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Multilingual academic genre knowledge: Insights from a mixed-method study of post-graduate students in Kazakhstan

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ABSTRACT

In an increasing number of post-graduate programmes in Kazakhstan, students may be expected to produce academic or professional texts in up to three languages—Kazakh, Russian, and English. While previous research has shown the benefits of genre-based approaches to English academic development, this study seeks to understand students' development of genre knowledge in multiple languages simultaneously. Using Tardy's (2009) four-part genre knowledge framework, a survey measuring self-reported genre knowledge in three languages was developed and administered to Master's and PhD students (n=283) at 6 Kazakhstani universities, followed by interviews of students (n=43), teachers (n=34) and administrators (n=30) on approaches to genre knowledge development. Survey data revealed students generally have higher genre knowledge in Russian, followed by Kazakh and English. Students have higher Formal knowledge than other types of genre knowledge across languages. Interview findings suggest students are primarily influenced by IELTS exam-based, Formal knowledge approaches to education in English. The results suggest a need for both explicit instruction in non-structural elements of genre knowledge in three languages, and expanded identification of the key components of genre knowledge in languages other than English.

1. Introduction

Genre knowledge has historically been described as an outcome of writing pedagogy that is focused on understanding the relationship between form and context (Tardy, Sommer-Farias, & Gevers, 2020). This outcome can be described as knowledge of specific structures of genres in a language (genre-specific knowledge), or meta-awareness of the audience, purpose, and structure across genres and languages (genre awareness) (Tardy et al., 2020). However, studies of genre-specific knowledge and genre awareness generally tend to be focused on the form and context within a single discipline and within a single language, usually, English (e.g., Esimaje & Gbenedio, 2018; Ives, Gokhale, Barott, & Perez, 2019). Other studies focused on development in bilingual and multilingual learners are oriented to the development of only the target second language, again usually English (e.g., Kim & Belcher, 2018; Kuteeva & Negretti, 2016; Yasuda, 2011). Such studies have not investigated genre-specific knowledge or genre awareness in multiple languages simultaneously for students across a single country who are navigating academia in three languages including English as a foreign language.

To address this gap, the purpose of the present study is to investigate and document genre-specific knowledge development in Kazakhstan, a context where language development in three languages is an expected outcome of a national trilingual education policy

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that aims to teach students at multiple grade levels in three languages (Nazarbayev, 2007). We present the results of a mixed-method study of postgraduate programmes in universities in Kazakhstan conducted to answer the following questions: (1) to what extent do students feel they have developed genre-specific knowledge (Tardy, 2009; Tardy et al., 2020) in three languages? (2) does self-reported genre-specific knowledge in each language correlate with their overall self-reported proficiency in that language? (3) can Tardy's four-dimensional model be effectively used to evaluate academic genre-specific knowledge in multiple languages through a Likert-scale questionnaire? and (4) what insights can the consistency characteristics of the data obtained through this questionnaire provide about the structure of academic genre-specific knowledge and its development in the Kazakhstani context? We intend to show that genre-specific knowledge is measurable among the three languages, and there is a relationship between genre-specific knowledge and overall language proficiency, findings which justify the use of genre pedagogies for different languages in education. Additionally, we argue that the inconsistencies between Tardy's model and the internal structure of the data may provide evidence of contextual differences in genre-specific knowledge development across languages, suggesting that the conceptualisation of genre-specific knowledge within languages other than English merits further refinement.

2. Literature review and theoretical model

2.1. Theoretical views of genre knowledge and genre-specific knowledge¹

Since the 1980s, scholars have defined *genre* not merely as a classification of texts, but as a social practice (Bawarshi & Reiff, 2010). Genre has been described as a rhetorical response to recurring social situations (Miller, 1984), a set of communicative events whose members are united by a communicative purpose (Swales, 1990), and a form of "situated cognition embedded in disciplinary activities" (Berkenkotter & Huckin, 2016, p. 3). Thus, academic genres are highly dependent on the context in which they are practiced resulting in generic differences across disciplines (e.g., Cheng, 2018; Negretti & McGrath, 2018; Swales, 2004) as well as across cultures (Connor et al., 2008).

In addition to this shift towards a sociological view, genre studies have also embraced the multilingual turn in second language learning (Cook, 2016; Hofer & Jessner, 2019; Todeva & Cenoz, 2009). Theories of multilingual genre knowledge development have been aligned in part with the Systemic Functional Linguistics conceptualisation of language knowledge (Martin & Rose, 2008). In this model, genre knowledge is rooted in the language through which it is practiced but, belonging to a social-contextual rather than textual level, it may be applied across different languages by multilingual users. Other scholars interested in the role of social context and social action have used the lens of Rhetorical Genre Studies (RGS) to understand the "symbolic worlds readers and writers co-construct and inhabit" (Bawarshi & Reiff, 2010, p. 54). These scholars have conducted interviews and surveys to uncover multilingual students' transfer of genre practices from their home language into English (e.g., Artemeva & Myles, 2015; Bawarshi & Reiff, 2010; Kim & Belcher, 2018). The few studies of genre knowledge which have explored simultaneous development in multiple languages (Gentil, 2005; Kobayashi & Rinnert, 2012; Sommer-Farias, 2020) are qualitative case studies of writing students in bilingual or trilingual contexts which show which show the ways multilingual writers agentively draw on knowledge repertoires across languages, and innovate across languages, for different contexts and purposes. While these positive outcomes suggest "writing knowledge overlaps" among multiple languages in the minds of multilingual writers (Rinnert & Kobayashi, 2016, p. 373), scholars also acknowledge that there is still a need for analytical measures (Rinnert & Kobayashi, 2016) of genre-specific knowledge and tests of knowledge constructs separately in different languages as well as among or across languages (Tardy et al., 2020).

To offer a larger-scale measurement of multilingual genre knowledge across individual, disciplinary, and institutional contexts, the present study relies on the definition of genre knowledge developed by Tardy (2009), which is now referred to as genre-specific knowledge (Tardy et al., 2020). Tardy (2009) conceptualised this knowledge as consisting of four domains. Formal knowledge includes knowledge of text structure, vocabulary, and grammar. Process Knowledge refers to knowledge of the steps in writing and publishing a text. Rhetorical Knowledge is defined as knowing the purpose and audience of genres, and identifying ways to communicate based on that knowledge. Subject-matter knowledge involves knowledge of the content relevant to one's area of expertise. Gentil suggests that Tardy's (2009) conception would be more appropriately named "genre competence" as it combines declarative knowledge or "knowledge about genre" (Formal) and procedural or "how-to-perform-a-genre knowledge" (Process and Rhetorical) (Gentil, 2011, p. 15).

