Language teacher professional curiosity: Understanding the drive for professional development

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Abstract

Teacher professional development (PD) has been shown to have numerous benefits, such as greater self-efficacy, higher motivation, and enhanced wellbeing (e.g., Kimura, 2014; Polin, 2023; Wang & Chen, 2022), and teaching additional languages is certainly no exception. However, the extent to which teachers are willing and able to engage in PD throughout their careers depends on many factors, some of which are related to the context in which they work, while others are reflective of their individual attributes such as attitudes, motivations, and personality. This paper focuses on the latter by reporting the findings of a study that examined language teacher professional curiosity (LTPC). The data were collected through semi-structured interviews from 6 Austrian and 6 Polish language teachers at different stages of their careers. Qualitative analysis allowed valuable insights into the nature of LTPC, curiosity-driven behaviors as well as factors influencing these behaviors. It also provided the basis for a tentative cyclic process model of LTPC in which interest and curiosity interact to produce a focus of curiosity, which is impacted by motivation, agency, autonomy, and social context, generating a drive for teacher behaviors in respect to their PD.

Keywords: teacher professional development; curiosity; interest; language teacher professional curiosity

1. Introduction

As professionals, all teachers, including teachers of additional languages, are expected to keep updated to maintain their expertise in their field throughout their careers. While expertise can be gained from experience, much can also be learned explicitly and deliberately, in particular by challenging one's own potential blind spots and assumptions. In addition, educational reforms, new policies, and innovative teaching tools demand constant adaptation and embracing of new frames of reference for work (see Mercer, 2023). In teaching additional languages specifically, the language itself is also constantly evolving. As such, professional development (PD) is essential for language teachers to stay informed about the latest understandings of learning and teaching processes, new developments in the areas of policy, tools, resources, and language, and it can also represent a valuable opportunity to explore understandings of their own practice (Freeman, 2024; Johnson & Golombek, 2016). PD has also been shown to have additional benefits for educators in terms of, for example, increased self-efficacy (e.g., Cabarlogu, 2014; Polin, 2023), stronger teacher identity (e.g., Nazari & De Costa, 2022), higher work motivation (e.g., Kimura, 2014), and enhanced overall wellbeing (e.g., Wang & Chen, 2022).

Despite the personal and professional benefits, some language teachers may resist engaging in PD opportunities. The reasons can include contextual factors, such as poor-quality or irrelevant PD, low resources, lack of time, and overwork (e.g., Borg, 2015; Gregersen et al., 2023; Sadeghi & Richards, 2021). However, there are also more informal, self-directed forms of PD teachers can engage in, such as reading professional literature, joining professional networks, team teaching and so on (see Mercer et al., 2022). While some practitioners embrace such options, others choose to avoid any form of PD. This is occasionally understandable for survival reasons during periods of great stress, but such a situation is frustrating for educators themselves in the long run and can contribute to stagnation or rust-out, understood as a drop in motivation and job satisfaction from getting "rusty" in the familiar (Gmelch, 1983). Given the diverse opportunities for PD, it becomes apparent that whether teachers choose to take advantage of such opportunities will depend not only on structural support and time, but also on their individual attributes, such as attitudes, beliefs, emotions, motivations, or personality. In other words, even within existing socio-contextual constraints, individual difference (ID) factors are likely to determine at least in part the extent to which teachers will perceive professional growth throughout their careers as important and thus will choose to actually prioritize it. However, research on the impact of language teachers' individual profiles (understood as ID variables and their constellations) on their approach to PD is limited. To fill this

gap, our aim in this study was to shed light on the characteristics of language teachers which may lead them to seek out opportunities for professional growth, variety, and challenge. In line with this goal, we targeted the concept of *language teacher professional curiosity* (LTPC) which, as we anticipated from the general literature, could be defining for teacher behaviors in respect to PD. Based on our findings, we propose an initial model of how this construct appears to function in relation to PD for the teachers in this study. Our hope is this may serve as a crucial impulse for further empirical investigations in respect to the construct of LTPC and how it may interact with other variables across diverse contexts and populations. Following a brief literature review, which focuses on the importance of language teacher PD, the nature of curiosity, and the scant research on this attribute in language education and acquisition research, we outline the study, describe the nature of LTPC emerging from the data, and reflect on lessons that can be drawn from this and directions for future work.

2. Literature review

Professional development (PD) is a way of ensuring that teachers can keep abreast of changing trends in language education so that they can constantly refine and expand their pedagogical, didactic, and linguistic skills. Teacher learning of this kind has been shown to be beneficial not only with respect to contributing to enhanced teaching practices but also in terms of boosting practitioners' motivation and wellbeing, thus reducing the risk of demotivation, burnout, and ultimately attrition (Hashimoto & Nguyen, 2018; Kimura, 2014; Mercer, 2023; Sadeghi & Richards, 2021; Wang & Chen, 2022). PD opportunities can come in many guises. A notable proportion of PD is likely to be *formal* in nature, whereby teachers are invited to attend talks, seminars, or workshops offered by other professionals (Cirocki & Farrell, 2019). Language teachers may opt to take part in these activities on their own initiative, although sometimes they may be prevented from doing so due to lack of funds, time, or other absent forms of support from leadership. However, formal PD can also be imposed by schools and authorities. While formal PD can be beneficial, it can be problematic when conceptualized as a transmission of knowledge, giving little heed to the needs and profiles of actual teachers and learners in specific contexts (Artman et al., 2020; Borg, 2015; Korthagen, 2017). *Informal* PD, which is typically self-directed and autonomous, allows language teachers to make their own choices about the events and activities they would like to engage in or resources they would like to draw upon. The main strength of this approach is that it is better suited to the real-world concerns and challenges of practitioners who can decide what is relevant

and feasible for their context. It enhances teacher leadership and autonomy and is more democratic and participatory in nature (Artman et al., 2020).

