XLingua

Examples of a possible study design (theoretical framework, research question(s), and methodology)

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Context and theoretical framework

Successful communication depends not only on grammar and vocabulary, but also on the ability to interpret context, which for L2 learners means that familiar patterns from their other languages may not carry the same meaning in a new language; for instance, the way that people greet each other or linguistic choices related to style and politeness vary across languages and cultures (Shively, 2026). According to Shively (2026: np), however, "language textbooks and curricula often do not address pragmatic dimensions of language robustly, if at all", although instruction in pragmatics has demonstrated the potential to provide vital support to develop the skills to successfully navigate intercultural communication (for a review, see Takahashi, 2010; Taguchi, 2015). In other words, opportunities for interaction in the L2 are not always available in students' L2 input in an instructional setting.

XLingua provides opportunities to be exposed to and use the L2 are crucial for pragmatic development (i.e. ways that language is used in context). Their teaching approach is reminiscent of dynamic usage-based (DUB) approaches to SLA, which propose that idiomatic language and collocational competence emerges through repeated exposure to frequent, authentic input rather than explicit rule learning (e.g., Gombert et al., 2024; Köylü et al., 2024), with such exposure strengthening form-meaning mappings, promoting entrenchment, holistic storage, and automatized retrieval (Ellis, 2009; Hilpert, 2020; Köylü et al., 2024); accordingly, both the quantity and quality of input determine acquisition success, as frequent and rich input makes complex structures easier to process and acquire (Ellis, 2009; Hilpert, 2020; Kyle et al., 2021: 785–6; Köylü et al., 2024:120). DUB suggests the possibility of sidestepping the grammar induction approach altogether, focusing instead on the ways in which linguistic knowledge is built up and reinforced through specific usage events.

In this pilot project, the focus will be on L2 pragmatic development, with a special emphasis on communicative interaction and chunking. Communicative interaction can be understood as a cooperative joint activity (Pickering & Garrod, 2021: 2) in which interlocutors align linguistic, non-linguistic, and situational representations, enabling tightly integrated production and comprehension processes and the use of shared dialogue-relevant representations to anticipate each other's contributions (Pickering & Garrod, 2021). Turn-taking requires parallel processing in comprehension and production (Lenzing & Schmiderer, 2026).

Chunking is seen as a core mechanism through which learners acquire and store frequently encountered multi-word sequences, gradually building productive knowledge of the language (e.g., Ellis, 2002; Bybee, 2010). Chunks are stored linguistic units, ranging from syllables and words to

multimorphemic and multiword (including partially schematic) sequences, that are processed as single units rather than assembled online, exhibit relatively fixed or stereotyped form, and are associated with conventionalized, often complex meanings and specific pragmatic conditions of use (Ellis, 1996; Wray, 2002; Alali & Schmitt, 2012; Van Lancker Sidtis, 2012).

For more than fifty years, chunking has been recognized as a central mechanism for learning and memory in human cognition (McCauley & Christiansen 2019), holding the key to idiomatic L2 language use based on social contexts and cultural norms. Chunking offers a range of advantages for L2 learners, particularly in early stages of instruction and especially for adult learners. For instance, chunking helps learners manage their limited working memory (WM) capacity. As learners age, automatic language processing tends to decline, reducing the available WM for other cognitive tasks. However, older learners (i.e. adults), in part due to hormonal changes, experience a boost in declarative memory, enabling them to store complex expressions as whole units, rather than constructing them from individual elements. Furthermore, L2 learners face a heavier cognitive load than native speakers due to interference from their first language (L1). Chunking alleviates some of this burden and supports communication early on. Finally, all different kinds of learners are motivated by the communicative success that they experience when relying on chunks: "If learners always have to wait until they acquire the constructional rules for forming an utterance before using it, then they may run into serious motivational difficulties" (Hakuta 1976: 333). The use of chunks can be highly motivating, as it allows learners to experience immediate communicative success with basic greetings, questions, and expressions – helping to build confidence and momentum in the language learning process (Weinert 1995).

Despite their importance, however, the conventionalized, arbitrary and often language-specific nature of collocations poses persistent challenges for learners. These characteristics make collocations hard for learners to automatically detect in language data and thus to process and acquire (Gustafsson & Verspoor 2017; Köylü et al. 2024: 250; Wray 2002; Yamashita & Jiang 2010). Also, adequate exposure to frequent, strongly associated collocations is crucial for deep entrenchment and the development of target-like fluency, whereas insufficient exposure can hinder this process even as overall proficiency increases (Ellis, 2009; Gombert et al., 2024; Köylü et al., 2024). Specifically, beginner L2s (A1–A2) benefit from repeated practice with high-frequency collocations (e.g., *make a mistake*, *take a break*), while intermediate–advanced L2s (B1–C1) should encounter more diverse, strongly associated, and target-like patterns as their lexical knowledge grows (cf. Durrant & Schmitt 2009; Du et al. 2022; Li et al. 2024; Nation 2022).