2.2. Pedagogies for developing genre knowledge

The primary means of developing genre knowledge in an L2 or L3 is usually through classroom instruction (Cheng, 2019). One of the common approaches to teaching writing in such settings is genre teaching, which is based on the belief that explicit analysis of "expert" texts would be most effective in developing in students an understanding of how academic writing is organised and produced (Hyland, 2003). Rooted in the Vygotskian Zone of Proximal Development, genre-based pedagogies may offer a systematic, needs-based, supportive, and empowering way to help students build their genre knowledge (Hyland, 2007). There is, however, a debate regarding the effectiveness of explicit genre pedagogies. For instance, it has been argued that explicit genre teaching that does

¹ The term genre knowledge in this paper is used when citing articles that do not focus specifically on genre-specific knowledge or genre awareness, but may include one or both of these concepts. When referring to the framework developed by Tardy (2009) and its application in the present study, we use the term genre-specific knowledge.

not include genuine engagement with professional genres does not lead to successful development of genre knowledge (e.g., [Dias, Freedman, Medway, & Par, 2013](#); [Purcell-Gates, Duke, & Martineau, 2007](#)). Yet, there is a body of research that suggests that for multilingual learners it is highly beneficial to develop metacognitive competences, such as genre awareness ([Devitt, 2015](#)), recontextualisation ([Cheng, 2011, 2018](#); [Tardy et al., 2020](#)), and adaptive transfer ([DePalma & Ringer, 2011](#)) in order to draw on their full resources of knowledge of genres across various linguistic and social contexts. Such pedagogies may include the use of translation in English language teaching and composition studies (e.g., [Colina & Lafford, 2017](#); [Gramling & Warner, 2016](#); [McCarty, 2018](#)), and intercultural rhetoric (e.g., [Connor, 2011](#)). Moreover, empirical studies (e.g., [Huang, 2014](#); [Kuteeva, 2013](#); [Ye, 2020](#)) have demonstrated the effectiveness of explicit genre instruction in developing students' formal, process, and rhetorical knowledge.

To sum up, although [Tardy \(2009\)](#) herself presents the model as only a heuristic tool and warns against viewing the four dimensions of genre-specific knowledge as distinct epistemic entities, there are multiple reasons this model may effectively be used as a basis for a quantitative instrument measuring genre-specific knowledge. [Gentil \(2011\)](#) suggests that there might be some empirical evidence to support the separation of this genre knowledge into distinct components. The framework has already been successfully applied in a number of studies of genre-specific knowledge development in both monolingual (e.g., [Ives et al., 2019](#)) and multilingual contexts (e.g., [Driscoll, Paszek, Gorzelsky, Hayes, & Jones, 2020](#); [Huang, 2014](#); [Jwa, 2015](#); [Kim & Belcher, 2018](#); [Kuteeva, 2013](#); [Kuteeva & Negretti, 2016](#); [Negretti & McGrath, 2018](#); [Payant & Belcher, 2019](#)). What these studies have in common which also makes the original framework useful for the present study is they make use of the analytical framework of genre-specific knowledge in Tardy's model to evaluate and explain qualitatively the effectiveness of various pedagogies, such as genre-based instruction, in developing students' genre-specific knowledge. Finally, [Tardy et al. \(2020\)](#) indicate that genre-specific knowledge is partially language-dependent while genre awareness is language-independent. As the present study is interested in genre knowledge development within three languages, a framework focused on measuring language-dependent aspects of genre knowledge is appropriate. In the next section, we consider the broader contextual issues which may shape language-dependent genre-specific knowledge.

3. The research context

After gaining independence from the Soviet Union in 1991, the Kazakhstani education system found itself in an ambivalent state. There was a political and social aim to increase the role of Kazakh, which was restricted in use in Soviet policy and practice by the more prevalent and more powerful Russian language ([Goodman & Montgomery, 2020](#)). At the same time, the Early Constitution of Kazakhstan ([Constitution of the Republic of Kazakhstan, 1995](#)) identified Kazakh as a state language and Russian as a language of intercommunication, which generally placed both languages on an equal level as tools for preserving cultural identity and ethnic harmony as well as tools for communication in government and business. In addition, the country has had aspirations to position itself on a global scale, which includes the involvement in processes of globalisation which emphasize the increasing importance of English ([Montgomery, Sparks, & Goodman, 2019](#)). For higher education, part of the globalisation policy for higher education was the implementation of the Bologna Process in 2010 ([Jumakulov, Ashirbekov, Sparks, & Sagintayeva, 2019](#)), an agreement which has led to the increase of European universities that are using English as a medium of instruction (EMI) ([Phillipson, 2006](#)). Likewise, Kazakhstan saw the number of universities offering EMI increase from 2 in 2008 to 42 out of 125 institutions in 2016 ([Goodman & Karabassova, 2018](#)). In addition, the number of universities teaching subjects in three languages—50 % in the main language of instruction (Kazakh or Russian), 20 % in the second language (Russian or Kazakh), and 30 % in English—is expected to increase from 20 % in 2017 to 40 % in 2021 ([Ministry of Education & Science of the Republic of Kazakhstan \[MoES\], 2016b](#)).