An important caveat for engagement with either form of PD is that language teachers need to be *willing* to make this kind of effort in the first place. This means that the effects of PD, whether formal or informal, hinge not only on its form, quality, frequency, and availability but also on language educators' readiness to avail themselves of such opportunities and their response to them. Thus, whether different forms of PD will have a bearing on instructional practices depends on an interplay of cognitive, affective, and motivational processes as well as a range of ID characteristics (Bahrami & Hosseini, 2023; Korthagen, 2017; Schutz & Zembylas, 2009; Zhang et al., 2021). One attribute that may be a pivotal ingredient of PD processes and mitigate their outcomes is *language teacher professional curiosity*.

Curiosity is a crucial motive that influences human behavior in positive and negative ways in a wide variety of contexts. It can be understood as an amalgam of cognition and motivation that underpins an intrinsic desire to resolve an existing information gap (Loewenstein, 1994). This attribute performs both a motivational and behavioral function (Kashdan et al., 2020). On the one hand, it offers an impulse for seeking out, exploring, and capitalizing on situations which have the potential to generate new knowledge and experiences (Spielberger & Starr, 1994), and, on the other, when such feelings consistently trigger action, this can result in assimilating new information, enhancing intellectual capacities, boosting creativity, but also extending and strengthening social relationships (von Stumm & Ackerman, 2013). Similar to many other ID factors, curiosity can be conceptualized as a relatively stable, measurable *trait* or as a more transient *state* that emerges from the interaction of situational variables and thus is more difficult to capture in fixed terms (Litman, 2019; Spielberg & Starr, 1994). When curiosity is viewed as a trait, the main goal is to provide insights into its substance and structure as an integral part of an individual's personality. In this sense, curiosity has been incorporated into key models of personality being considered as a more explicit or more tacit facet of the global trait of *openness to experience* with a focus on its intellectual and academic dimension (Silvia & Christensen, 2020). Analyzing items from four inventories tapping into openness to experience, Christensen et al. (2019) identified three main lower-order facets that reflect curiosity, that is, *variety seeking*, *intellectual curiosity,* and *intellectual interest*, with the caveat that some items were also reflective of *non-traditionalism* and *aesthetic appreciation.*

When curiosity is approached as a state, emphasis shifts to the way in which this feeling is aroused momentarily when an individual becomes aware of an information gap in a specific situation and takes action to close it. In an effort

to reconcile different theoretical positions, Kashdan and Silvia (2009) describe this attribute as "an approach-oriented motivational state associated with exploration," adding that it signifies "the recognition, pursuit, and intense desire to explore novel, challenging, and uncertain events," which then "motivates people to act and think in new ways and investigate, be immersed, and learn about whatever is the immediate interesting target of their attention" (p. 368). Curiosity that emerges at a particular moment in time is actually acted upon when individuals: (1) notice some potential for novelty, (2) make the assessment that they can successfully cope with this novelty, and (3) have an intrinsic desire to embark on this course of action (Kashdan et al., 2020; Pekrun, 2019). A key issue signaled by several scholars (e.g., Kashdan & Silvia, 2009; Pekrun, 2019; Peterson & Hidi, 2019) is the terminological overlap between *curiosity* and *interest*. While some, such as Hidi and Berndorff (1998), highlight differences between the two concepts, arguing that curiosity is aversive, while interest is pleasant, others, such as Pekrun (2019), suggest they "are neither the same nor completely disjunct" (p. 910), pointing out that curiosity is a special manifestation of interest. Litman and Jimerson (2004) distinguish between curiosity as a *feeling of interest* (I-type) and a *feeling of deprivation* (D-type). While the former concerns situations in which individuals are willing explore for the sake of aesthetic, pleasurable experiences, the latter occurs when they realize that they lack desired knowledge and wish to fill this troubling gap (cf. Litman, 2008, 2019).

Empirical investigations in a variety of domains have demonstrated that curiosity can be linked to a number of positive factors such as wellbeing, engagement, intrinsic motivation, and positive affect (e.g., Inceoglu & Warr, 2011; Kashdan & Silvia, 2009; Park et al., 2004; Wilson et al., 2005). In view of such findings, it is surprising that this variable has been neglected by language education researchers and has thus far been included in only a handful of studies. While earlier studies explicitly focused on curiosity in language learning (e.g., Houghton, 2014; Takkac Tulgar, 2018), the credit for laying the foundations for an agenda of research in this area goes to Mahmoodzadeh and Khajavy (2019). Taking as a point of departure the interest/deprivation framework of curiosity (Litman & Jimerson, 2004), they developed and validated the *Language Learning Curiosity Scale*, also providing evidence that the construct was positively related to enjoyment as well as willingness to communicate and negatively to anxiety. However, curiosity among language learners has seldom been the main focus of empirical inquiry, typically being included as a mediating variable, as is the case with the studies by Lake (2013) or Pawlak et al. (2022), where it was examined as one of the predictors of L2 grit. One notable exception is the study by Kruk and Pawlak (2022), where curiosity was investigated over time during L2 learners' visits to the virtual world "Second Life" alongside anxiety, boredom, and enjoyment. In addition, a large-

scale mixed methods study undertaken in the context of Hungary explored L2 learners' curiosity in connection with motivation, autonomy, self-efficacy, and emotions (Csizér et al., in preparation). However, to the best of our knowledge, there is no study that has explicitly focused on curiosity as manifested by language teachers and, consequently, this topic remains a true terra incognita. This situation is clearly disconcerting in view of the fact that LTPC provides an important lens through which language teacher PD can be understood. Clearly, the willingness to engage in behavior with a view to fill gaps in one's knowledge and acquire new information, whether driven by interest or deprivation, is a crucial motive that determines the extent to which language teachers will decide to focus on their professional growth and take advantage of different forms of PD. The study reported below represents a first exploratory step aimed at filling this gap in the existing literature and providing initial insights into the nature of the construct and the possible role it could play in language teacher PD.

