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Research Article

Unveiling the Motivational Tapestry: A Duoethnographic Journey Into two ESP Teachers' Motivation in Higher Education

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ABSTRACT

Teacher motivation has only recently been explored in relation to higher education teachers (Sahakyan et al., 2018; Sampson 2016). This is also true for English for Specific Purposes (ESP) lecturers, who teach specialized English in other disciplines. These teachers often face unique challenges, including teaching content outside their expertise, managing students with diverse and often low English proficiencies, and accessing suitable materials. This study examines ESP teacher motivation as a complex dynamic system, focusing on the interplay between affective, cognitive, and contextual factors in determining the motivational trajectories of these teachers over time. Drawing on a duoethnography methodology, the authors, who are themselves ESP teachers, documented their motivational experiences over a timeframe of five weeks in journals. The data were analyzed using a grounded theory approach, integrating qualitative insights with Likert-scale ratings to identify motivational patterns. The findings reveal how cognitive, affective, and contextual factors interact non-linearly to shape motivational trajectories, with shared and individual attractor states influencing fluctuations over time. Despite transient negative states, the teachers' systems demonstrated adaptability and resilience, recalibrating through self-organization to sustain motivation in response to contextual challenges. The study concludes with several implications aimed at enhancing support for (ESP) teachers by acknowledging the complexity, dynamism, and individual variability of their motivational trajectories.

Keywords: complexity theory, duoethnography, English for Specific Purposes, language teacher motivation

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INTRODUCTION

The essence of motivation, rooted in its etymological origin of *motivus* ("movement" in Latin), lies in the intricate forces that *move* individuals towards certain choices, goals, and actions. In the context of education, teacher motivation can be understood as "the psychological force that enables action and underlies teachers' involvement/non-involvement in every teaching activity" (Hassaskhah, 2016, p. 859). Motivation is essential for achieving successful teaching outcomes and practices (Dörnyei & Ushioda, 2011; Gokce, 2010) and is intricately linked to student motivation and engagement in a bi-directional manner (Zhou et al., 2023). Although research suggests that language teachers tend to be intrinsically fulfilled and content with teaching (Kassabgy et al., 2001), there are external forces that can negatively impact motivation (Dörnyei & Ushioda, 2011), such as student attitudes, financial issues, and lack of autonomy (Honarparvaran & Khaghaninejad, 2023; Tran & Moskovsky, 2022).

Research on teacher motivation primarily focuses on (high) school settings, leaving a gap in understanding the motivation of higher education (HE) language teachers (Daumiller et al., 2020). This gap is particularly significant for English for Specific Purposes (ESP) teachers, who face unique challenges encompassing specialized subject matter outside their expertise, diversity of students' English language proficiencies (usually lower than expected), and a scarcity of teaching materials (Alsharif & Shukri, 2018; Basturkmen, 2010; Marwan, 2009). Consequently, this study aims to explore the complex and dynamic motivational systems of two ESP teachers by examining the factors that interrelate with their motivation from a complex dynamic systems theory (CDST) lens (Larsen-Freeman & Cameron, 2008). To capture this complexity, we employ duoethnography (Lawrence & Lowe, 2020), a collaborative and dialogic methodology, which allows the teachers to explore their experiences together, providing a nuanced view of how their motivation unfolds over time.

Hence, this study not only seeks to broaden the understanding of ESP teacher motivation but also addresses a significant gap in the literature by offering insights into how these HE teachers manage their teaching roles within the complexities of their professional environment. Ultimately, the findings aim to provide strategies to foster language teacher motivation in specialized HE contexts.

Lx TEACHER MOTIVATION

Over recent decades, a growing body of research has highlighted the substantial role of additional language (Lx) teacher motivation in learners' success, teacher well-being, and broader educational reforms (Han & Yin, 2016). Research studying teacher motivation in language learning (and other educational) contexts has shown that high levels of motivation contribute to successful teaching outcomes, commitment to professional growth (Dörnyei & Ushioda, 2011), innovative teaching practices (Gokce, 2010), and increased student motivation (Bačová, 2022).

Research has examined various sources of motivation and demotivation among Lx teachers. Some of the factors influential in shaping language teacher motivation are student motivation and engagement (Zhou et al., 2023), supportive co-workers (Cowie, 2011), and teacher autonomy (Wang et al., 2024). Conversely, demotivating factors include constrained autonomy and limited opportunities for growth (Dörnyei & Ushioda, 2011), problematic student attitudes and behavior (Han & Yin, 2016; Tran & Moskovsky, 2022), and economic constraints (Honarparvaran & Khaghaninejad, 2023). Together, these studies show what a central role language teacher motivation plays in teachers' professional well-being and effectiveness in the classroom (Hiver et al., 2018).

ESP Teacher Motivation

Despite the extensive work on teacher motivation in general primary and secondary education, the HE context remains less explored (Daumiller et al., 2020; Sahakyan et al., 2018; Sampson, 2016). According to Daumiller et al. (2020), HE teachers' motivation is often overlooked for two main reasons. Firstly, it is commonly assumed that those who pursue the demanding path to a PhD and secure academic positions are already highly motivated. Secondly, studying faculty motivation presents both social and methodological challenges since approaching colleagues to inquire directly about their motivation levels can be socially awkward and potentially uncomfortable for researchers and participants. Nevertheless, HE teachers encounter unique challenges in their context (Robson, 2007), such as navigating diverse roles as educators, academics, professionals, and specialists; managing varied teaching formats, including full-time, part-time, attendance-based, and virtual courses (asynchronous

or synchronous); teaching independently and/or collaboratively; delivering professional, interdisciplinary, and/or academic content to groups ranging from small tutorials to large lectures with hundreds of students; teaching basic and/or advanced skills to undergraduate, master's, and doctoral students; being regularly evaluated within the marketized university system; and often lacking pedagogical training, which makes it challenging to meet appropriate professional standards (Robson, 2007).

In respect to ESP teachers, no specific research has yet examined this population's motivation. However, understanding teacher motivation in ESP contexts is particularly relevant because these instructors often face specific professional difficulties. Firstly, unlike general English teachers, ESP teachers are expected to teach English within the context of specialized fields (e.g., medicine, engineering, business, etc.). Nevertheless, many ESP teachers lack formal training or experience in these areas, which can create significant gaps in content knowledge (Alsharif & Shukri, 2018) and may impact their confidence in delivering content. Secondly, ESP courses often attract students with differing levels of English proficiency, frequently lower than expected or required to engage with specialized materials effectively (Marwan, 2009). As a result, ESP instructors are tasked with balancing linguistic support and field-specific content instruction, which can complicate lesson planning and create frustration when students struggle to keep up. Finally, ESP teachers often face the challenging task of developing course materials that align with specific learner needs and industry-relevant language. Suitable teaching resources are often scarce (Basturkmen, 2010), as generic English language textbooks may not address the specialized vocabulary, skills, or contexts of a given field. Consequently, ESP teachers frequently need to create custom materials, which demands considerable time, skill, and effort (Bielousova, 2020), often without institutional support.

These unique challenges faced by ESP teachers suggest that their motivational dynamics might differ from those of general language educators and, therefore, it is worth exploring how these challenges may interlink with motivation, in order to offer advice and strategies tailored specifically to ESP instructors.