The political justifications by the Kazakhstani government for the increase of EMI and the pursuit of trilingual education are both national and international in scale. The Trilingual Education Road Map 2015–2020 and the State Programme of Education and Development (SPED) 2016–2019, two documents which are a part of a larger presidential address called Strategy 2050 ([Nazarbayev, 2012](#)), call for fostering the implementation of trilingual policies while indicating that English is the main language of opportunities and professional development of Kazakhstani citizenry. The more recent version of SPED (2020–2025) emphasizes the “global competitiveness of education” ([primeminister.kz, 2019](#)). However, multiple local scholars have raised concerns about the preparedness of stakeholders (students, teachers, administrators) at all levels of education to engage in trilingual education effectively for multilingual learning ([Baltabayev, 2020](#); [Dontsov, 2016](#); [Gumarova, 2017](#); [Kanatkhanova, 2020](#); [Karabassova, 2020, 2021](#); [Karabay, 2017](#); [Yessenova, 2016](#)). One institutional study in a Kazakhstani international EMI university found that a genre-based approach to academic skills instruction had success in developing skills in English, but results were mixed for Kazakh ([Goodman & Montgomery, 2020](#); [Montgomery et al., 2019](#)). Whether genre-based academic skills are developed in three languages in other Kazakhstani universities, or identified and valued in those universities by stakeholders in one or more languages, is an empirical question this paper seeks to shed light on.

While Kazakhstani education standard curricula in both secondary and higher education ([Ministry of Education & Science of the Republic of Kazakhstan \[MoES\], 2018](#)) do not include explicit genre-based pedagogies ([Hyland, 2003, 2007](#)), an alternate source of genre-specific knowledge development for students studying in English medium of instruction (EMI) or multilingual programmes in Kazakhstani universities are IELTS (International English Language Test System) courses. Because IELTS scores are a recognized English proficiency qualification in Kazakhstan ([Ministry of Education & Science of the Republic of Kazakhstan \[MoES\], 2016a](#)), IELTS preparation courses are extremely popular among university students studying in EMI or multilingual programmes. Writing instruction in most of such courses tends to be focused on teaching formal aspects of genres, as the IELTS writing tasks are quite specific in their requirements ([IELTS.org, 2022](#)) and preparing for them usually involves building up a general academic vocabulary and grammar, learning to use cohesive devices, and adhering to a standard three-part structure and paragraph development conventions. Such courses have been shown to be effective in developing students' genre-specific knowledge elsewhere (e.g., [Amirian, Pourfarhad, &](#)

Nafchi, 2016). However, other researchers state strategies developed through IELTS preparation are not sufficient for successful learning in EMI tertiary programmes (Coffin & Hewings, 2005), and although students learn how to write argumentative essays with evidence for IELTS, there is a great gap between what students learn in IELTS and the university-level demands towards English academic genre knowledge (Bond, 2020). This may be an issue because the IELTS tasks involved in developing genre knowledge focus specifically on Formal knowledge. Whether IELTS preparation is sufficient for academic skills development in Kazakhstani universities, or additional learning measures are indicated, is another key empirical issue the present study seeks to address. In the next section, we describe our research approach to addressing these issues.

4. Methods

The study employed an embedded correlational mixed-method design (Creswell, 2014) in order to measure students' levels of genre-specific knowledge through quantitative data, and contextualize the quantitative findings through qualitative data collection. The data for the study were collected from six universities across Kazakhstan; the participants included graduate students studying in EMI and multilingual programmes, faculty teaching in such programmes, and administrators involved in managing these programmes. Table 1 shows basic information about the sites and the data collected there. The choice of these sites was based on their inclusion in the list of universities identified by the State Programme for Industrial and Innovative Development of Kazakhstan 2015–2019 (Ministry of Investments & Development of the Republic of Kazakhstan [MID], 2014) as institutions that must introduce partial or full English-medium instruction in certain strategically important programmes. A preliminary survey of 11 listed universities revealed that only these 6 indeed offered some instruction in English. The study focused on masters' and PhD students rather than on undergraduates as at this higher level they are more likely to engage in production of knowledge, that is, write extensive and original assignments, publish articles, and present at conferences, thus having a better awareness of the academic genres.

4.1. Instrument design

For the quantitative data collection, the research team drafted an initial list of can do statements (ALTE [Association of Language Testers in Europe], 2002; Ashton, 2014; Denies & Janssen, 2016; Moeller & Yu, 2015), a form of language learner self-assessment in which respondents rate their ability to perform particular skills or tasks in the target language. The items in the initial list in English were designed to reflect various skills constituting the four dimensions of genre-specific knowledge based on the team's own experience and their description in literature (e.g., Dreyfus, Humphrey, Mahboob, & Martin, 2016; Montgomery et al., 2019; Tardy, 2009). The list did not focus on a specific academic genre so as to account for the variability of features across languages (as these may differ in the three target linguistic contexts) as well as of the students' experiences with academic genres. To ensure construct validity of the questionnaire, the survey was then subjected to expert content validation (Marsden & Wright, 2010), in which experts in academic genre knowledge theory were asked to rate the correspondence of the initial items with the four components of the framework, and based on their feedback the team selected the best items for a survey that could be completed by students within a reasonably short time. The questions were then translated into Kazakh and Russian, and the resulting multilingual questionnaire was piloted among graduate students of the researchers' university, an EMI institution in Kazakhstan, to test the accessibility of the statements to the non-specialist student. The final version of the questionnaire included 25 seven-point Likert-scale questions repeated for each of the three languages, with 7 items on Formal, Process, and Rhetorical knowledge each, and 4 items on Subject matter knowledge (see Appendix 1 for full list). The questionnaire also contained profile questions, such as age, course of study, language of instruction, and academic achievement. Students self-reported proficiency in the three languages based on Common European Framework Reference (CEFR) levels, and, for English, overall scores on IELTS.

For qualitative data collection, the protocols for focus-group discussions with the students and interviews with teachers and administrators were designed to elicit the students' experiences of acquiring academic genre-specific knowledge, the supports and challenges that exist in their educational institutions and the educational system as a whole, as well as the strategies that all of the stakeholders employ for developing students' genre-specific knowledge. The protocols were not piloted prior to data collection, but were revised after the first site visit and again prior to each site visit based on research team reflection of the need for additions, revisions to language, or removal of questions.

Table 1
Information about data collection sites.