3. The study

3.1. Aims and research questions

The present empirical investigation sought to disentangle the complex nature of LTPC and offer insights into the way in which it was enacted by language teachers from two educational settings in Europe: Austria and Poland. The choice of these two settings was driven by the fact that the present authors were intimately familiar with these contexts and so could bring an emic perspective to bear which allowed for nuance and detail in the analysis and discussion. Both contexts have comparable educational systems and cultures, but some key differences also exist which can be explored. Specifically, the following research questions (RQs) were formulated:

1. What is the nature of language teachers' professional curiosity?
2. What types of behaviors are driven by their curiosity?
3. What factors mediate their curiosity-driven behaviors?

3.2. Participants

The participants were 12 secondary school language teachers from Austria and Poland. They were approached through both authors' networks of professional contacts in the two countries and volunteered to provide data. Detailed information about the teachers can be found in Table 1, where pseudonyms are used

to ensure anonymity. Three important issues are worth mentioning at this point. First, there were more participants with extensive teaching experience, exceeding 20 years, in the Polish sample in comparison to the Austrian sample (5 vs. 2). Second, while Austrian teachers are required to get qualifications for teaching two subjects, which is reflected in the table, this is not the case in Poland where most teachers teach the same subject throughout their careers, although some of them may have graduated from other programs (e.g., Anna and Maria). Third, it is clear from the data that participants are not fully representative of the language teacher populations in both countries. This is because three teachers (all from Poland) held a PhD and another two (one from Austria and one from Poland) were working on their doctoral dissertations. Moreover, most of them were engaged in various additional activities that go beyond language school instruction (e.g., teaching university courses, providing teacher training, implementing international projects). Their willingness to volunteer to take part in this research also implies a higher-than-average interest in professional growth.

Table 1 Detailed information about participating teachers

Pseudonym	Country	Teaching experience in years	Second subject	Additional relevant information
Anton	Austria	12	Chemistry	Works on designing tests; co-authored a textbook
Lara	Austria	32	French	Teaches courses at a university; involved in teacher training
Alessia	Austria	18	German	Teaches a course at a university
Lucia	Austria	4	Latin	Recently switched schools
Helene	Austria	30	Music	Works for Ministry of Education and two teacher training centers
Karolina	Austria	3	German	Works on a PhD
Maria	Poland	30	History	Holds a PhD; teaches at university; takes part in international projects
Robert	Poland	20	N/A	Holds a PhD; works at university; publishes papers
Kasia	Poland	21	N/A	Teaches at private secondary school and university
Jan	Poland	26	N/A	Self-taught English
Anna	Poland	20	Journalism	Holds a PhD; teacher trainer; works at university; publishes papers
Monika	Poland	8	N/A	Also works at university; working on a PhD

3.3. Data collection

Given the exploratory nature of the present study, we opted for an inductively driven qualitative approach that would allow us to identify the key features of LTPC as well as its manifestations. The data were collected by means of semi-structured interviews with the 12 teachers which were conducted by the present

authors in the two respective contexts (i.e., Austria and Poland). The interview protocol was drawn up by the researchers based on a thorough review of the literature related to PD and curiosity, and later negotiated to take into account the particularities of the two educational settings. It included questions about teachers' backgrounds and contexts, classroom experiences, attitudes towards and experiences with PD, self, and interests as well as expressions of curiosity (see Appendix). The questions were formulated in English, and this was the language used during the interviews as all the participants taught this language and had a high level of proficiency (at least C1). Interviews were conducted online at a time that was convenient to both the teachers and researchers, lasted between 31 minutes and 1 hour and 9 minutes, and generated a transcribed corpus of 125,084 words. All the interviews were video- or audio-recorded, and either transcribed manually or checked for accuracy following automatic transcription. Prior to data collection, participants were informed about the goals of the study, assured that their responses would remain anonymous, and asked to sign consent forms. The data were handled with care to ensure that the identity of the teachers would not be revealed, and the researchers were only familiar with the names of the teachers from their own contexts as pseudonyms were used from the point of transcription onwards.

3.4. Data analysis

The anonymized transcripts of all the interviews were put into a single online Word file to allow the researchers to cooperate on initial stages of analysis. The analysis proceeded in four stages. Firstly, both authors conducted a careful reading of all the data, adding critical reflective memos to the shared file. Memos are initial thoughts about the data, including what the researcher notices and is prompted to reflect on. These memos and the data were then discussed by both authors to reflect on emerging themes and content and clarify any queries arising from the data, especially contextual uniqueness and variation. This cooperative first read strengthened the approach of the single author in coding, reflecting the insights and agreed perspectives of both. Next, the data were put into Atlas.ti (a data management software tool) and subjected to an initial first wave of inductive coding by one author to generate an initial code list, bearing in mind initial memoing but allowing the data to speak and keeping close to the teachers' voices by coding line-by-line. This first code list was again followed by joint discussion of the list in order to refine the codes and discuss any ambiguous data segments, ensuring a dual researcher perspective on the emerging codes and themes. As a third stage, one author engaged in a second wave of coding, grouping codes into key themes and memoing further issues of individuality, salience, and initial theorizing in and from the data. Again, this second

code list and the memos were discussed between both authors. Finally, one author engaged in a third wave of coding to tighten the code list and group into the main emergent themes. This resulted in a final code list of 55 codes covering core areas such as affect, beliefs, motive, dynamism over time and place, critical incidents, mindsets, learners, schools, and wellbeing among others. These were then grouped in ways which answered the three leading RQs.