Lx Teacher Motivation From a CDST Approach

Dörnyei and Ushioda (2011) note that no single theory has succeeded in capturing all motives, given the complexity of human nature. In the context of Lx acquisition, many studies drawn from general psychology have been adapted to language teaching contexts. Frameworks such as self-determination theory, achievement goal theories, self-efficacy theories, or expectancy-value theories have been implemented to understand language teacher motivation. However, these models have been criticized for providing only a partial account of motivation and for failing to do justice to the multiplicity of interplaying factors that might explain its dynamism (Dörnyei & Ushioda, 2011). Instead, new socio-dynamic perspectives have been proposed that consider the complex, evolving interactions between individual and contextual elements, such as the person-in-context relational view (Ushioda, 2009), possible selves theory (second language motivational self system) (Dörnyei, 2009; Kubanyiova, 2020), and CDST (Larsen-Freeman & Cameron, 2008). The latter is the framework employed in the current study to grasp the complex, context-dependent, and evolving nature of ESP teacher motivation.

CDST is best described as a meta-theory that provides a conceptual foundation for understanding dynamic systems (Hiver, 2022). A system is defined as a conglomerate of "entities which interact in specific ways by virtue of their membership in the system" (Juarrero, 1999, p. 109). Complex systems represent a unique class of systems that consist of an intricate network of connections between agents with significant diversity and redundancy. This dense interconnectedness means that any entity's activity impacts the entire system, either directly or indirectly (Cilliers, 1998). Accordingly, a complex system can be defined as "a system in which large networks of components with no central control and simple rules of operation give rise to complex collective behaviour, sophisticated information processing, and adaptation via learning or evolution" (Mitchell, 2009, p. 13). MacIntyre et al. (2020) reviewed the core characteristics of complex dynamic systems (CDSs): (1) interconnectedness and non-linearity, (2) change over time, and (3) self-organization. Each will be examined individually, establishing connections to current literature on language teacher motivation.

Firstly, interconnectedness implies that holistic, non-linear change is emphasized over simple cause-and-effect

relationships (Morrison, 2008). This means that the interactions among the components' individual trajectories lead to non-linear, emergent changes in the system's overall behavior (Dörnyei & Ushioda, 2011). Research on complexity encourages empirical exploration of how the components of a whole are interconnected, while also promoting a more organic understanding of Lx motivation (Papi & Hiver, 2020). Indeed, teacher motivation does not emerge in isolation, as it is deeply interwoven with cognitive processes (e.g., thoughts, beliefs, attributions, and expectancies) and affective dimensions (i.e., emotional experiences) (Dörnyei, 2009). In language learning, the interplay of beliefs, emotions, and motivation is similarly well-documented (Diert-Boté & Martin-Rubió, 2018; MacIntyre et al., 2019; MacIntyre & Vincze, 2017; Waninge, 2015). As Waninge (2015) notes, "an important finding (...) is the almost inseparable nature of cognition, motivation, affect, and context" (p. 211). This interconnectedness aligns with Kubanyiova and Feryok's (2015) call to broaden research on Lx teacher motivation by bridging cognition, affect, and motivation, and by considering teachers' contextualized classroom practices.

Interconnectedness is also relevant inasmuch as the interactions among a system's components evolve and may eventually reach a point of equilibrium, where the system settles into a stable or preferred state, often referred to as an attractor state (Dörnyei & Ushioda, 2011). The stability of these states is influenced by the attractor basin depth, with deeper basins providing more stability and shallow basins allowing easier transitions between states (Hiver, 2015). In the context of teacher motivation, this means that once a certain motivational state is established, it can become resistant to change, creating a form of stability within the system. However, like any complex system, this equilibrium is not static; it remains subject to shifts and influences, which can bring about new emergent states over time. For instance, Waninge (2015), although focusing on students, identified four attractor states that interconnected with the dynamics of the Lx learning experience (including motivation), and argued that "the more factors that work together, the more *momentum* [an attractor state] is likely to have, and less likely it is to disappear completely" (p. 210, emphasis in original).

Secondly, de Bot (2015) observed that CDSs can experience rapid changes or gradual shifts over time, with short- and long-time spans closely linked. Immediate shifts subtly influence long-term dynamics, which, in turn, inform short-term processes. Previous research on language teacher motivation has highlighted the dynamic and fluctuating nature of motivation (Kimura, 2014, 2022; Kubanyiova, 2020; Sak, 2024; Sampson, 2016; Waninge, 2015), particularly its susceptibility to short-term changes (even 'moment-to-moment'). For instance, Sampson's (2016) autoethnographic study over one academic year highlighted how immediate classroom experiences affect short-term motivation while also contributing to long-term motivational patterns. This study, thus, suggests that perceptions of motivation are shaped by experiences across different timescales, confirming that "the 'now' is the resultant of changes on all possible timescales up to this point" (de Bot, 2015, p. 35). Similarly, Sak's (2024) study tracked the fluctuating motivation of an English as a foreign language teacher trainee engaged in self-initiated professional development over four months (analyzed weekly), revealing how non-linear patterns are influenced by self-efficacy, perceived lesson success, and classroom dynamics.

Thirdly, self-organization refers to "[t]he internally evolving process of coordinated restructuring and formation within a complex system that results in the appearance of novel structure and functions" (Papi & Hiver, 2020, p. 23). Through self-organization, the system continuously adjusts and reorganizes itself, interlinked with internal and external factors, allowing for shifts and new emergent states over time. Therefore, even in seemingly stable systems, there is an ongoing process of adaptation and transformation, keeping the system dynamic and responsive to new influences from the environment (MacIntyre et al., 2020). CDSs can exhibit 'IF… THEN' system/signature dynamics, that is, unique causal interactions between the system's components (Kelso, 2002). Such interactions are contingent on specific situational and contextual factors; that is, IF certain conditions and factors coalesce, THEN particular behaviors, feelings, or patterns typically arise (Mercer, 2015). Importantly, the environment is not viewed as an external, independent factor influencing the system, but as an essential component of the system itself (Ushioda, 2009). Studies reveal the importance of context in the emergence and evolution of the motivational system. For instance, Kimura's (2014, 2022) research showed the influence of environmental conditions on language teachers' motivation and professional growth in China, South Korea, and Japan

over a decade. The studies revealed contextual variations in support, institutional roles, and public status among the teachers, highlighting how unique positions within systems connect with their interactions with students, subsequently shaping their teaching motivation and impacting student outcomes. Similarly, Sampson (2016), Waninge (2016), and Papi and Hiver (2020) emphasized the influential role of classroom experiences and the teaching and learning environment in the motivation of both language teachers and students.

Our review indicates that aspects such as interrelatedness, dynamism, and self-organization are already quite well-recognized in the existing literature on language teacher motivation, which underscores the necessity of conceptualizing this construct as a CDS. In line with the increasing emphasis on adopting complexity perspectives for the study of motivation (Hiver, 2022), we aim to explore the complex interactions among the various factors that intertwine with ESP teachers' motivational systems and track changes in motivation over a period of five weeks. Specifically, we analyze fluctuations in motivation before and after class, distinguishing our approach from previous longer-term studies (e.g., Sak, 2024; Sampson, 2016). Furthermore, the participants in this study are ESP teachers, a gap we seek to address in research on teacher motivation within HE institutions (Daumiller et al., 2020) by providing a deeper understanding of how emotions, cognitions, and contextual factors interrelate with ESP teachers' motivation. Accordingly, the question guiding this study is: What are the dynamic trajectories of two ESP teachers' motivational CDSs over a period of five weeks?