Site code	Location	Status	Type	Student surveys	Student interviews	Faculty interviews	Administrator interviews
C1	Centre	National	Comprehensive	60	2	6	4
C2	Centre	Regional	Specialized	48	8	4	2
S1	South	National	Specialized	41	0	5	3
S2	South	National	Comprehensive	28	10	6	5
E1	East	Regional	Specialized	50	17	5	8
N1	North	Regional	Comprehensive	56	6	8	8

4.2. Data collection procedures

The data were collected during site visits that took place between November 2018 and March 2019. The participants for surveys and interviews were recruited through advertising assisted by university administrators, as well as through informal connections and snowball sampling. The questionnaires were administered to the students in paper format, during which they were also invited to volunteer to take part in the focus-group discussions. Questionnaires were offered in all the three languages, but the participants opted for either Russian or Kazakh versions. Focus groups and interviews were conducted in the languages of choice of the participants. While some administrator interviews were conducted entirely in English, or with translation from English to Russian or Kazakh, in focus groups participants sometimes moved among the three languages. To help ensure trustworthiness of the data, participants were reminded that survey data would be anonymous, and that neither interviewees nor their institutions would be identified in presentations, publications, or other reports to the institutional administration. As an additional safeguard, gatekeepers or supervisors of survey and interview participants were asked by research team members not to be present during questionnaire completion, focus-group discussions, or interviews.

Because of convenience sampling, there was an unequal distribution of survey participants by gender, field of study, and languages of instruction. Out of 283 survey participants, 57 % were male and 43 % female. Most (79 %) were masters' students, while 21 % were pursuing a PhD. Participants were studying predominantly science and technology (75 %), with only 25 % studying humanities, social sciences, or arts. A vast majority of survey participants (62 %) were being instructed in all three languages, 28 % in Russian and English, 6% only in English, and 4% in Kazakh and English. A similar breakdown of gender and fields of study was found in focus group participants; however, most participants were Master's students in trilingual programmes.

4.3. Data analysis procedures

The quantitative data were processed and analysed using SPSS. Aggregated scales were constructed by summing up item values and calculating averages for each language for each type of genre-specific knowledge, resulting in 12 new aggregated variables (e.g., Formal_EN is the average of Formal_EN_1, Formal_EN_2, ... Formal_EN_7, and so on). This aggregation was possible due to high internal consistency of the data. We then conducted comparisons of these aggregated scales in order to evaluate reported genre-specific knowledge of the participants in the three languages.

The raw scales (Formal_EN_1, Formal_EN_2, ... Formal_EN_7 and so on) were further analysed using a factor analysis method, namely, maximum likelihood factor analysis (MLFA) (Tabachnick & Fidell, 2013) in order to test the validity of the instrument and to gain a deeper understanding of the participants' genre-specific knowledge. Generally, factor analysis is a statistical technique used to analyse large numbers of variables and discover groups of items that form coherent and independent subsets, which represent certain constructs of dimensions in a framework or model. In this study, it was expected that items would group into subsets related to different components of genre-specific knowledge as well as into subsets based on language (English, Russian, and Kazakh).

First, a MLFA with Oblimin rotation was performed to preliminarily explore the internal structure of the 12 aggregate scales. The Kaiser-Meter-Olkin (KMO) value was 0.753, which is higher than the minimum recommended values of 0.6; and the Bartlett's test of sphericity showed statistical significance ($\chi^2 = 3367.39$; $df = 66$; $p < .001$), suggesting that the data was appropriate for MLFA. The analysis using both Kaiser's criteria and parallel analysis (Horn, 1965) yielded 3 components, which accounted for 85 % of the total variance; in other words, these 3 components can be characterized as significant and discrete factors of genre-specific knowledge. With high loading coefficients (from 0.68 to 1), the MFLA showed a clear grouping of the variables around language, that is 3 factors were extracted: one consisting of aggregate scales for English, and two more for Russian and Kazakh correspondingly.

For the focus group and interview data, the first author conducted open coding (Creswell, 2014) in NVivo of responses that indicated accounts of genre-specific knowledge development; these codes were later grouped into themes, including pedagogies, strategies, institutional supports, and challenges. After identifying the main results of the quantitative analyses, the themes and codes of the quantitative data were reviewed to identify comments that could augment interpretation of the quantitative results. In the following section, the results of the statistical analyses are presented first, and then the findings of the qualitative analyses are discussed to support the quantitative analysis.

5. Results

5.1. Comparing genre-specific knowledge within and between languages

To answer research question 1, we first offer descriptive, reliability, and inferential statistics of survey data. These data indicate few differences in components of genre-specific knowledge within languages. However, significant differences emerged in knowledge between languages. High internal consistency coefficient values suggested that the items could be collapsed into 12 aggregate scales by language and type of genre knowledge (See Table 2 for descriptive statistics and Cronbach's α values).

A one-way analysis of variance (ANOVA) within each language showed no significant differences between types of genre-specific knowledge within each language. However, the same test revealed significant differences in genre-specific knowledge variables across the three languages, at the $p < .001$ level, $F(2, 768) = 72.688$ for Formal knowledge, $F(2, 794) = 61.21$ for Process, $F(2, 795) = 66.682$ for Rhetorical, and $F(2, 800) = 60.1$ for Subject. In other words, Formal knowledge values are significantly different in English, Russian, and Kazakh, and the same holds true for Process, Rhetorical, and Subject knowledge values. The post hoc comparisons using the Tukey HSD test indicated that all the scores were significantly different in each pair of languages, with genre-specific knowledge in

Table 2
Descriptive statistics for aggregate genre-specific knowledge variables.

	N	Min	Max	M	SD	No of original items	α
Formal_RU	257	1	7	6.13	0.99	7	0.93
Process_RU	268	3	7	6.11	0.97	7	0.92
Rhetorical_RU	269	3	7	6.06	0.92	7	0.92
Subject_RU	270	2	7	5.94	0.93	4	0.82
Formal_KZ	252	1	7	5.47	1.58	7	0.97
Rhetorical_KZ	262	1	7	5.43	1.53	7	0.97
Process_KZ	261	1	7	5.41	1.58	7	0.97
Subject_KZ	265	1	7	5.28	1.53	4	0.93
Process_EN	268	1	7	4.86	1.32	7	0.95
Rhetorical_EN	267	1	7	4.80	1.26	7	0.94
Formal_EN	262	1	7	4.75	1.29	7	0.94
Subject_EN	268	1	7	4.72	1.35	4	0.91

Russian being the highest and English the lowest in all the four categories (see Table 2 for corresponding means and standard deviations). To answer research question 2, this strong effect of general language knowledge on genre-specific knowledge was further explored through a Spearman's rank-order correlation between the four types of genre-specific knowledge in each of the three languages and self-reported proficiency levels in the respective languages. This test revealed significant correlations at $p < .001$ level in all the cases with the stronger correlations between overall proficiency and genre-specific knowledge in Kazakh ($\rho = .61$ to $\rho = .7$) and English ($\rho = .56$ to $\rho = .69$), and significantly weaker one in Russian ($\rho = .28$ to $\rho = .39$). This finding likely reflects the fact that Russian, due to historical reasons, remains an academic lingua franca in Kazakhstan and is nearly a prerequisite for access to higher education in most regions of the country, which makes higher Russian proficiency an unmarked characteristic and thus less likely to impact genre-specific knowledge.