4. Findings

The findings are thus organized around a discussion of curiosity as a psychological construct, domains of teacher interest, and curiosity-driven behaviors. Under each heading are subheadings which reflect the main themes in the analysis for each RQ. Given the exploratory nature of this study and the complexity of the data, the findings include some points of discussion as pertinent to specific issues being raised.

4.1. The psychological construct of curiosity

4.1.1. State-trait curiosity

The data reveal a distinction between curiosity as a personality *trait* and as a *state* to be satisfied. As a personality trait, at least five of the teachers reported being curious in life more broadly and being open to new experiences generally. For example, Anna reported on diverse leisure pursuits and explained: "I try to be an open-minded and well-rounded person. And to go out of my comfort zone." Most of these teachers mentioned hobbies outside of their professional domain and engaging in pastimes such as reading or travel was popular. It is known that having hobbies is extremely important for wellbeing (Seidman & Zager, 1991) and can provide meaning, purpose, and pleasure in life. As such, curiosity can be "the entry point to many of life's great sources of meaning" (Kashdan, 2009, p. 38).

Previous literature suggests that curiosity as a personality trait could be subsumed under the higher-order personality trait of openness to experience (e.g., Kashdan et al., 2018), and the data here also reflect a high degree or overlap in terms of the attitudes among the teachers. One example is Helene who commented: "So there is a curiosity, my personal life and my husband had to do many crazy things with me. You know, my children do things with me because they're crazy. We go trampoline jumping and stuff." She expanded further by stating: "I try to open new doors, see what it's like."

In the domain of learning, having a curious personality was expressed specifically as being "a lifelong learner." For example, Karolina offered the following

comment: "I feel curious very often, both in my private and my professional life, I would say that makes me a lifelong learner." Maria also stated: "I'm definitely a life-long learner. I always like learning new skills, whatever it is, not only in English, in many fields, in many fields." Learning new things in the professional domain was key to this study, but when it was expressed in terms of learning new skills in other domains, it could be viewed as being an indicator for a general tendency to be a person who enjoys learning new things and thus generally has a more curious personality.

However, curiosity was also expressed as a *state* in terms of being curious about something specific and this is the focus of the remaining analysis. Naturally, those who have a more curious personality are likely to be curious more often about a broader range of domains, thus possibly experiencing greater satisfaction when engaging in curiosity-driven actions (see Kashdan, 2009). This does not mean though that individuals with a less curious personality cannot be curious. Indeed, a state of curiosity can be compelling enough to capture a person's attention and inspire action even for those who are less curious or even interested in that domain. It is important to note that "our personalities are malleable and, in particular, that we can become more (or less) curious" (Kashdan, 2009, p. 32).

4.1.2. Curiosity within a domain of interest

The literature is replete with discussions on the problems of untangling the concepts of curiosity and interest. When analyzing our data, we were guided by Pekrun (2019), who suggests that, although these two constructs overlap in many ways, curiosity can be thought of as a sub-category of interest. This mirrors our findings which indicate that the language teachers have preferences for domains or aspects of their work that are of particular interest to them and they can get curious about specific things within those areas of interest most easily. It does not mean that they cannot be curious about anything else, but they have foci of their own interests where they tend to be more curious about things in those domains. The domains of interest for the participants of the study were split into three main areas, which often overlapped: (1) *an interest in a specific topic*, (2) *an interest in the learners as people and their responses to teaching*, and (3) *an interest in language teaching methods and tools*.

Anton was the most typical example of someone who has developed a specific topic of interest, to the extent that he took on additional roles and responsibilities in this area to further satisfy his curiosity in this domain. He explained: "The subject matter is interesting, if it's sort of along the lines of like, the testing and assessment, that's just always interesting." He was well aware of the distinction between being generally curious and having a specific domain which really excites him and drives his passion, as is evident in the following comment: "So,

I'm genuinely curious about lots of things, that, that's true. I think that I'm also outside teaching and so on, but there's definitely stuff I'm sort of really interested in and stuff that I'm barely interested or barely curious about."

The majority of the teachers in this study (*N* = 10) expressed a keen interest in their learners, both as people and especially as learners. The teachers were curious primarily about ways to help them learn and get them motivated. Alessia explained how her interest centers on her learners as individuals:

> When do I get curious about that, is whenever I have a student that that has trouble of some sort. Like I had this other student who would not succeed in, in listening comprehension. And I couldn't understand why until I realized that this person was actually hearing impaired . . . And to me, and I think that's where curiosity comes into play. I could leave it at that . . . But that doesn't make you a good teacher. Because actually, you have to pinpoint the core problem and find out. So why is this happening? And what are the steps this particular pupil has to take in order to improve?

Lucia, in turn, described being curious about what learners think, feel, and what ideas they have. She told how her curiosity about what they do in their homework had never waned over the years of teaching: "Yeah, but it, I still find myself waiting for their submissions, and checking MS-teams. And before I get my, my grade books, I scroll through the text to just see what they came up with. That's still the case."

The third domain of methods and tools was closely related to an interest in learners, which often led the participating teachers to explore different pedagogical approaches and resources. However, a number of teachers (*N* = 4) were fundamentally interested in methods and just enjoyed trying out new activities, tools, and approaches per se, often to keep themselves interested and motivated. Lara was an excellent example of a highly curious language educator who tried out various technologies, tools, projects, materials, and she explained: "So I love preparing new things that I haven't done before. So, the kind of road things are totally boring". Robert described constantly being on the lookout for new ideas, materials, or tasks: "I usually plan for the whole week, but it's not as detailed as it's just going through the coursebook, seeing what's in the coursebook, then looking at all the various Facebook groups. I'm on looking for fresh ideas, for some teaching materials."