METHODOLOGY

Contexts and Participants

The study participants, Author 1 (A1) and Author 2 (A2), are ESP teachers whose profiles (summarized in Table 1) reveal both similarities and differences. Both fall within the age range of 30 to 35 years and completed their doctoral studies in 2021 (A1) and 2020 (A2). They are early-career university teachers with six years of experience teaching in HE in Catalonia (Spain) including ESP courses, such as tourism, medicine, audiovisual communication and journalism (A1), business, health science, and engineering (A2). However, they differ regarding the ESP domain they teach in (media/journalism vs. optics/optometry), employment status (part-time vs. full-time), and HE contexts (generalist – offering broad, multidisciplinary programs vs. polytechnic – focusing on applied sciences and technical education). In this study, we examine two of their teaching experiences: A1's media/journalism ESP course (which she has taught for five years), and A2's optics/optometry ESP course (which she has taught for two years). These courses were selected as they provided rich contexts for exploring the motivational dynamics of ESP teaching within specific disciplinary and institutional settings. At the time of data collection, they were the only ESP courses being taught by the participants, making them the ideal focus for a duoethnographic investigation into the complexities of teacher motivation.

Data Collection

This study employs a duoethnography approach in which researchers with diverse backgrounds collaboratively share their life stories to offer various perspectives on the phenomenon analyzed – in this case, the ESP teachers' motivational trajectories over time. The authors "are the sites of their own study, i.e., the researchers and the researched" (Banegas & Gerlach, 2021, p. 3), thereby, making their individual voices and stories a central part of the research narrative. Duoethnography is considered an 'emerging' methodology (Lawrence & Lowe, 2020) that focuses on small-scale analysis within specific contexts and that fosters active listening, which prompts authors to examine their assumptions and critically consider different perspectives. A duoethnographic case study approach complements our aim of conducting an exploratory investigation that may highlight new directions and questions for future research and theorizing on teacher motivation (see Sampson, 2016, for an autoethnography with a similar purpose).

Table 1. *Summary of Participants' Profiles*

	A1	A2
Age	30–35	30–35
HE teaching experience	6 years	6 years
Year of PhD completion	2021	2020
ESP teaching domains	Tourism, Medicine, and Audiovisual communication & Journalism	Business, Health Sciences, and Engineering
ESP course of this study	Oral and written English for the media (Audiovisual communication & Journalism BA)	Professional communication in healthcare (Optics & Optometry BS)
Employment status	Part-time	Full-time
HE context	Generalist university	Polytechnic university

Note. BA = Bachelor of Arts, BS = Bachelor of Science, ESP = English for Specific Purposes, HE = higher education.

Autoethnographic data help participants deepen their understanding of themselves and the world around them, allowing them "to challenge grand narratives by exploring the complexity of personal stories and experiences, in juxtaposition with those of other people" (Lawrence & Lowe, 2020, p. 22). This study relies on asynchronous journal data collection by the two ESP teachers, which offers a self-reflective perspective as participants tell their own story about themselves to themselves (Beseghi, 2021). By focusing on the ESP teachers' journals, this research adopts a teacher-centered approach, narrating their stories and shifting the focus to teachers' lived experiences (Mercer et al., 2016). By engaging in this reflective dialogue, teachers can uncover the emotional and cognitive dimensions of their motivation, which contributes to a more nuanced understanding of language teacher motivation that can inform future research and practice.

In this study, A1 and A2 independently wrote their own journals over five weeks (two classes per week) during September and October, gathering a total of 12,525 words (6,247 by A1 and 6,278 by A2). The authors recorded entries immediately before and after teaching their ESP courses (within a maximum of 30 minutes) in the first semester of the 2023–24 academic year, resulting in 10 entries, each one including 'before' and 'after' reflections. The deliberate timing of these journal entries aimed to capture insights into their teaching practices and emotions at various moments, adhering to de Bot's (2015) argument that understanding motivation requires examining diverse timescales. These journals included, on the one hand, qualitative descriptions of thoughts, emotions, and motivation. The authors did not agree on specific guidelines for writing these qualitative reflections, and there were no restrictions on length or content, as long as the reflections focused on motivation. On the other hand, a five-point Likert-scale was included in all the entries to facilitate motivation pattern identification. Thus, participants asked themselves: "How motivated do I feel before/after class?" with responses being: 1 (*not at all motivated*), 2 (*somewhat motivated*), 3 (*fairly motivated*), 4 (*very motivated*), and 5 (*extremely motivated*).

Data Analysis

To explore these teachers' motivation, a qualitative grounded theory approach was utilized, enabling the development of insights based on the participants' perceptions and experiences and avoiding premature

assumptions (Corbin & Strauss, 2015). Grounded theory complements CDST as it preserves the complexity and the situated nature of the data. To analyze the qualitative data, Vaismoradi et al.'s (2016) iterative analytical process was followed, encompassing four stages.

In the Initialization phase (Vaismoradi et al., 2016), researchers read the journals (written in English) jointly, highlighted relevant quotes and coded them collectively on a line-by-line basis using the qualitative data management software Atlas.ti (Version 23.2.1). We collaboratively reviewed the journals multiple times to gain a comprehensive understanding of the data, ensuring that we remained closely attuned to our voices and perspectives. The analysis underwent a continuous coding and re-coding process until reaching the saturation point, that is, when no new themes or codes emerge (Alam, 2021). Codes were developed to examine how cognitive, affective, and contextual factors interact within the motivational system, with motivation being viewed as the emergent outcome of these dynamic interactions, as discussed in the literature (Dörnyei, 2009; Dörnyei & Ushioda, 2011; Sampson, 2016; Waninge, 2015).

During the Construction phase (Vaismoradi et al., 2016), both authors discussed and analyzed the codes together, which were organized under hierarchies. For example, cognitive aspects contained attributions (i.e., explanations for the causes of one's or others' behaviors; Weiner, 2000), expectancies (i.e., beliefs about the likelihood of achieving desired outcomes; Watt et al., 2012), and self-beliefs (i.e., perceptions and convictions one holds about oneself), which, in turn, encompassed other aspects, like student behavior or time management. By comparing data across the two journals, similarities and differences were established between the two participants in terms of their motivational trajectories.

In the Rectification or Verification phase (Vaismoradi et al., 2016), researchers decided to step back for two months to critically evaluate the coding to avoid hasty or incomplete conclusions. To address any misunderstandings or discrepancies that arose during this evaluation, we held regular discussions where we presented our individual interpretations and sought consensus. For example, if one of us coded an entry as "anxiety" and the other as "discomfort," we jointly examined the context to clarify these emotions; similar discussions arose around "attribution" and "expectancies." This rigorous dialogue and reconciliation of perspectives not only clarified our findings but also strengthened the validity of the conclusions drawn from the data.

Lastly, in the Finalization phase (Vaismoradi et al., 2016), quotes were selected to provide a holistic illustration of the interconnections between motivation and cognition, affect, and contextual factors. This involved identifying relevant quotes that highlighted specific relationships (for instance, between motivation and happiness or between demotivation and student disengagement). By presenting these quotes in a structured format, we succinctly captured the complexity of our motivational systems. This approach ensured that the analysis was not only comprehensive but also accessible to readers.