Rationale and research gaps

Longitudinal studies with repeated observations on adult L2 learners' pragmatic development are entirely lacking; most existing research is cross-sectional, pre-post, or relies on self-reports rather than repeated, naturalistic measures of learners' evolving pragmatic competence over time (Taguchi 2019). Filling this gap is important because pragmatics develops gradually through exposure, interaction, and feedback, and online contexts provide increasingly significant L2 input and opportunities for interaction. Longitudinal, repeated-observation studies allow researchers to track developmental trajectories, understand the conditions that promote pragmatic growth, and identify how online and hybrid learning environments can support communicative competence, including in authentic,

contextually rich interactions. This knowledge is critical for designing effective instruction and digital learning tools that foster pragmatic competence in adult L2 learners. Furthermore, a recent meta-analysis by Taguchi et al. (2022) showed that, while 78% of studies in L2 pragmatics have focused on English as a target language, under 1% of studies in acquisitional pragmatics have focused on either German or French, and they issue the call that the "weighty influence of L2 English studies needs to be remedied by examining pragmatic competence in a variety of languages" (p. 327). An overreliance on English risks limiting the empirical and theoretical scope of acquisitional pragmatics by obscuring language-specific and crosslinguistic patterns of L2 pragmatic development.

While research into collocations in EFL materials remains limited, existing studies reveal systemic gaps. Northbrook and Conklin (2019) found that lexical bundles – frequent multi-word sequences often built from collocations – in Japanese EFL textbooks did not reflect authentic spoken usage, prioritizing high-frequency, but pedagogically simplified language instead. Others (e.g. Northbrook et al. 2022) showed that learners internalized these patterns, suggesting that (distorted) coursebook input directly shapes learners' collocation knowledge. Similarly, Ardi et al. (2023) found that the target input in bundles used in EFL coursebooks, used in Indonesia, were mostly formal, which was not consistent with daily conversations in English as a lingua franca. Direct collocations studies confirm these concerns. Alfiandita and Ardi (2020) identified a limited variety of collocations in EFL coursebooks used by Indonesian students, and Sarjono et al. (2022) reported that collocations were scarce and even absent in English textbooks. Collectively, these studies suggest that EFL materials prioritize pedagogical simplicity and learnability over authentic progression, potentially undermining DUB entrenchment and progression. This is regrettable for a variety of reasons.

Chunking is widely regarded as a key indicator of L2 proficiency and target-like fluency, serving as both a prerequisite for proficient language use in L1 and L2 contexts and a measure of learners' growing command of formulaic sequences, which develop with increased proficiency, use, and experience in the target language (e.g., Pawley & Syder, 1983; Siyanova & Schmitt, 2008; Paquot & Granger, 2012; Paquot, 2019; Granger, 2021; Gustafsson & Verspoor, 2017; Macqueen & Knoch, 2020; Verspoor et al., 2012). However, there is also substantial evidence shows that learners, even at the lowest proficiency levels, rely on and benefit from collocations (e.g. Henriksen 2013; Myles et al. 1998; Skiba & Dittmar 1992; Yi & Zhong 2024). While DUB theory predicts that repeated exposure to frequent input drives systematic development, empirical studies on L2 collocational competence show mixed results, raising questions about the consistency of input effects. Fang and Zhang (2021) found that L2 proficiency and collocational knowledge develop asynchronously, progressing at different rates. Some research indicates a typical trajectory where high-frequency collocations are acquired early and lower-frequency or high-MI items emerge later (Durrant & Schmitt, 2009; Li & Schmitt, 2010; Men, 2017), with novice learners initially favoring high-frequency items and gradually shifting toward exclusivity around B1. However, other studies report plateaus, stable patterns, or even declines at advanced levels despite prolonged instruction. For instance, Siyanova and Schmitt (2008) observed that advanced Russian EFL learners were sensitive to appropriate collocations but showed weaker preferences for the strongest MI items, while Bestgen and Granger (2014) and Li and Schmitt (2010) documented static MI scores over 12 months. Later studies confirm similar trends, with no clear progression toward exclusivity (Brezina & Fox, 2021; Yoon, 2016), contradicting findings that suggest growing sophistication and exclusivity in learners' collocations based on MI scores (Paquot, 2019; Siyanova-Chanturia, 2015).

In a related vein, the relationship between L2 proficiency and pragmatic behavior in the form of e.g. contextually appropriate speech acts is far from settled. On the one hand, language proficiency has been put forth as a factor affecting L2 learners' ability to comprehend and produce pragmatic elements, for instance how quickly and accurately learners comprehend pragmatic cues and indirect speech acts (Koike 1996; Taguchi 2007a; Roever et al. 2014). That said, knowledge of pragmatic structures (i.e., pragmalinguistic competence; Bardovi-Harlig, 2009; Hinkel, 1996) does not automatically transfer to appropriate *use* of these structures (i.e., sociopragmatic competence; Marmaridou, 2023; Barron, 2003). Jin et al. (2025) assert that pragmatic skills "do not automatically develop with grammatical knowledge" (p. 2185; see also Taguchi, 2012). Long-term longitudinal studies which follow step-by-step development in grammatical and pragmatic skills are non-existent but direly needed in order to shed light on the extent to which L2 proficiency develops (a)synchronously with target-language pragmatic skills.