4.2. Curiosity-driven behaviors

4.2.1. Motivation

Naturally, although a language teacher reports being interested and curious, various factors can thwart or strengthen any attempts to take action. To understand

fully the process of curiosity in action, it is important to appreciate the role of motivation in converting intention into behavior. In examining the collected data, it was helpful to think in terms of *approach* and *avoidance* motivations. In terms of *approach*, there are three main pulls to act on one's curiosity: (1) *striving for new knowledge/lifelong learner*, (2) *seeking variety, novelty, or challenge*, and (3) *feeling the need to be flexible*.

Striving for new knowledge can refer to learning about all or any aspect of language teaching, such as finding out about new topics or methods or being keen to see how learners respond. Helene described her motivation to keep trying out new things to see how they work in practice in the following way: "I'm just very enthusiastic about my job and about the things. This is also a character thing and I am too enthusiastic sometimes because I'm really looking forward to a new things or things that I think might work." Lucia also added how her goals center on always improving her teaching: "So that's one of my biggest, long-term goals, to find better strategies to motivate them, especially around teenage years." However, Robert also offered an honest and alternative perspective in explaining his drive for knowledge by wanting to be the best and earn praise, implying that not all motives for learning are necessarily intrinsically driven: "I love learning generally. I like reading. I like doing things. I never leave things unfinished. What motivates me to develop. I don't know. I like to be the best. I think maybe it's something deeper. Maybe I like to be praised. I don't know. I like when people say that I'm a good teacher."

Seeking variety, novelty, or challenge refers to three dimensions of a similar drive to want to experience new and diverse things for intrinsic pleasure. Lara described taking on the challenges of teaching her first language to a student via zoom: "I see this as a completely new challenge. And I noticed that, you know, after each lesson, I sit down and I make like, you know, some online games for him and stuff." She also referred to creating new things and projects as simply "fun," and stated very clearly that she needs variety in her work: "Routine bores me. I need routine to survive the daily challenge, kind of things you have to do, the of job routine. But yeah, I cannot imagine using a textbook and, you know, doing the same unit over and over and over again." Anton also explained his need to vary what he teaches as follows: "By not doing stuff the same way, very often, I mean, I might do them a couple of times to sort of test if they still . . . But I do lose interest in doing stuff the same way lots of times. So I will generally need to find new ways of doing stuff. Otherwise, it gets really boring."

The need to respond to learners in class and their needs also motivates the language teachers to try out new things and make adaptations to what they have planned. Maria explained that although she takes a coursebook as the basis for her teaching, she responds flexibly to the mood and needs of the students on the

day: "Sometimes when I see changes in students' moods, I introduce tasks which I haven't planned before. And of course, I pay attention to the . . . type of the group I teach." Indeed, this kind of adaptability has been identified in other studies on work performance and curiosity, and, as Mussel (2013, p. 458) concludes, "curiosity might facilitate adapting to and proactively dealing with new situations."

In terms of *avoidance*, the biggest motivation seems to be to avoid boredom, and, in our data, this referred only to what happens when teaching in class or preparing for class. Helene, for example, reported always trying out new things because she was constantly striving to avoid boredom – hers and that of her learners: "So it's there's always new challenges there. But as I say, even if it's sometimes it's over demanding, I still enjoy it more than the repetitiveness and boredom of always the same. The boredom is more of, yeah, actually, for me, the boredom is more of a problem than burnout, I would say." However, it is interesting to note that teachers' boredom threshold levels varied. While Helene needed a lot of variation regularly to avoid boredom, Lucia seemed more comfortable with greater repetition but still also tended to reach a point with a need for variation but later than would be the case for Helene:

> So at the moment, I need structure a little more. Because otherwise I get confused easily. And it makes teaching just so much easier for myself to, to have a structure and to watch the kids be calmer. But I also, yeah, I think if I if I had to teach the same units, three years in a row, I would need to change things . . . So, I think three years in a row is okay, for the same contents. And then I need more variety for myself

4.2.2. Agency and socio-cultural contexts

Several scholars have noted that to be driven to act in order to satisfy one's curiosity, one must have a *sense of agency*, and feel able and safe to take action (cf. Peterson & Cohen, 2019). Helene pointed out that "100% confidence" is necessary for language teachers to be willing to experiment and try out new things. Karoline, who was an early career teacher, also talked about how once you have built up confidence and experience, you are then willing to try out different methods: "I think in terms of teaching routines, introducing new methodology into your teaching usually comes more naturally, when you have a certain amount of, you know, when you have this strong sure base of methods that you use, and then you start to change, because you are curious about what's right." This sense of confidence and agency was evident for most of our participants, who were, of course, volunteers. Peterson and Cohen (2019) advocate a need to take a domain-specific approach to curiosity as they argue that people's interest and confidence change over time as they gain experience in a domain and

this needs to be recognized in models and frameworks on curiosity. For these participants, the domain of language teaching was the focus of their curiosity as reflected implicitly in their interest in how to teach; however, it is interesting to note that some areas were general educational domains such as an interest in learners, with only four teachers mentioning a specific interest in language per se. The role of domain-specificity in future research on curiosity will be an important aspect to clarify this issue further.

Another key element, which appears to facilitate curiosity-driven behaviors, is the *degree of autonomy* manifested by the participants to explore their own pathways of interest. Anton explained how his curiosity had changed over time, especially with the freedom and autonomy to choose what domains of interest to focus on: "So there were lots of stuff that I really wasn't interested in or wasn't sort of curious about or wasn't interested in learning. But and I think that's definitely sort of become more so as I've sort of grown older. And I think sort of being able to know that I'm able to pick what I want to sort of focus on, that's become a lot better." Karoline explained how important it was for her motivation when she is allowed to explore her own curiosities:

> So being able to make my own choices and do the things that I want in my classroom, I have the luck of the head teacher right now, who doesn't interfere with whatever we want to do in the classroom at all. So I would actually say that the most motivating things because that also gives you the chance to stay curious, because if somebody else comes in and tells you, you have to do this, or you have to do that, I mean, if it's, you know, something coming from the outside, that's not going to motivate you as much as something that you from the inside want.