Once the analytical process was finished, the software Gephi (Bastian et al., 2009) was employed to create a visual representation of the participants' motivational complex systems, allowing for an in-depth demonstration of the relationships and patterns within the coded themes in the shape of networks. This involved importing the coded themes (nodes) and their relationships (edges) into Gephi to create a network graph that visually mapped out the interconnectedness and complexity of various motivational factors. The networks represent these factors using nodes, with the size of each node corresponding to its frequency of occurrence (i.e., the total number of times a factor appears per person across entries). Thus, larger nodes indicate factors with stronger connection with teacher motivation. Gephi was specifically employed for its feature to visually highlight differences in node size and importance in the network.

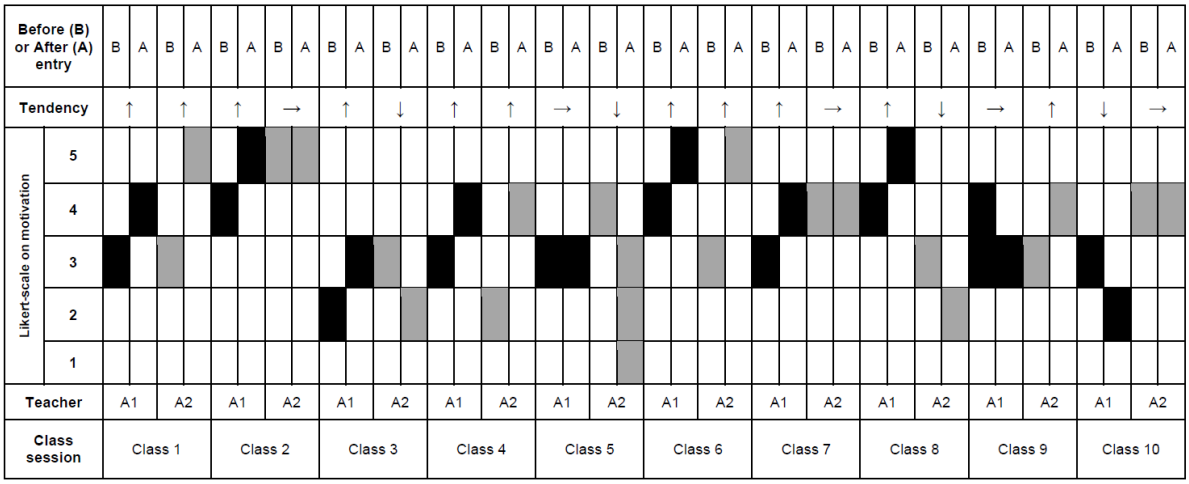
In addition to the codification process, the analysis of the 5-point Likert-scale ratings involved identifying patterns and uncovering peculiarities in the journal entries (both 'before' and 'after') that might otherwise remain unnoticed. This integration of quantitative data serves as a complementary strategy within the qualitative framework (Maxwell, 2010) to enrich the interpretation of motivational dynamics.

FINDINGS

This section presents the findings in four main parts: (1) the overall motivational dynamics, highlighting fluctuations

observed before and after class sessions; (2) the shared system components and attractor states between the two teachers; (3) the teacher-specific attractor states unique to each teacher; and (4) the complexity and non-linear behavior of emotional-motivational dynamics.

Figure 1. *Overview of the Participants' Motivation*



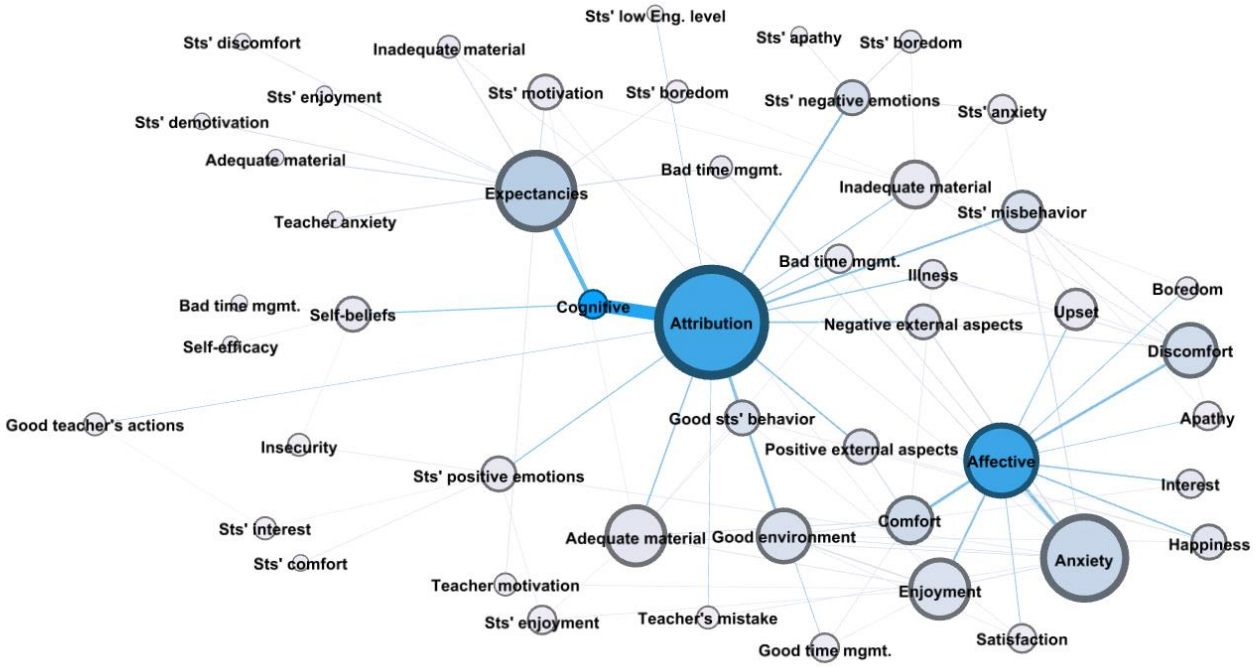
Note. Black color = Author 1 (A1), gray color = Author 2 (A2), B = before, A = after.

Mapping Motivational Dynamics Over Time

An overview of the teachers' motivational dynamics over the analyzed timespan is shown in Figure 1, which includes the number of class sessions (N = 10), teachers A1 (black) and A2 (gray), Likert-scale ratings (1–5), tendencies (upwards ↑, level →, and downwards ↓), and ratings categorized as 'before' (B) and 'after' (A) class. It is important to note that on two occasions ('Class_5–A2–A' and 'Class_9–A1–B'), multiple scores were given. On the one hand, A2 initially rated her motivation after class as 3, but changed it to 2 while reflecting on the class in her diary and, eventually, she finished the entry with a rating of 1. On the other hand, A1 started her 'before' diary entry with a 4, but after her reflection she finished with a 3. These changes in motivation ratings reflect realizations the teachers had while writing their journals, as they became more aware of the internal and external factors that had interacted, and were still interacting, with their teaching motivation. Capturing this information was deemed important to reflect the complexity and dynamism of the teachers' motivation even in such a reduced timespan.