5.2. Item grouping within genre-specific knowledge sub-categories

To answer research questions 3 and 4, we performed MFLA on the subsets of original (non-aggregated) items grouped first by type of genre-specific knowledge (e.g., we ran factor analysis on a set comprising Formal knowledge items for English, Russian and Kazakh and then 3 similar sets consisting of items for Process, Rhetoric, and Subject knowledge). When grouped by type of genre-specific knowledge, all four subsets of data satisfy the criteria for MFLA: KMO values were 0.889, 0.863, .861, and 0.742 for Formal, Process, Rhetorical, and Subject knowledge respectively. Bartlett tests of sphericity were significant at the $p < .001$ level in all cases, with the corresponding values of $\chi^2 = 6348.68$, $df = 210$; $\chi^2 = 7030.68$, $df = 210$; $\chi^2 = 6825.43$, $df = 210$; $\chi^2 = 2848.57$, $df = 66$.

Applying MFLA to the Formal knowledge data using Kaiser's criteria yielded four components (instead of the expected three, grouped by language), accounting for 77.7 % of the total variance—a high percentage which indicates that these four groups and the items within constitute significant and discrete factors. However, one component that did not fit the language pattern is comprised of items Formal_1_EN, Formal_1_KZ, and Formal_1_RU (See Appendix 1 for the full description of the items), which is in fact a variable group with individual items formulated for three different languages. When they were removed from the dataset, the analysis yielded a three-component solution accounting for 72.2 % of the variance, with clear-cut division by language and loading coefficients between 0.62 and 0.96. As stated above, language appears key in the structure of genre-specific knowledge and not fitting the language grouping pattern for certain items may be taken as a sign of irregularity in the data, instrument, or the model itself. Given that these irregularities are limited to just a few and their removal makes MLFA results consistent with the expected pattern, this result may be interpreted as a validation of the original model, and, in addition, may provide valuable insights about the structure of genre-specific knowledge of the participants.

A similar procedure applied to the data on the other genre-specific knowledge categories led to identifying 3 more irregular items: Process_1_(EN/RU/KZ), Process_2_(EN/RU/KZ), and Rhetorical_1_(EN/RU/KZ). Subject knowledge items grouped into the three language groups and no irregularities were found in this regard. Once the irregular items had been removed, the resulting three-component solutions accounted for 79.9 % of the total variance in the data for Process knowledge, 78.2 % for Rhetorical, and 76.7 % for Subject. The statements corresponding to the irregular items are shown in Table 3.

It is unlikely that these irregularities were due to the design of the instrument as the statements appear to clearly correspond to the

Table 3
Items that did not group by language in MLFA within corresponding genre-specific knowledge categories.

Variable group	Corresponding can do statement
Formal_1	I can cite sources in the texts I write according to the style requirements (e.g., APA, Vestnik)
Process_1	I can plan an oral academic presentation
Process_2	I can identify the procedures involved in applying for an academic conference
Rhetorical_1	I can change my writing for different audiences

Note. Each of the above variable groups represent three individual items for one of the three languages: English, Russian, and Kazakh.

concepts of the underlying model and were rigorously tested through expert validation and piloting. Instead, we suggest that these elements of genre-specific knowledge are absent in participants, or are not part of their internal concept of genre-specific knowledge, as a result of previous education experience. Indeed, the problem of plagiarism was mentioned repeatedly by faculty in different universities and could account for the absence of citation practices in English (APA) or Kazakh and Russian (Vestnik) (Formal_1). Specifically, one teacher talks about students' low competence in referencing sources due to a lack of explicit instruction on the undergraduate level as the main cause of plagiarism: "Bachelor students don't have such a discipline, why should they write an article without plagiarism? Nobody taught them, they didn't receive such competence. [...] Due to Ctrl + C, Ctrl + V, it's hard for students to write their personal essay" (Teacher3, C1). Similarly, the absence of explicit academic writing instruction in the curricula and lack of exposure to oral academic communication may account for a certain confusion in responding to the other items with irregularities and indicate a low level of awareness of Process and Rhetorical knowledge as concrete competences. In general, it appears that students are challenged particularly hard with the development of Process and Rhetorical knowledge, which is evident in this comment: "Besides the four language skills, our students [are struggling] with pragmatic skills, such as searching for relevant information, filtering it, selecting instead of taking everything, ... the ability to persuasively argue a point of view—it's a problem" (Teacher A, N1).

5.3. Item grouping within language sub-categories

To answer research questions 3 and 4, further analysis of the data was performed by slicing it by language first (i.e., creating a set consisting of the Formal, Process, Rhetoric, and Subject knowledge items for English; and then two more sets for Russian and Kazakh). MLFA was then performed within each language group with a four-component solution to see if the factorisation confirms the four-component model of genre-specific knowledge. The items identified as irregular in the previous analysis had been removed at this point (note that MLFA was also run without this adjustment, and the grouping was considerably improved after the removal). The data met the criteria for MLFA, with KMO values of 0.97, 0.95, and 0.96 for English, Russian, and Kazakh respectively; and Bartlett's tests of sphericity yielding significance at the $p < .001$ level in all cases with corresponding values of $\chi^2 = 5285.88$, $df = 210$, $\chi^2 = 4651.27$, $df = 210$, $\chi^2 = 7457.58$, $df = 210$. The resulting pattern matrices are given in Table 4.