In contrast, Jan talked about the frustration and demotivation triggered by a lack of autonomy in choosing his own forms of PD: "I mean my school promotes, you know, professional development, but I don't think you could actually choose what you would like to do."

Other features of social contexts were also shown to impede or support the teachers in their endeavors to satisfy their curiosity. Kashdan and Silvia (2009, p. 370) note that "there are important social and institutional moderating variables" which require consideration in order to "understand the conditions leading to favorable and unfavorable" contexts for curiosity-driven behaviors. Ashcroft et al. (2020) point to the importance of a culture characterized by "psychological safety" as being key to fostering curiosity. In other words, people need to feel safe and confident in their contexts to explore and be curious. Finding out new things and learning is not seen as an indication of weakness or deficiency but a sign of strength. Lara made an interesting observation about a school she worked at but then chose to leave as it felt as if she was not being encouraged or supported to keep trying out new things:

> *And what I think one of the other reasons why I left the school was that after a certain time, the majority of teachers felt so proud to be a teacher at this school, and everything's working so well. "We're the best school anyway." And there was no more room for change. And there was no more room for creativity, because everything seemed so perfect to them anyway. It started to feel like a bit of a straitjacket to me. In my own classes, I could still do what I wanted to do. But in the school, there was no more room for kind of improvement.*

Maria also highlighted the key role played by school leadership in encouraging curiosity and exploration: "You can feel it. You can feel this inspirational atmosphere. She really cares. She tries to attract a lot of a lot of projects to school. Whenever I come, whenever I approach her with a with any ideas, even the craziest ones, she's always delighted and she discusses this stuff with me and she has never said no, you can't do that. Don't bother me."

The dynamism of the curiosity process across time was also visible in the data. Anton explained how the time of year and other commitments can impact on his willingness to act on his curiosity. During times of stress, he was naturally less curious and less motivated to satisfy his curiosity as he just does not have the capacity:

> *I'm curious about everything. During, in August, at the latest, I'm sort of itching to, like, do something and talk to people and, and sort of, but of course of before Christmas, or before, like, mid-June or something, I don't want to hear anything, or talk to anyone about anything. So it does go up and down, of course, with stress levels, and with work and with exhaustion, and so on.*

The role of physical wellbeing and stress was also interesting in the case of a Polish participant, Jan, who was struggling with financial difficulties, over-tiredness, stress, and family issues: "OK, those, those two incomes like this tutoring and school. Yeah, I, I mean, not exactly, but I just get by right. I just get by . . . But definitely this, this is the main reason why I don't. I don't follow, you know this. What do you call it? Personal development. OK, thing. OK. I simply don't have the time for it." His data displayed the least curiosity among all the participants and he explained how he was often too tired to provide any variety in his teaching. He believed the students liked the routine, even though he admitted it was perhaps boring: "OK, you fall into a rut. OK, you . . . So you, you, your, your, your teaching becomes a routine. OK, but I think that this is what the students like. Because you are predictable as a teacher then and they know, uhm, you know your reactions, and I think it's good. It's a kind of a boring, but it's good. It works."

4.2.3. Types of behaviors

In terms of how teachers acted on their curiosity, three main paths of action emerged which mirror the domains of interest teachers had. Firstly, teachers engaged in seeking out diverse materials or tools to vary their language instruction typically by exploring online or talking to colleagues. For example, Alessia stated: "Where else do I find inspiration? Well, with some of the magazines like the ELT professional, you know, I keep on reading there. And I already said online and with my fellow colleagues, so I think those are the major sources of input." Robert also made clear how much he could find himself following his own interests and how this has changed since he began his career: "Well, nowadays it's so much easier because . . . . There's plenty of things online."

However, the teachers also reported on more formalized PD opportunities for language educators, and the role of institutions and leadership in supporting or suffocating this type of PD was evident across the data. Lucia described it well with the following comment: "Yeah, I'm trying to do as much stuff as possible. It's, I have the feeling that it's getting restricted a bit by the school because they don't want many teachers to go away for a long time." Monika also shed light on how damaging it is when things are prescribed and the teachers do not have the autonomy to follow their own pathways of interest: "So there is like a set of courses and, and, and trainings that we are supposed to take part in and those are chosen by mostly by our head teacher. And like most of them are not my field of study and they don't really interest me but it's, it's compulsory."

Secondly, the teachers who displayed curiosity appeared to be open to reflecting on their practice to learn consciously from experience. For example, Robert described how he thinks over his teaching and what he can learn from it: "I reflect a lot. I think about the things I do, the things I did. I look at what went right and what went wrong. Uhm, what works? What? What was and what I liked? Also, because some things I just, I get bored myself. So yeah, I think about classes." Another way of reflecting on practice to learn from it was by explicitly eliciting feedback from learners. Alessia reported on how she actively elicited feedback from her students as she was curious about their opinions and also motivated to use their feedback to improve her instructional practices: "I get a lot of feedback from the students and they keep telling me important things. So curious . . . So feedback from the students is a major source for my personal motivation for my curiosity, if you want to put it that way, in improving." This raises interesting questions about the role of LTPC in approaches to teaching practice which embed professional learning as a way of being in the classroom, such as inquiry as stance (Cochran-Smith & Lytle, 2009), exploratory practice (Allwright, 2003; Hanks, 2019), or reflective practice (Schön, 1987).

Another way of acting on their curiosity led the participating teachers to take on additional roles and responsibilities, which reportedly boosted their satisfaction and was good for their wellbeing. However, these tasks could also cause extra strain when time for all the commitments was stretched too far. This was notable for all of the Austrian teachers and one of the Polish teachers. Importantly, it is also worth noting the distinction between those who voluntarily chose to engage in additional tasks to satisfy their curiosity and those, such as Jan in Poland, who were forced to take on additional tasks to make sufficient money and enjoyed none of the benefits for wellbeing in satisfying their curiosity and only experienced it as a strain.