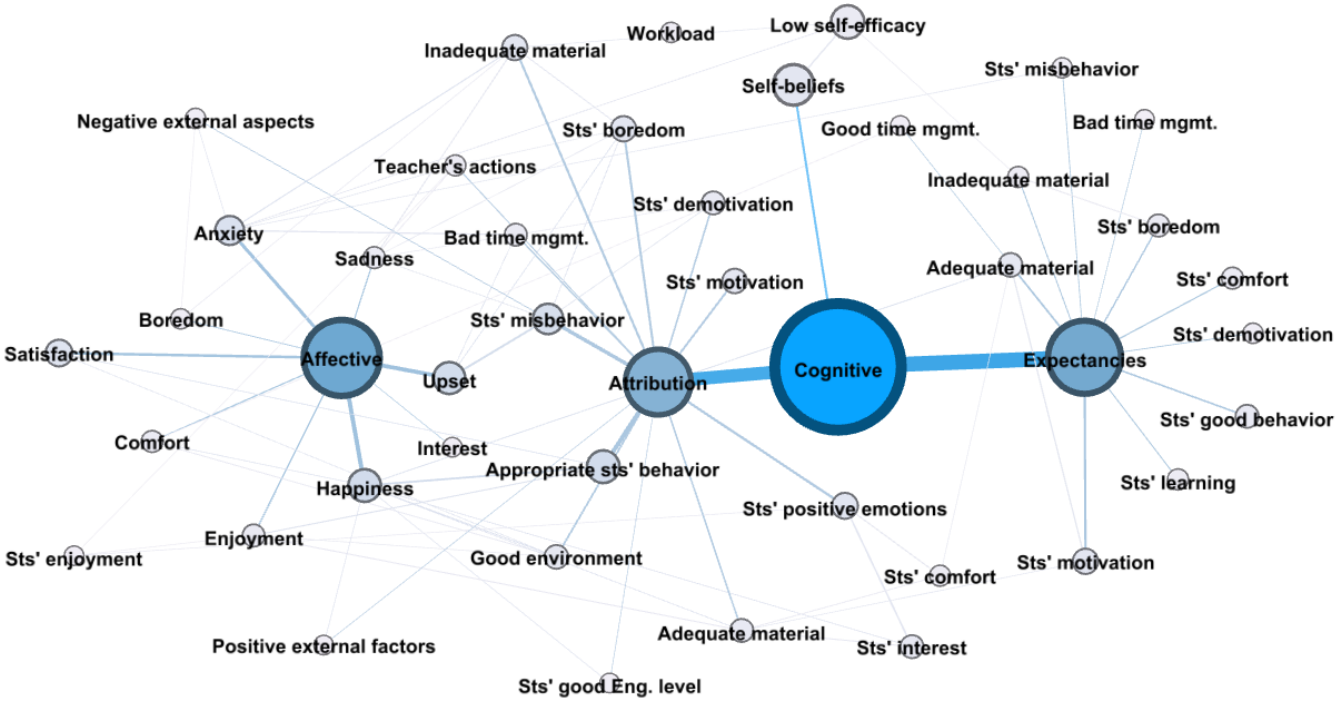
There were 11 instances where the 'after' motivation was higher than the 'before' motivation (A1 = 7↑ and A2 = 4↑). Motivation remained the same in 5 instances (A1 = 2→ and A2 = 3→) and decreased in 4 classes (A1 = 1↓ and A2 = 3↓). Notably, when motivation remained steady, the ratings were generally high, reflecting sustained engagement. Even when motivation decreased, the decline was minimal, by one point in all cases (note the special case in 'Class_5–A2–A'). Therefore, the results reveal a pattern of increased motivation after class, foregrounding the dynamic and evolving trajectories interconnected through the interactions among agents within the motivational system. This intricate interplay of system components (see Figures 2 and 3 below) will be explored in greater detail in the following sections.

Figure 2. *A1's Motivational Complex System*



Note. Eng. = English, mgmt. = management, sts = students.

Figure 3. *A2's Motivational Complex System*



Note. Eng. = English, mgmt. = management, sts = students.

Common Components of the System: Shared Attractor States

The motivational systems of both participants exhibited attractor states that were consistently relevant and stabilized their engagement in teaching. One key attractor state was an over-reliance on external validation, by which teachers showed a tendency to seek affirmation of their teaching effectiveness through student feedback, participation, and enthusiasm, which became a recurring pattern in guiding their emotional states and motivational trajectories. In both cases, attributions and expectancies about engaged, motivated, and responsive students were a primary driver of their positive emotions and motivation:

> Excerpt 1
>
> As I had exercises to complete after the explanations (vocabulary, formality exercises), students were also engaged in the task. When they were doing the exercises, I walked around the class in case anyone had questions, but few students asked questions (...) I'm happy because, as I moved around, everyone was doing the task (yes, maybe discussing in Spanish or Catalan but doing the task) and that's motivating because sometimes you see students doing other things. I'm very motivated. (A2, Day_4–A)

The teacher expresses a sense of happiness and motivation derived from observing students' involvement in the assigned activities, which contributes to a sense of accomplishment. The use of Spanish or Catalan during the tasks reflects the students' difficulty to use English spontaneously in an ESP context that involves the use of professional/technical and academic language. Despite this, the teacher reframed this behavior and acknowledged that students were not off-task, interpreting it not as disengagement but as a natural adaptation to the task demands, thus reinforcing her positive emotional and motivational response. This response appears to be connected to the teacher's schema or mental frameworks used to organize and interpret information, developed through past encounters with (dis)engaged students. These past experiences seem to have created a sensitivity to student engagement as a motivational trigger. Hence, when A2's interpretation of students' engagement aligns with her expectations, her sense of efficacy appears to be reinforced, and her motivation sustained through ongoing feedback loops.

In contrast, attributions and expectancies about student misbehavior and disengagement tended to pull the teachers' motivational system towards more negative states:

> Excerpt 2
>
> At the beginning of the class I was a bit demotivated because I felt a bit lazy, and I wasn't receiving much participation from the students. (...) At the beginning of each unit I always put some ice-breaking questions to discuss with the class, but, as usual, they almost didn't participate, so it made me feel uncomfortable (I even realized that I was tripping over my tongue out of anxiousness and tiredness). (A1, Day_1–A)

The lack of student participation triggers demotivation and feelings of anxiety (even manifesting physically: "tripping over [her] tongue"), which are further amplified by past experiences, as indicated by the phrase "as usual." As with A2, this again highlights the role of schemas in guiding how the teacher anticipates student behavior and participation, influencing, in turn, her emotional and motivational states in the classroom. In fact, elsewhere in the journal, A1 explicitly emphasizes the significant impact of students' behavior on her "mood:" "I'm quite chilled (...) however, it's true that this mood may change depending on how students behave in class" (Day_5–B). Furthermore, the internal attribution of feeling "lazy" suggests a personal cause for her initial demotivation, while the lack of student participation represents an external factor, both of which contribute to her overall affective experience. Overall, this data extract illustrates how emotions, cognitive evaluations, internal states, and external factors continuously interact to interweave the overall motivational trajectory in the teaching environment.