The results show that some of the extracted factors are comprised only of the items corresponding to one type of genre-specific knowledge, while others include items from different categories resulting in overlaps that are inconsistent with the model. Notably, the extent to which the data confirms the original model varies substantially across the languages. In the English-language group of variables the grouping into genre-specific knowledge items appears reasonably clear and in line with the model, with some overlap between Subject and Rhetorical knowledge categories. In the Russian-language group such irregular loadings are slightly greater. Grouping in the Kazakh-language group is considerably less consistent with the expected division: Process and Rhetorical appear to group together while Subject and Formal appear to be separate. Following Jwa (2015), these results can be presented in a schematic (see Fig. 1).

Table 4

Pattern matrices for 4-component MLFA solutions in the three variable groups by language.

Genre-specific knowledge variable group	English				Russian				Kazakh			
	Component				Component				Component			
	1	2	3	4	1	2	3	4	1	2	3	4
Formal_2		.723				.688				.779		
Formal_3		.754				.767				.894		
Formal_4		.818				.854				.892		
Formal_5		.977				.889				.848		
Formal_6		.907				.975				.944		
Formal_7		.696				.723				.383	.625	
Process_3		.322	.433			.394	.354			.500	.433	
Process_4			.537				.732			.771		
Process_5			.446				.363	.322		.656		
Process_6			.665				.654			.846		
Process_7		.305	.385				.504			.932		
Rhetorical_2		.420								.833		
Rhetorical_3				.318	.466					.863		
Rhetorical_4				.746				.472		.689		
Rhetorical_5				.828	1.026					.689		
Rhetorical_6		.384		.378	.517			.331	.575			
Rhetorical_7		.630						.699	.496			-.385
Rhetorical_7		.340		.344				.790	.633			
Subject_1		.645						.608				-.699
Subject_2		.558						.540				-.723
Subject_3		.963						.629				-.897
Subject_4		.598						.777				-.697
Eigenvalues	13.64	1.30	0.84	0.66	12.46	2.06	0.94	0.79	16.20	1.07	13.64	1.30
Total variance explained, %	64.93	6.21	4.00	3.15	56.65	9.35	4.26	3.60	77.16	5.10	64.93	1.80

Note. Loading coefficients below 0.3 are not shown. Emphasis indicates loadings onto more than one component or onto a component that is not consistent with the model. Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

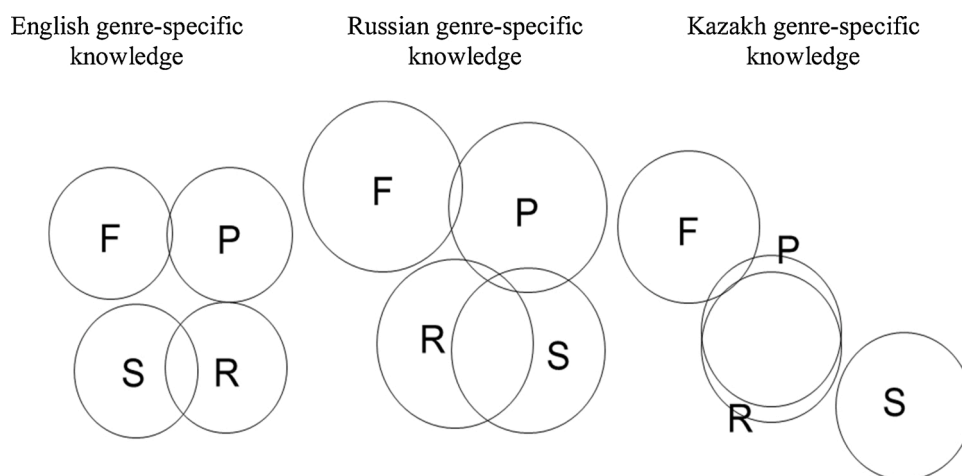


Fig. 1. Schematic diagrams of the genre-specific knowledge components in the three languages.

Note. “F” stands for Formal knowledge, “P” for Process, “R” for Rhetorical, and “S” for Subject. The diameters of the circles are proportional to the mean values of the respective aggregate genre-specific knowledge scales, and the overlaps between the circles are roughly proportional to the overlaps (items loading on more than one factor) in loading coefficients produced by MLFA.

The first thing to be observed from this diagram is that Formal knowledge appears to separate quite distinctly from the other types of genre-specific knowledge across all the three languages. Tardy (2009) notes that greater genre-specific knowledge in a writer is associated with increased integration of the four components as they become this writer’s “second nature” when producing a well-mastered genre. However, as our survey focuses on distinct competencies rather than holistic writing practices, in our analysis the overlap between categories is likely to reflect the respondents’ conceptualisations of different dimensions of genre-specific knowledge and their trajectories in learning academic genres instead of higher expertise. In other words, this finding suggests that this particular category of genre-specific knowledge is developed explicitly and formally, thus being most clearly conceptualised by the students. This may be due to the fact that many students in multilingual programmes have been exposed to English language courses, either general or aimed at preparing them for IELTS or other international tests. As all the other three components of genre-specific knowledge lie outside the scope of the requirements of essay tasks in international tests (and, notably, the referencing part of the Formal knowledge, which caused irregularities in the previous analysis), and explicit instruction seems not to be provided at a sufficient level to students at university, it may account for Formal knowledge being distinct. When asked about specific courses or lessons at university on the subject of academic writing, students tended to answer negatively, one of them, for instance, presenting evidence of only some limited implicit teaching of Formal knowledge:

We didn’t have that. They basically didn’t even try to teach us to do that. We were given guidelines, formatting requirements and a list of topics. If there were errors somewhere, they would correct them, and we revised our works until we didn’t get it all correct. That is, there weren’t any hints or anything. There were simply the instructions on how to do it and we worked according to them (Student 5, N1).

On the contrary, the participants spoke favourably about the influence of IELTS preparation courses on their Formal knowledge, including that in oral genres: as one student noted, “... they [IELTS preparation courses] will teach you during the speaking part how to begin your speech: introduction and so on. It’s become easier to give speeches, to express my opinion ... Somehow, you feel more confident. There’s structure to your speech” (Student 6, N1). Interestingly, this participant does not limit his improved speaking competence to English, thus suggesting that explicit genre teaching approach in this case leads to enhanced formal genre-specific knowledge across languages.