4.2.4. Positive emotions in the curiosity process

Being able to satisfy their curiosity, irrespective of its focus, was often associated with positive emotions. The most frequently cited emotion was enjoyment, an emotion experiencing a spike of interest in language education research (Botes et al., 2022) which could play an important role in teacher psychology and approaches to PD. Karoline explained how she begins with curiosity and once she has satisfied it and learned something new, that is a rewarding outcome for her: "I think the biggest reward that I can get, that I can get is understanding something. So pure curiosity usually is the beginning of a rewarding thing for me." The crucial issue to understand is that the pleasure of enjoyment is not only an outcome of satisfying language teachers' curiosity but also an intrinsic part of the process. Anton described how he was less driven by the output of his engagement in a new project but just the intrinsic pleasure of doing it and how this pleasurable experience opened up a pathway for further curiosity:

> And it's really great if something works, and people like it, and no question about that. But it doesn't really, it doesn't really satisfy any sort of this urge of stuff. So it's not the product is completely doesn't really interest me anymore. So, it's really about the process of making that product. That's, that's, that's the motivation.

In other words, it is intrinsically enjoyable to work on something you are curious about and have an interest in. Experiencing positive emotions at work and through PD is likely to boost wellbeing and enhance engagement creating a positive cycle (e.g., Fredrickson, 2000).

Finally, it is also worth noting that Karoline indicated the potential for negative emotions if you end up frustrated by a lack of knowledge or your inability to ever feel satisfied with your quest for knowledge and learning, which is a known side effect of perfectionism (Macedo et al., 2014). She felt that she is driven by wanting

to have 100% knowledge of a topic, but she realized herself that it has negative effects. This is evident in the following comment: "I know that this is actually not very smart, because it can make you unhappy." Therefore, although most of the curiosity-driven endeavors reported in the present data were associated with positive outcomes (e.g., enjoyment, fun, flow), the potential for negative outcomes if there is no resolution or an unhealthy obsession with a topic or domain needs to be explored in further work. Insights from scholarship on two types of passion (i.e., obsessive and harmonious) might offer some useful thoughts for such research (Vallerand et al., 2003).

5. Discussion

This study sought to generate a deeper understanding of language teacher professional curiosity considering its composition, how it relates to teachers' motivation for PD and behaviors or actions for learning and growth, and what factors can impact on whether and how teachers act on their curiosity. Throughout the presentation of the findings, specific detailed issues were highlighted to give justice to the complexity of the data and the data were organized in a way that responded to the RQs. In this section, we will reflect on key themes emerging from the answers to those RQs.

Firstly, we will present a cyclic process model of LTPC emerging from these data. Three aspects of the findings are noteworthy in this regard. The first is the dynamic nature of curiosity and its interplay with these teachers' PD behaviors. Specifically, the language teachers' sources of curiosity and the relationship to their actions can change over time as they experience new things and also as they gain confidence. This relationship can also change depending on how much capacity the participants felt they had to take action on their curiosity, which stemmed from their levels of stress, sense of agency, and other perceived pressures or supports in their contexts. This is especially interesting in demonstrating a link to wellbeing, not only as an outcome of the enjoyment of learning stemming from PD, as expected from the literature and curiosity satisfaction (e.g., Kashdan, 2009; Russo et al., 2023), but also with wellbeing as a possible mediator of whether one feels able or willing to engage in PD. Secondly, the data revealed individuality and uniqueness in teachers' curiosity and interests, which also suggests variability in how LTPC is expressed, experienced, and acted upon by different teachers, which in turn cautions against reliance upon universal models that cannot accommodate such diversity. Third, it is important to recognize the role of contextual factors, such as leadership, workload, or PD opportunities, in mediating teachers' curiosity, agency, and motivation to take action for PD. The implication is that models of LTPC and PD need to ensure an understanding

of social contexts as these quite clearly mediate relationships between the two. Furthermore, the findings highlight the importance for PD models to recognize the teachers as complex psychological beings (cf. Korthagen, 2017). Universal transmission models of and approaches to PD, which do not account for the uniqueness and individuality of language teachers embedded in diverse, dynamic social contexts, are at risk of failure. There can be no one-size-fits-all PD and understanding the unique ID profiles and preferences of individual educators will lead to more meaningful and motivating PD in the long run.
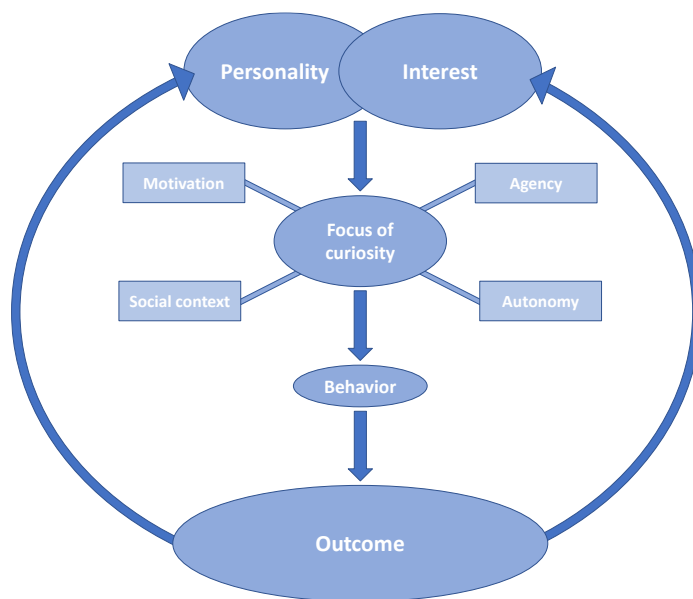
Figure 1 Cyclic process model of LTPC and PD behaviors

