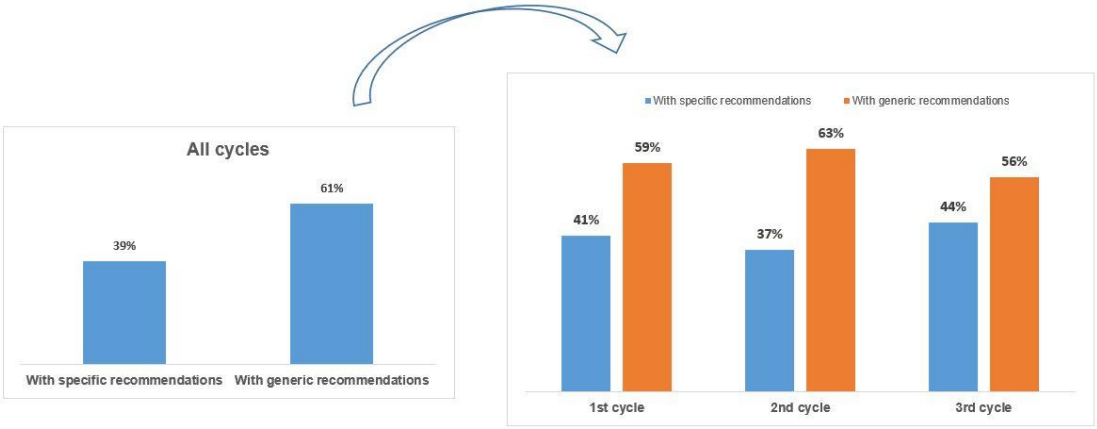

Figure 3. *Percentage of reports with recommendations of each type (own production).*

Two types of recommendations could be found in the evaluation reports: generic recommendations, focused on general ideas, and specific recommendations, addressing aspects specific to each school. As can be seen, most reports presented generic recommendations, with

only about 40% presenting specific recommendations. A similar distribution is found in each cycle of external evaluation.

Examples of generic recommendations are shown in the following excerpts:

> *The consolidation of the self-evaluation process, making it more comprehensive and impactful on professional practices. (Example from an ESE second-cycle report)*
>
> *The sustainability of its future progress depends on the capacity to make the internal evaluation process more participatory, comprehensive and coherent. (Example from an ESE third-cycle report)*

From the examples, the recommendations mainly address characteristics of self-evaluation contemplated in the evaluation criteria, which is expected from an evaluation report that follows a specific framework and set of criteria. Nonetheless, aspects such as *consolidation*, *impact*, *sustainability*, and *participation* can apply to every school context, regardless of its specificities, which does not allow for an in-depth analysis of each school's real situation and may not be sufficient for schools to take on improvement actions. For example, when it is said that the process should be 'more comprehensive and impactful', no indications are given regarding how the school could make it complete or what is missing. Likewise, while it is said that the SSE process needs to be 'more participatory, comprehensive and coherent', it is not clear how this can be achieved.

Moreover, discourse in these recommendations presents a certain level of standardisation, made evident by similar wording in the recommendations regarding the same aspects, as the following fragments show:

> *Consolidation of the self-evaluation process and the representativeness of the educational community in the self-evaluation team to give it greater visibility and recognition. (Example from an ESE first-cycle report)*
>
> *The consolidation and expansion of the self-evaluation process, to enhance its progress and the impacts of improvement plans. (Example from an ESE second-cycle report)*
>
> *The consolidation of the self-evaluation process and the consequent construction of action plans with an impact on the improvement of the educational service provided to the community. (Example from an ESE third-cycle report)*

Therefore, in the majority of the reports analysed, the feedback remains poor in terms of being contextualised, failing to provide a constructive/formative tool for schools, by providing clues for future action that could help schools overcome their difficulties, solve their problems, and benefit from an overall improvement.

Nonetheless, 39% of reports presented recommendations for improvements addressing specific aspects of the school evaluated, as the following examples show:

> *The Cluster needs to improve the structuring of self-evaluation, especially in terms of its systematisation and linking it to an improvement plan that takes account of the priorities established in organisational action... need to improve the process of dissemination and discussion. (Example from an ESE second-cycle report)*
>
> *To involve other actors (parents) and bodies (school assembly) and to make the self-evaluation process more systematic and sustainable: to link the data collected by the survey with those provided by the*

monitoring devices and the results of pupils in the periodic assessment and national examinations. (Example from an ESE third-cycle report)

The examples show concerns for realising the generic aspects present in the evaluation framework, e.g., the structuring of the process, the participation of the community, and the articulation with other processes and with the evidence collected in each school, such as by establishing links with improvement plans or involving parents and the school assembly. This approach demonstrates a contextualisation of the data collected through ESE in a meaningful orientation for schools' future actions towards improvement, an approach that is closer to what is expected of external evaluation processes. Not only is the feedback aligned with the evaluation frameworks/criteria, it does so by referring to the specificities of each school, promoting self-awareness and pointing towards solutions for the problems and issues identified.

However, although 39% of the reports present examples of context-oriented recommendations, it represents a small percentage overall. It can, then, be argued that the evaluation reports provide feedback that is still mostly generic and descriptive. While providing a description of the situations evaluated is important for awareness, this alone may not be sufficient to support change and improvement. Therefore, the desired qualities of being *clear and understandable* and *aligned with evaluation frameworks/criteria* seem to be achieved, while in terms of being *contextualised* and *providing clues for future action*, the reports seem to still fall short of what is desirable.