A more striking observation is the difference in the extent of the overlap between the categories of genre-specific knowledge across the languages. While the variables grouped in a pattern that was close to the way it was anticipated for English, and slightly less so for Russian, the grouping of Kazakh-language variables did not follow the model with Process and Rhetorical knowledge virtually merging into one category. There are several explanations for this phenomenon that emerged from the qualitative data.

One is that the ways genres are taught (or not taught) in different languages, with English language teaching focused on teaching the text structure of different academic writing genres. For example, one participant studying to be an English teacher compared her writing practices that she had acquired in her first language to the writing she was doing as a postgraduate student in a multilingual programme:

Before enrolment, I had more creative writing skills. We had a completely different essay format ... But now it is more scientific, there is a different format, a different direction. Every week we write different essays on all subjects, for example, extended essay, various theoretical works. Here we write more (Student 1, S2).

Notably, no academic language instruction in Russian or Kazakh were mentioned by the participants during the interviews, despite the fact that the state standard for higher education includes a compulsory 10-credit Russian (for Kazakh speakers) or Kazakh (for

Russian speakers) course (Ministry of Education & Science of the Republic of Kazakhstan [MoES], 2018). It is likely that these courses were not focused on academic discourse, or they were not effective in developing academic genre-specific knowledge in students.

Also, there appears to be a shortage of academic resources in the Kazakh language that could serve as models of academic genre, which limits the students' opportunities to learn genres in Kazakh and even discourages them to practice academic writing in Kazakh: "When writing any article in Kazakh, there's very little information, so people have to write in Russian or English" (Student 5, N1). Furthermore, some Kazakh-medium teachers themselves appeared to have a shortage in genre-specific knowledge in Kazakh, or even academic experience in Kazakh:

When I started to work, I taught only in Russian. But then, more Kazakh students began to enter university, who wanted to study in Kazakh. Before that, in Kazakh-medium groups courses had been mainly conducted in Russian. We *had* to teach, translate all this into Kazakh. (Teacher 2, E1)

As a result, some students in Kazakh-medium courses seem to gain little or no experience of engaging with Kazakh language academically: "I studied in Russian, but the other group, who studied in Kazakh, they also studied in Russian. Their subjects were officially supposed to be in Kazakh, but we did everything together" (Student 4, N1).

6. Discussion

Having presented the quantitative and qualitative findings on genre knowledge development in three languages, we now consider the contribution of these data to three concerns identified in previous literature: 1) measuring genre knowledge, 2) identifying components of genre knowledge, and 3) understanding influences on genre knowledge, namely culture, pedagogy, and language itself. With regard to measuring genre knowledge, the questionnaire developed in the course of this study has demonstrated that Tardy's four-component model of genre-specific knowledge (Tardy, 2009; Tardy et al., 2020) could be successfully used to evaluate academic genre-specific knowledge in multiple languages through a series of Likert-scale can do statements. The data obtained using this questionnaire from 283 postgraduate students in multilingual and EMI programmes in 6 universities in Kazakhstan was internally consistent and showed statistically significant differences in the participants' genre-specific knowledge in the three languages, with Russian being the highest, Kazakh in the middle, and English the lowest. Principal Component Analysis of aggregate genre-specific knowledge scales resulted in a clear-cut grouping of items into three language groups, while Spearman's rank-order test revealed a significant correlation between genre-specific knowledge and level of proficiency in the respective language for all the aggregate scales. This appears to confirm that although genre exists as a contextual stratum above the linguistic strata (Martin & Rose, 2008), and in some generalised form can exist in and travel across multiple languages, genre-specific knowledge (or expertise) strongly depends on the knowledge of the language (Gentil, 2011).

A further exploration of the data through MLFA led to the identification of items that did not clearly group into one of the four components of genre-specific knowledge: one item related to referencing, two Process knowledge items about preparing oral presentations, and one Rhetorical knowledge item about addressing the audience. While this finding may be interpreted as challenging the validity of the instrument or the underlying theoretical model (and, to a certain extent they are), we propose that they are useful indications of the situatedness of genre, and thus genre-specific knowledge. Genres represent not only a type of literacy but also a social practice (e.g., Lillis & Scott, 2015; Street, 2010), in which social practices are understood as "recurrent configurations of meanings...of a given culture" (Martin & Rose, 2008, p. 6). The item on referencing, for example, identified both known international (APA) and local (Vestnik) forms of citation literacy, but if students are not regularly required to write texts for classes with any citations in any language, it is reasonable to expect this item would not fit in their definition of genre-specific knowledge.

Another possible reason for this finding is that, in developing the instrument, we selected the items based on our understanding of academic genres as a practice, which is largely influenced by the literacy practices of Western, or inner-circle (Kachru, 1992) English-language academic discourse communities. It may be argued that finding these irregularities may call into question the possibility of creating a universal tool for evaluating genre-specific knowledge in different contexts, especially operating in multilingual and multicultural settings outside the Inner Circle. In this case, one might suggest building up the lists of items for Formal, Process, Rhetorical, and Subject knowledge based on the cultures and practices of locally situated discourse communities. However, in the current situation of globalisation and Englishisation of the academic discourse, and in places where introduction of EMI at universities promises their students a membership in wider international academic communities (which appears to be the case in Kazakhstan), an instrument based on Western conceptions of academic genres may be highly beneficial. On the one hand, an item-by-item analysis of the data might reveal important issues related to genre pedagogies, and the culture of research and education in general. On the other hand, variations in genre-specific knowledge across languages used by the participants, if such exist, may point to interesting phenomena in multilingual academic discourse communities with equally important implications for education and research.