To summarize these insights, we offer a preliminary visual of a possible cyclic process model of LTPC and its relationship to PD behaviors and actions (see Figure 1). To begin with, all teachers are individuals and have their own areas of interest and things they are curious about; these may change over time and are impacted by experiences, but we take them as the key trigger here given the focus of the study. Combining an individual's unique personality and areas of interest makes people susceptible to becoming curious to differing degrees about different things. A teacher's ability to take action on that curiosity depends on a blend of psychological and contextual variables related in our data to motivation, autonomy, sense of agency, and characteristics of the social context including affordances for PD. Based on what they experience following taking action to satisfy the "curiosity itch" (Leslie, 2014), language teachers may manifest positive emotions such as the pleasure of acquiring new knowledge or

enjoyment from the participation in learning, which in turn feed back into language teachers' curiosity and interest, encouraging them to continually repeat the process. Alternatively, if language teachers have negative, frustrating, or dispiriting experiences of their PD actions, this may subsequently feed back into their curiosity and interest, effectively killing them. As a result, those teachers are left disinterested, apathic, and unwilling to engage in further learning endeavors. The model implies a key role played by the individual characteristics of the language teacher, in this case a focus on LTPC, which interacts with socio-contextual factors and which can change over time and with experience.

6. Conclusion

The present paper reported an innovative qualitative study which aimed to shed light on the nature of LTPC, the actions and behaviors it promoted as well as factors impacting these. The main contribution of the inductive analysis of the interview data is the tentative process model illustrating how curiosity and interest could interact to create a focus of curiosity, which, in turn, is acted upon in a particular way depending on a combination of issues related to motivation, autonomy, agency, and social context. Positive consequences of those behaviors can feed back into L2 teachers' curiosity and interest, encouraging them to continually repeat the process. We argue that the model is highly relevant to PD and can help better understand practitioners' commitment to professional growth, highlighting the role of individual differences among language teachers as well as socio-contextual factors, a point stressed by other scholars interested in language teacher PD (Freeman, 2024).

  As with all research, this exploratory, small-scale study is not free from limitations. First, participants self-selected to take part in interviews, they had above-average qualifications, and they were actively involved in activities that were not required by school authorities, suggesting higher levels of motivation and curiosity. Second, the sample was comparable but diverse, with participants possessing different levels of experience in teaching an additional language but also, especially in the Austrian sample, having qualifications to teach a variety of other school subjects. We argue this actually adds breadth and diversity to the sample, which ensures greater complexity across the data. Third, the data were collected in two European countries, and it is likely that the nature of LTPC and the actions it triggers might differ in other cultural and educational settings. Fourth, there are bound to exist other factors that influence the way individuals experience and act upon LTPC, such as wellbeing or other ID variables (e.g., overall motivation, self-efficacy, emotions), as well as other dimensions of social contexts.

With all of this in mind, more research is needed to help further disambiguate the construct of LTPC, understand its functions and interconnections with other factors. An important step in this direction would be the development of a scale that would allow tapping into LTPC in larger groups of participants, thus allowing quantitative analysis of its relationships with other potentially relevant variables (e.g., personality, self-efficacy, mindsets). Another interesting line of inquiry would be to apply the experience sampling method to the study of LTPC, which would offer potentially fascinating insights into how curiosity is enacted on a daily basis and how it fluctuates over time and in combination with specific contextual factors. One can also envisage pedagogical interventions that would help foster curiosity and interest in pre-service and in-service language teachers with the additional benefit of possibly leading to gains in wellbeing (Park et al., 2004). LTPC has great potential to help us support language teachers in their professional roles and we hope this paper triggers a wave of further research to better understand this potentially critically important individual variable.

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APPENDIX

Interview protocol – Language Teacher Professional Curiosity

Background and context
- Tell me about your journey to becoming a teacher (including motivation)
- Did you enjoy your studies? If so, what specifically did you enjoy/not enjoy about studying?
- How would you describe your job at present?
- What are your main responsibilities?
- How would you describe your school?
- How strong is your identity and sense of belonging to your school?
- What are the most challenging aspects of being a language teacher? And how do you manage these challenges?
- What are the most rewarding aspects of being a language teacher?
- To what extent has your experience of teaching changed over time since you qualified to now?

Scenarios (micro-level curiosity)
- To what extent do you like to vary or keep routine in what you do in your teaching? How does this manifest itself?
- How do you use your coursebook in your teaching?
- Thinking about a particular class you taught last week, how did you prepare for it? How typical is this of the way you prepare your teaching?
- How important is it for you to have a plan and stick to it?
- After a class, to what extent do you reflect on your teaching? When, why and in what ways? Any triggers?
- To what extent is it important for you to know your learners as individuals? If yes, how do you this?

Attitude and experiences with CPD
- How do you keep motivated in your job?
- To what extent do you take part in organised CPD?
- To what extent do you seek out your own options for CPD?
- To what extent do you actively engage in critical reflection about your teaching?
- Would you describe yourself as a lifelong learner? Why/why not?
- In what ways does your school promote or support your growth as a teacher?
- Looking back, how useful has your teacher training been for your practice?

Personality & interests
- How would you describe yourself as a teacher? (Strengths and weaknesses)
- What do you find interesting about your job?
- What do you enjoy doing most in your job?
- To what extent would you say you ever experience boredom in your job?
- What are your interests outside of school?

- What are your goals for the coming years – personally and professionally?

Curiosity components
- We are trying to understand the role of curiosity for teachers in their professional lives. How would you understand curiosity in the life of teachers?
- To what extent do you feel curiosity is important for a teacher?
- Can you think of a colleague who is especially curious? Why would you describe him/her as such?