Another prominent attractor state shared by both teachers was their perfectionism in creating or selecting course materials. Both exhibited a pattern of rigorous evaluation and upheld high standards to ensure the materials aligned with their pedagogical goals. This perfectionism needs to be understood in the context of ESP, where teachers often lack subject-matter expertise and struggle to create suitable teaching material (a challenge especially evident in A2's experience, as discussed in the following

section, Teacher-Specific Dynamics: Individual-Level Attractor States). The next excerpt reflects how expectancies about adequate teacher material lead to an upward motivational trajectory:

> Excerpt 3
>
> I'm very motivated and quite excited about this afternoon session because I'm using some teaching material that I prepared entirely (not exercises from different books). (...) I think it's a very hands-on lesson. This activity will help students prepare for the assessed task. So, I hope they see it as a useful activity. (A2, Day_5–B)

In this excerpt, A2's motivation is closely tied to the expectancy that her self-prepared teaching material will engage students and have a positive impact on their learning, as she foresees that the material will be "hands-on" and "useful" to prepare students for the assessed task. Moreover, the teacher's motivation and excitement are amplified by the unique demands of ESP teaching, which often requires creating custom, original materials to meet specific learner needs and by her confidence in their adequacy to the specialized field. Therefore, it seems that successfully designing such targeted content boosts her sense of ownership, reinforcing her motivation.

These expectancies about the quality of the teaching material also generate the same pattern in A1, that is, positive expectancies guiding the motivational system into positive state, and vice versa, as exemplified here:

> Excerpt 4
>
> Today we're starting a new unit about magazines, so it's a bit "old-fashioned" and my fear is that students won't be too motivated because they see it as irrelevant. However, to compensate for that, the exercises they have to do are quite interesting and engaging (I hope), because they relate to advertising, and they have to be creative. (A1, Day_6–B)

Anticipating potential disengagement due to the perceived irrelevance of the topic ("old-fashioned" magazines), A1 compensates by crafting activities she hopes will be "interesting and engaging." Her focus on creativity and real-world connections, such as advertising, underscores her effort to align materials with students' interests despite her non-expertise in the discipline. This endeavor reflects an adaptive response to fluctuations in her motivational trajectory, where perceived risks of student disengagement drive her to stabilize the system through rigorous material preparation. While this perfectionism fosters alignment with ESP pedagogical goals, it also reinforces a pattern of self-imposed pressure, illustrating the dynamic interplay between external challenges and internal expectations and pressures.

Teacher-Specific Dynamics: Individual-Level Attractor States

Beyond the shared attractor states that anchored both participants' motivational systems, individual-level dynamics revealed patterns unique to each teacher.

For A1, anxiety tends to emerge as a powerful negative force interplaying with her motivation, being connected, on the one hand, to external pressures, such as additional teaching responsibilities:

> Excerpt 5
>
> Today I don't feel motivated at all, I don't know if it's because on Tuesdays I have two classes or what, but I feel particularly demotivated. In the morning, before the other class, I felt very nervous. (...) So I've just dragged this mood the whole day and the thought of "I want the day to be over!" (A1, Day_3–B)

This excerpt reveals how A1's motivational system is disrupted by a heavy teaching schedule, with the demands of two classes on Tuesdays contributing to her feelings of demotivation. The desire for the day to end highlights the emotional strain and a sense of wanting to escape the pressures of her responsibilities. The interplay between anxiety and demotivation portrays how contextual factors, such as workload, interact with A1's emotional states, pulling the teacher's motivation towards a more negative state.

On the other hand, A1's anxiety attractor state appears to be intimately related to her self-beliefs of poor time management skills:

Excerpt 6

> Today I don't know what to say, I'm only fairly motivated. We're finishing the unit and I feel cool because it means we're halfway through the course, but today we have many exercises (again), so I foresee quite a lot of stress. (A1, Day_10–B)

While A1 initially expresses some positive feelings about nearing the halfway point of the course, this is quickly overshadowed by stress associated with having numerous exercises to complete. The teacher's anticipation of stress highlights how her own perceived difficulties with time management can lead to anxiety, which seems to negatively affect her motivation. This suggests that A1's demotivation partly emerges from her expectations regarding the workload and her ability to manage it, which pull her motivational system towards a negative attractor state characterized by stress and reduced enthusiasm for the lesson. Interestingly, in another diary entry, she reflects on the significance of time management on her motivation and enjoyment in the classroom: "Regarding time, I've not been stressed out, and I think this is a very important factor for me to enjoy classes – not to rush and simply give students the time they need" (Day_6–A). This highlights that, when A1 effectively manages time and avoids stress, her motivation rises, and she is able to create a more relaxed and engaging learning environment. Therefore, the dynamic interaction between A1's time management and her motivation shows how attractor states interlink with her ongoing emotional and motivational trajectory.

Despite anxiety being a salient attractor state, it is noteworthy that, throughout her journal, A1 makes references to a growing sense of positive self-efficacy, which appears to stabilize and strengthen her motivational system over time:

Excerpt 7

> In the past I was afraid to confront the "problematic students," but today I talk to them and I understand why they are distracted (...) I'm always asking if they have any questions (...) I think that my evolution in this particular issue keeps me more motivated. If one day they speak a lot or ignore me, it affects my motivation on a moment-to-moment level, but, overall, my motivation during the class and in the long run is maintained or even increased. And not only mine, but my students' motivation as well, because I think that with my attitude, they don't feel lost and uninterested. (A1, Day_8–A)

A1 reflects on her evolving approach to handling "problematic students," revealing a significant connection between positive beliefs of self-efficacy and her overall motivation. Initially, A1 experienced fear in confronting these students, indicating a lack of confidence in managing classroom dynamics effectively. However, as she engages with students, she demonstrates a growing sense of self-efficacy, attributing their motivation to her own attitude and efforts. This transformation positively intertwines with both her motivation and the classroom environment, which illustrates the dynamic, emergent nature of motivation as it interconnects with her past and present experiences, creating iterative adaptations in her attitudes and behaviors toward students. While A1 acknowledges that occasional disruptions can temporarily impact her motivation, she reports that her overall motivation – both in the short and long term – remains steady or even increases. This suggests that her growing confidence in addressing student behavior operates as an attractor state, supporting her ability to foster and sustain a motivating atmosphere for both herself and her students.

Turning to A2's attractor states, one prominent attractor is happiness, which consistently drives her motivational system toward an upward trajectory:

Excerpt 8

> I use ClassPoint to make the PPT interactive and I can give stars, so for the first activity I gave a star to all of them because they all wrote paragraphs for short answers (yes, paragraph and not just a short sentence! Miracle! Also, when I asked them to write at least 3 questions to ask in a consultation, they used technical words and some even wrote more than 3 questions!!!). That's really motivating and it makes me happy. (A2, Day_1–A)

This excerpt underscores how A2's motivational system dynamically evolves through the interaction between the perceived effectiveness of her teaching methods and students' participation. Interestingly, her happiness appears to be intertwined with an adaptive shift in expectations, where modest accomplishments, such as students writing a short paragraph, are reframed as meaningful progress. A2's

happiness is not just a fleeting emotional state but a significant force that strengthens her motivation, as positive emotions contribute to her ongoing engagement and drive to foster further student participation. This reflects an adaptation of her motivational system, where small successes (such as student engagement) help sustain her motivation, with happiness acting as a powerful reinforcing agent.