The qualitative data on components of genre-specific knowledge seem to suggest that preparing for IELTS has a positive effect on the development of Formal knowledge and some implicit instruction on this component at university, while the other components are not targeted. It also suggests that through instruction in a component of genre-specific knowledge in one language, it is possible to improve genre-specific knowledge in that component for other languages as well. Though severely limited in its generic variety (e.g., a handful of short essay types, a 2-minute response to a question, a short popular science text, an extract from a lecture), IELTS tasks are normally practiced through analysing textual patterns and contextual placement of these genres, a kind of genre analysis (Cheng, 2018). Such activities are potentially conducive to developing genre awareness (Devitt, 2015) and metacognition (Gentil, 2011; Tardy et al., 2020) that are key to reuse their existing genre-specific knowledge in new contexts, or recontextualise it (Cheng, 2018; Tardy

et al., 2020), in our case, in a different language. However, the primacy of Formal knowledge in the findings suggests this potential has not been fully realized among this population of students. Another striking point was the differences in the grouping patterns of the genre-specific knowledge items by language: the items grouped into 4 components reasonably well for English and, though slightly less clearly, for Russian, but in the Kazakh-language group of variables the separation did not happen as designed, with Process and the Rhetorical items nearly merging into one component and the Subject ones overlapping considerably with them. On the one hand, this finding may be attributed to distinctly identifiable generic characteristics in different languages as proposed by research contrastive rhetoric (e.g., Moreno, 2008) and intercultural rhetoric (e.g., Connor et al., 2008). It could also be attributed to the effects of language ideology (Street, 1984; Woolard & Schieffelin, 1994). That is, if stakeholders in the present study see English as the language of science, Russian as a language of business and communication, and Kazakh as a language to build an ethnic identity (Kambatyrova, 2020), they may be more prone to conceptualize English through the lens of components of academic genre-specific knowledge than Kazakh or Russian.

On the other hand, as with the grouping of items by genre-specific knowledge component, the patterns of grouping of components by language may further illustrate the conception of genre as a social practice. Considering Gentil's (2011) observation of genre-specific knowledge as declarative or procedural, perhaps the fact that Process and Rhetorical items did not separate in MLFA is an indication that these performative practices of genre in Kazakh academic discourse are closely intertwined in constituting procedural knowledge. Whether this is the case can be established through further studies of literacy practices and genres in academic Kazakh and possibly Russian. Our qualitative data, however, suggest that the differences in the structure of data for Kazakh may be due to the issues of education, such as the type and quality of instruction in academic Kazakh and the availability of texts written in Kazakh.

7. Conclusion and implications

The purpose of this article was to use the data obtained through a newly-designed questionnaire, interviews, and focus group discussions, in order to evaluate the extent to which postgraduate students in multilingual and EMI programmes in Kazakhstani universities develop academic genre-specific knowledge in three languages. It also aimed to use statistical methods to evaluate the validity of the questionnaire itself and the applicability of the theoretical model on which it is based.

With regards to the extent of development of genre knowledge in three languages, we found that the participants' proficiency in English was significantly lower than that in Kazakh or Russian. However, the participants experience a shortage of academic resources in the Kazakh language, and of formal and explicit instruction in academic genres for Kazakh (and for Russian, too). These genres and explicit instruction in their structure and production are relatively more available to the students in English outside the university in IELTS preparation courses but only appear to support Formal knowledge. In addition, three important areas of improvement across all three languages became evident at the initial stages of factor analysis as the corresponding items did not fit the model grouping pattern, namely referencing and plagiarism; oral presentations at conferences; and audience awareness in academic writing. Moreover, except for Formal knowledge, the components appear to be conceptualised considerably poorly across languages.

The implications of these findings for genre-specific knowledge theory and practice in multilingual settings are twofold. To begin with, language proficiency appears to be key to genre-specific knowledge, which means that genre-specific knowledge is not a purely metacognitive competence and its development is dependent on the knowledge of the linguistic system. However, proficiency alone does not guarantee genre-specific knowledge. Therefore, explicit genre instruction is recommended to be introduced in the curricula for two or more languages, as it appears to develop students' genre awareness and metacognitive competences, which would allow them to recontextualise genre-specific knowledge across languages and other contexts. Collaboration among instructors of and in different languages may be useful for identifying genre features common and distinct across languages, though additional research would be needed to attest this.

Second, the mismatch of the genre-specific knowledge items and the theoretical model in one language compared to another suggests that genre-specific knowledge consists of socially and culturally situated literacies that do not transfer across contexts. On the one hand, this suggests future instruments for evaluating genre-specific knowledge need to be based on, and developed by additional linguistic experts on, these local literacy practices rather than universal lists of items developed for the English-language academic discourse environment. On the other hand, a common instrument could be the basis for identifying elements of genre-specific knowledge of specific languages in a specific context that do and not fit the model, and become the basis of a conversation among multilingual university faculty about whether to raise awareness of differences among languages and/or to innovate or transform communication across genres and languages. Future research on the development of not only genre-specific knowledge but also genre awareness among three languages, and the approach and effect of IELTS or other forms of instruction on development of genre-specific knowledge and genre awareness among three languages, is still indicated.

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Appendix 1 List of genre-specific knowledge items in the questionnaire

Variable	Corresponding can-do statement
Formal_1	I can cite sources in the texts I write according to the style requirements (e.g., APA, Vestnik)
Formal_2	I can use conjunctions/connecting words or sentences appropriately to organize my writing
Formal_3	I can effectively use vocabulary characteristic to academic writing and speech
Formal_4	I can effectively use the grammar features characteristic to academic writing and speech
Formal_5	I can compare and contrast in writing
Formal_6	I can write a conclusion that summarises information at the end of a text
Formal_7	I can explain tables and figures in texts
Process_1	I can plan an oral academic presentation
Process_2	I can identify the procedures involved in applying for an academic conference
Process_3	I can identify procedures involved in presenting at an academic conference
Process_4	I can plan (outline) academic text before I start writing
Process_5	I can search for information resources necessary to produce an academic text
Process_6	I can identify the procedures involved in publishing an academic article
Process_7	I understand how my text may be used to produce other academic texts
Rhetorical_1	I can change my writing for different audiences
Rhetorical_2	I can express my own values and beliefs in academic writing
Rhetorical_3	I understand how my text will be assessed/evaluated
Rhetorical_4	I can evaluate the significance of my own writing in my field
Rhetorical_5	I can support points with authoritative evidence
Rhetorical_6	I can write a text that persuades the reader in the point I am making
Rhetorical_7	I can identify the aim of the text
Subject_1	I can write a text that shows my expertise for my field
Subject_2	I can effectively use words and phrases specific to the subject that I write about
Subject_3	I can write a text that adds a new idea to my field
Subject_4	I can identify key scholars in my field who write in the following languages:

Note. Each variable group represents three actual items for one of the three languages: English, Kazakh, and Russian.

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