Methodologically speaking, a vast majority of L2 pragmatics research has drawn on carefully controlled (quasi-)experimental tasks to systematically evaluate differential pragmatic behavior in different social settings (e.g., Ogiermann, 2018), including for example written or oral discourse completion tasks (DCTs), multiple-choice questionnaires, role-plays (Sax, 2003), etc. According to Taguchi et al. (2022), only under 1% of L2 pragmatics research has drawn on naturalistic interaction data, for example Doehler and Pochon-Berger (2015), who examined the relationship between pragmatic competence and proficiency by analyzing the production of disagreements in audio- and video-recorded interactions naturally occurring in a French classroom. Examining pragmatic behavior in naturally occurring interactions is essential because it captures how speakers deploy pragmatic resources in real time, under authentic interactional and social constraints (e.g., Dürscheid & Simon, 2019; Taguchi et al., 2022). Unlike elicited or experimental tasks, naturally occurring data reveal the sequential, adaptive, and negotiated nature of pragmatic action, including how meaning is co-constructed with interlocutors. Such data provide a more ecologically valid account of L2 pragmatic competence and its development in interpersonal communicative settings. Taguchi and Kádár (2025) maintain that "classroom data should not only be studied with a pedagogic purpose, but also as a venue in which the study of sociopragmatic phenomena can be tested" (np).

Examples of research questions

1. To what extent do learners' chunk repertoires expand toward more target-like collocations and pragmatic routines across repeated lessons?
2. In what ways do chunk-based processing, pragmatic routines, and interactional competence develop together over time, and how does this interplay vary by learners' proficiency levels?

Method

The following dimensions of pragmatic competence are going to be assessed (inter alia).

- **Pragmatic routines i.e. chunks** (Shively, 2026): (semi-)fixed expressions such as "Nice to meet you" and "Sorry I'm late" that are used by many members of a community in specific situations

- **Speech acts** (Shively, 2026), which are instances when we realize an action by what we say. Examples include delivering an apology, making a request, refusing an invitation, giving a compliment, and offering a suggestion.
- **Interactional competence** (Shively, 2026), that is, "speakers' systematic procedures…for accomplishing actions in interaction and coordinating these with co-participants: procedures for turn-taking, opening or closing a conversation, repairing, disagreeing, requesting, managing topics, etc." (Pekarek Doehler, 2023, p. 282).
- **Turn-taking** abilities (Lenzing & Schmiderer, 2026)
- **Fluency** in interactional contexts (Peltonen et al., 2026)
- **Prosodic features** such as intonation, pitch, and stress (e.g., Taguchi, 2022)

The following individual difference variables have to be assessed via surveys:

- Demographic information
- Motivation and motivated behavior (e.g., Dörnyei, 2005; Hiver & Al-Hoorie, 2020; You et al., 2016)
- L2 willingness to communicate (MacIntyre et al., 1999)
- Extracurricular exposure to the target language

Final comments

Citizen science enables a productive collaboration between practitioners and researchers by bringing together pedagogical expertise from the classroom and research expertise from the university. In this model, teachers design and implement the instructional approach, collect and transfer the data, while university researchers develop the research questions, methodology, and analyses, and all partners jointly interpret the findings and contribute to publications, increasing both relevance and impact.

The project will adhere to the highest ethical standards in line with institutional and European guidelines. Informed consent will be obtained from all participants. The teachers and the research team will ensure that participation is voluntary, that participants can withdraw at any time without consequence, and that all findings are reported transparently and responsibly.

The data will be stored and handled according to the 'FAIR Guiding Principles for scientific data management and stewardship'. Data files will contain an anonymized identifier for each participant. The real identity of the participant will be stored in a separate file on a different local computer (i.e., not on the one used for data collection) in Switzerland. The access to this computer will be given to the local PI. This file will not be transmitted externally without being previously encrypted by a password. All language and behavioral data, as well as questionnaire responses, will be managed anonymously. A code is assigned to each participant and replaces their name in all references to their L2 data and questionnaires. For sharing anonymized data among team members, a cloud space will be set up with the Swiss company SWITCHdrive (https://www.switch.ch/de/drive/), which provides secured space for Swiss and European universities. Each researcher will be allowed to upload metadata on this platform. The University of Zurich storage platforms provided by the technology

platform “Linguistic Research Infrastructure (LiRI)” will be used. The raw data are stored on a secured server for 10 years and then destroyed.