Discussion and Conclusion

The evaluative discourse from the reports undeniably conforms to the evaluation frameworks, addressing every descriptor and item used to

assess the quality of self-evaluation. In this sense, the Portuguese ESE seems to fulfil its function of producing information and generating knowledge, which has granted it visibility in educational policies (Eurydice, 2004, 2015; Faubert, 2009) and has been identified by researchers as a significant advantage of evaluation processes (Coe, 2009; Figueiredo, Leite & Fernandes, 2016a, 2016b, 2018; Gaertner et al., 2014; García, 2013; Leite et al., 2014; Lindahl & Beach, 2013; Schildkamp et al., 2012), constituting a solid step towards awareness and active improvement.

The analysis also revealed that most evaluative judgements do not go beyond simple description. While an objective description of the school's current situation is indisputably important, research shows that this alone does not suffice in the search for improvement (Devos & Verhoeven, 2003; Olafsdóttir et al., 2022; Quintelier et al., 2018; Schildkamp, 2019). The literature on the matter clearly states the need to provide constructive and formative feedback resulting from evaluations and, more importantly, feedback that is contextualised and specific to each school (Schildkamp, 2019; Visscher & Coe, 2003), since, as Coe states, "What works in one school may well not work in another" (2009, p. 371). The analysis uncovered a very different reality in the Portuguese ESE reports. Most feedback is based on generic references to elements of the self-evaluation processes without proper contextualisation, indicating a lack of engagement with supporting schools in their drive to improve. Thus, although feedback is given, it may be of little use to a school facing difficulties. It is merely a superficial discourse, based on the enunciation of evaluation descriptors, without due specification and contextualisation of the analysis made and the guidance offered. The generic nature of the recommendations fails to address the need for greater attention to the

diversity of school contexts, the variety of situations, conditions, and realities encountered, and the specificity of a self-evaluation process that is expected to be tailored to each school. This may hinder the process of improvement, as evaluators, being experts and external agents, have the potential to offer a refreshing perspective on schools and their possibilities (Ferreira, 2016; Figueiredo, Leite & Fernandes, 2018; Sá, 2018; Sampaio et al., 2016; Seabra et al., 2022;). Likewise, the resort to a vague and hollow discourse might reveal an attempt at unaccountability on the part of the evaluation agency, as may befit a new managerial approach to educational governance in which the state is no longer responsible for what happens but still acts as a supervisory body (Ball, 1998, 2001; Lingard, 2000, 2011; Ozga & Lawn, 2014). Likewise, the standardisation found in the reports may seem at odds with the need for an external evaluation that addresses the specific realities of each context and supports the development of self-evaluation processes appropriate to each situation. On the other hand, it may equally indicate a hidden agenda aiming at steering schools towards uniformity, following a predetermined conception of SSE processes. This contradicts the very nature of the "self" in self-evaluations. In this sense, ESE is closer to a regulatory process aimed at control and verification (Afonso, 2009, 2010; Justino & Almeida, 2016; Terrasêca, 2016; Veloso et al., 2011) rather than a supportive process aiming towards improvement. This is particularly concerning given that this was the predominant approach in all ESE cycles and is contrary to the official discourse framing external evaluations. These concerns lead to questions about whether there is an unspoken agenda, perhaps towards standardisation, given the similarity of the evaluative discourse.

However, examples were found where the feedback was tailored to each school, building on what was found and suggesting how it could be improved or obstacles overcome. It can then be argued that as the cycles evolve, there is a growing tendency to make use of the role of external evaluations in supporting change through constructive feedback, providing schools with knowledge regarding not only how they are performing but also how to improve the SSE processes themselves. The oscillation between the evaluation cycles in terms of recommendations – with few reports containing recommendations in the 1st ESE cycle, a better equilibrium of reports with and without recommendations in the 2nd cycle, and all reports with recommendations in the 3rd cycle, – is also worth noticing, particularly amongst the different classifications. Nonetheless, given that for feedback to be helpful, it must be context-specific, the presence of feedback alone does not consistently demonstrate that external evaluation feedback can support improvement. With context-driven recommendations, these reports can serve as a formative tool for schools, a pedagogical device providing constructive feedback that builds on the description of a school's reality to provide clues for future action. It would be worth further exploring whether reports with constructive feedback generated a more committed and active response from schools, leaders, and other professionals (Visscher & Coe, 2003).

Regarding this paper's research question, What kind of feedback on SSE does ESE provide to schools?, the study does not allow for a clear conclusion, largely due to the inconsistency in the type of feedback provided to schools. It is possible to conclude that all reports offer feedback to schools, and all check the box of being *aligned with the evaluation criteria*; however, only some go as far as being *clear and*

understandable, *contextualised*, and *providing clues for future action*. Additionally, the inconsistency found and the tendency towards description rather than concrete suggestions for improvement may explain why the impact of ESE on SSE improvement, in Portugal, remains limited (IGEC, 2011, 2018).

With this in mind, we can hypothesise that ESE can, in fact, contribute to school improvement, but for this contribution to be full and reach the potential of a whole-school evaluation approach (McNamara & O'Hara, 2012; McNamara, O'Hara & Aingléis, 2002), the feedback itself must be improved.

Although this paper concentrates on only one of the ESE evaluation domains, a few conclusions can be drawn from this study regarding the ESE process as a whole. It is: 1) well thought out, with evaluation frameworks that address various descriptors associated with the quality of the processes under evaluation; 2) continuous, as it occurs in evaluation cycles; 3) evolving, as each cycle is itself evaluated and reformulated; 4) oscillates between regulation and emancipation.

The example of Portugal and self-evaluation can help to shed light on where ESE processes are underperforming – greater attention to the feedback provided to schools is demanded if ESE processes are to achieve their goals.

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