A2's insecurity also functions as a strong attractor towards which her motivational system gravitates, especially in relation to perceived low self-efficacy regarding her limited expertise in the optics and optometry discipline:

> Excerpt 9
>
> It feels a bit weird to include images of the eye to match the term with its corresponding part, I mean they are experts, maybe it's a silly exercise for them, but for now it's the only way I have to practice this vocabulary (...) I don't know why I always have the feeling that the material I've prepared isn't going to be enough (...) is it because I'm insecure? Maybe, I just don't like that feeling. (A2, Day_3–B)

In this excerpt, A2 reflects on her experiences as a teacher in an ESP setting, where she feels a heightened sense of insecurity due to her non-expert status in optics and optometry. While she strives to create engaging learning materials, her uncertainty about the effectiveness of these materials is palpable. A2's discomfort is evident when she describes the matching exercise with images of the eye, which she fears may seem "silly" to her expert students, thus revealing her anxiety of not meeting their expectations. Her expressions of doubt ("It's the only way I have to practice this vocabulary" and "I always have the feeling that the material I've prepared is not going to be enough") signal a deeper struggle with her low self-efficacy as an attractor state. This ongoing insecurity interacts with her motivation ("I'm somewhat motivated"), as A2 struggles with the balance between providing valuable learning experiences and her perceived inadequacy in the subject matter.

A2's attractor state of insecurity is activated, also, when external feedback from the environment, particularly student disengagement (another important attractor, as explained in the previous section, Common Components of the System: Shared Attractor States), reinforces her self-doubt, further deepening her negative motivational state:

> Excerpt 10
>
> You try to be fun/nice (...) but you see a group of students who are there just because they have to be there, but they aren't involved, they're tired, they're lazy, so that inevitably also reaches you. Again, maybe the problem was me and the materials. (...) it's just that when they come with 0 motivation, what do you do? (...) sometimes it's really difficult to be motivated when the students aren't and inevitably your motivation also decreases, and you start questioning your work. (A2, Day_8–A)

As shown in the excerpt, the teacher attempted to create a positive and engaging classroom atmosphere yet faced the reality of students who participated out of obligation rather than interest. This lack of involvement and apparent apathy among students disheartened the teacher, which posed a significant challenge: igniting motivation in students who arrive with none. This scenario created a cycle of reciprocal demotivation for the teacher and the students, with the teacher attributing the lack of motivation to neither (or both) herself and the students. The teacher's frustration is further escalated due to a misalignment between her expectations and the students' lack of focus on the specialized ESP content, as shown elsewhere:

> Excerpt 11
>
> One of the students chose a football image. When have I asked them to explain a random term? All the exercises need to be related to an eye condition. That was a bit annoying and it made me a bit angry. (A2, Day_10–A)

This deviation from the lesson's goal reinforces a sense of disappointment and frustration, which reflects how external student behaviors interact with the teacher's internal motivational state.

The Complexity of Emotional–Motivational Dynamics

As evidenced in the two preceding sections, there is generally a clear connection between positive emotional states and an upward trajectory in motivation across the dataset. For example, A2's happiness attractor state fosters

a reinforcing cycle of motivation and satisfaction, as illustrated in Excerpt 8. In contrast, the systems also revealed a pattern of negative emotional states and a downward motivational trajectory. As shown in Excerpts 5 and 6, A1's experience highlights how negative emotional attractors, like anxiety, can disrupt the balance of the system by shifting to a demotivating dynamic. Importantly, these emotional states do not operate in isolation but interplay with cognitive and contextual elements. Such signature dynamics can be, therefore, expressed as: 'IF positive emotional states align with favorable cognitive components (e.g., positive self-beliefs or thought patterns) and supportive contextual forces (e.g., student appropriate behavior), THEN motivation tends to follow an upward trajectory.' Conversely, 'IF negative emotional states coincide with unfavorable cognitive patterns (e.g., self-doubt or perceived obstacles) and unsupportive contextual forces (e.g., external pressures), THEN motivation is likely to decline.'

Nevertheless, non-linear patterns are also encountered in the data, by which emotions such as anxiety (A1) and upset (A2) coexist with high levels of motivation. These instances reflect the dynamic interplay within the motivational system, where both positive and negative affective states can contribute to the overall motivational experience:

> Excerpt 12
>
> The last exercise has been quite stressful for both the students and for me (...) they get really nervous when it comes to speaking (and recording it!), they were really worried, and I needed to explain it many times, repeat instructions, provide ideas, and cheer students up. I had fun, but at the same time it's quite overwhelming (and for them, too). Despite the hurdles I like doing it, and it motivates me because then I see the students' evolution (...) which is great! :). (A1, Day_1–A)

This excerpt depicts how A1's anxiety stemmed from students' fear of speaking and being recorded, which required the teacher to repeatedly clarify instructions, offer ideas, and provide emotional support. This increased effort likely derives from the fact that students either lack the high English proficiency needed to easily follow instructions, are unaccustomed to participating in speaking activities in English – common in ESP, or both. Interestingly, this "stressful" yet rewarding experience boosted A1's motivation ("it motivates me") and enjoyment ("I had fun") as she observed students' progress. This illustrates the dynamic interplay between challenges and satisfaction, highlighting her agency in maintaining motivation by recalibrating her emotional state toward a more balanced and positive trajectory. The seemingly paradoxical coexistence of anxiety and motivation, as well as of comfort and motivation is also evident elsewhere in the dataset: "I felt great because I didn't have so much pressure today, so I was more comfortable (as comfortable as I can be, I mean, I always get a bit nervous and sweaty)" (Day_2–A). This statement underlines A1's awareness of anxiety as an attractor state that remains relatively stable over time, yet it did not entirely prevent her from experiencing positivity in class or maintaining high motivation (rated 5/5).

Another example of the intricate interplay between negative emotional states and motivation is found in A2's account:

> Excerpt 13
>
> I'm very motivated because the lesson went smoothly. I started with what I finished this morning just to take it from where we left it and of course, no one remembered it (I always think it's important to just do a little reminder of the previous session, but it's always annoying/irritating because they never remember a thing). (A2, Day_10–A)

Despite feeling annoyed and irritated by the students' lack of retention from the previous lesson, A2 reports feeling highly motivated. This suggests that negative emotions, such as irritation over students' forgetfulness, do not necessarily diminish motivation. Instead, A2 remains engaged and committed to the lesson, even while acknowledging emotional frustration. Therefore, Excerpts 12 and 13 challenge the assumption that positive emotions are always required for strong motivation, while pointing out the potential role of professional commitment and intrinsic motivation in sustaining effort despite emotional setbacks. Overall, these findings underscore the non-linear and dynamic nature of motivation, where both positive and negative emotional states interplay with cognitive and contextual factors, weaving the motivational trajectories in intricate ways.

DISCUSSION

This study has explored teacher motivation as a CDS, analyzing its fluctuations and the relationships between the different affective, cognitive, and contextual agents constituting the motivational CDSs (Dörnyei, 2009; Dörnyei & Ushioda, 2011; Sampson, 2016; Waninge, 2015). From this perspective, the two ESP teachers' dynamic motivational trajectories will be discussed in light of the key characteristics of CDSs: interconnectedness, dynamism, and self-organization.

Interconnectedness

The findings underscore the interconnected nature of teacher motivation, emphasizing how cognitive, affective, and contextual elements dynamically interact to weave motivational trajectories. For both participants, internal factors, such as self-beliefs and emotional states, were closely tied to the classroom or broader contextual aspects, reinforcing Kubanyiova and Feryok's (2015) call to integrate cognition, affect, and classroom practices in motivation research. This dynamic interplay highlights the emergence of attractor states through the ongoing evolution of system components (Dörnyei & Ushioda, 2011). Shared attractor states included an overreliance on students' validation and perfectionism in material creation, both of which significantly interacted with the teachers' emotional states and motivational trajectories as they often interconnected with how they perceived their own effectiveness and value as educators.

Across participants and moments, certain attractors exerted a stronger influence on the motivational system, stabilizing it and pulling it toward either more positive or negative states. Notably, both teachers exhibited a combination of negative and positive attractor states within their individual systems. For A1, anxiety emerged as a prominent attractor, though high self-efficacy also served as a preferred and stabilizing state. Similarly, for A2, happiness was a dominant attractor, anchoring her motivational system in a positive trajectory. However, her insecurity occasionally disrupted this balance, leading to a downward motivational trajectory. Furthermore, while the data suggest signature dynamics (Kelso, 2002) by which positive cognitions or emotions are connected with high levels of motivation – and conversely, negative emotions with lower motivation – it also highlights the complex and non-linear nature of the participants' motivational systems (Morrison, 2008). While shared and individual attractor states provided some predictability, motivational trajectories did not always follow linear patterns. For instance, A1's anxiety and A2's upset also coexisted with high motivation, demonstrating how seemingly opposing states can interact to sustain engagement and contribute to the system's adaptive complexity. This illustrates the non-linear evolution of complex interactions within the teaching context and how motivation cannot be reduced to linear cause-and-effect relationships.

Change Over Time

The analysis highlights the inherently dynamic nature of teacher motivation, characterized by continuous fluctuations over time interlinked with immediate interactions with the classroom context and broader external, contextual factors. In the analysis, it was evident how past experiences and schemas interacted with present and even future circumstances, creating a dynamic and emergent motivational system. This interaction across different temporal scales – past, present, and future – depicts how motivation continuously adapts and emerges within the context of the teaching environment (de Bot, 2015; Papi & Hiver, 2020; Sak, 2024; Sampson, 2016).

Motivation fluctuated across shorter- and longer-term timescales (de Bot, 2015), since both participants reported moment-to-moment changes in their motivational states that interrelated with immediate classroom experiences, as well as broader patterns of adaptation over the study period. A1's evolving confidence in managing student behavior illustrates this dynamism, where momentary successes contributed to a gradual increase in her overall sense of self-efficacy. Similarly, A2's experiences of happiness derived from student participation provided short-term boosts that fed into longer-term motivational stability. This generally positive pattern is particularly noteworthy as it highlights how negative states, linked to external pressures and internal schemas, can pull motivational systems toward less favorable attractor states without necessarily leading to sustained demotivation. On the contrary, these negative states appear to be more dynamic and transient, characterized by shallow attractor basins (Hiver, 2015), since, over time, they tend to exert weaker and less

consistent effects on the system (MacIntyre & Vincze, 2017). Thus, while negative states, such as anxiety and upset, may momentarily lead to a downward trajectory in motivation, it seems they lack the depth to anchor the system in a prolonged negative state. These findings foreground the system's "dynamic stability" (Mercer, 2015, p. 159) and its ability to recalibrate and settle into more favorable motivational trajectories.

Self-Organization

Self-organization emerged as a defining feature of the participants' motivational systems, with both demonstrating ongoing flexibility and adaptations to internal and external feedback. Accordingly, the findings illustrate the reciprocal relationship between teachers and their environments, underscoring Ushioda's (2009) perspective that context is an integral component of motivational systems.

The process of self-organization is evident in the teachers' adaptive strategies and adjustment to contextual challenges, such as the development of ad-hoc teaching resources in response to the lack of specialized materials (Basturkmen, 2010; Bielousova, 2020), students' low English proficiency (Marwan, 2009), or misconceptions about the nature of ESP courses. Therefore, these adaptive processes illustrate how the system develops new structures and functions to maintain resilience and motivation over time. For instance, A1's reflections on her evolving self-efficacy through honed classroom management strategies exemplify how motivational systems restructure themselves over time. Similarly, A2's reframing of student engagement and success through smaller achievements reflects her system's capacity to reorganize and adapt to contextual demands, incorporating new strategies to address challenges and support motivation. This organic process of self-organization demonstrates how motivational systems can continually evolve by integrating new interactions while remaining coherent and purposeful over time.

Overall, the study demonstrates the adaptive and resilient nature of these systems, pointing to the importance of self-organization in sustaining motivation, even in challenging contexts. These insights encourage future research to adopt dynamic, systemic approaches that account for the emergent and evolving nature of teacher motivation.

Methodological and Pedagogical Implications

Although this small-scale case study limits generalizability to broader ESP contexts, it offers valuable methodological and pedagogical insights. In terms of methodology, the duoethnographic reflections highlight the importance of reflective practice in understanding teachers' motivation. Diaries facilitated transformative learning by enabling self-awareness and helping us, as researchers and teachers, identify challenges and opportunities for future improvement and professional growth (Maijala, 2023). Thus, the duoethnographic methodology provides unique insights into the authors–participants' motivational complex systems that would have been challenging to obtain through external observation or more traditional research methods, such as interviews or surveys, as it allowed us to integrate personal, affective responses into the analysis, making the research process both a reflective and forward-looking tool for professional development.

Ultimately, this study offers several pedagogical implications. Firstly, it emphasizes the need for tailored strategies to boost ESP teacher motivation and foster resilience and adaptability by acknowledging the individualized and complex nature of motivation (Sampson, 2016). Secondly, it stresses the importance of professional development courses for ESP teachers and of integrating reflective practices, such as diary-keeping, to help them manage and raise awareness of the complex and fluctuating nature of their motivation. Thirdly, it underlines the importance of implementing support structures, such as peer mentoring (with content experts) and regular feedback sessions to help teachers navigate ESP teaching complexities. Overall, this study underscores the critical role of complex and dynamic approaches in understanding and enhancing teacher motivation, while considering their unique emotional, cognitive, and contextual agents.

CONCLUSION

This study set out to examine the dynamic and multifaceted nature of teacher motivation within the ESP context, focusing on how it operates as a CDS of emotional states, cognitive forces, and contextual factors. However, the study is not without its limitations. Firstly, we observed differing emotional expressions in participants' diaries, with A1 offering more nuanced descriptions and A2 simpler

reflections. While the absence of specific guidelines may explain this difference, it also allowed for authentic, unrestricted insights into the teachers' motivational states. Furthermore, the methodology used limits the generalizability of the findings to other ESP contexts, as it focuses on the experiences of two participants only. Ultimately, the data collection timeframe may not capture long-term motivational patterns or fluctuations that could emerge over an extended period, potentially overlooking more complex dynamics in teacher motivation.

This study highlights the importance of complex and reflective approaches to understanding teacher motivation. Engaging with the duoethnographic method was not only a means of data collection but also a transformative tool for us as teachers. It allowed us to critically examine our practices, identify challenges, and develop strategies for professional growth. By integrating cognition, affect, and context – rather than examining them in isolation – this paper represents a deeply personal and professional exploration of ESP teacher motivation. Overall, this holistic perspective opens avenues for further research and lays the groundwork for more comprehensive frameworks that capture the dynamic interplay of these factors in teachers' motivational experiences.

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Authors' Contributions

IDB and BMC participated in the design of the study and completed the data collection, analysis, and interpretation. Both authors were involved in the drafting, writing, and reviewing of the manuscript and both read and approved the final version.

Ethics Approval & Consent to Participate

Since the data were derived from the authors' retrospective reflections, ethics approval was not required.

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