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MOBILE APPS FOR RUSSIAN LANGUAGE LEARNING

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Abstract

This paper presents a first review of the main existing apps for the teaching of Russian as a Foreign Language (RFL). The research employs a qualitative-descriptive approach. Firstly, 20 RFL commercial apps for Apple iOS and Google Android mobile phones were selected through the app analytics engine App Annie. Secondly, apps were analyzed to collect qualitative data through a specially designed analysis grid with selected-response checkboxes. The aim was to investigate differences and similarities between RFL apps and to test their effectiveness within the framework of a holistic approach to language learning. The specific research questions were: 1) which are the implicit/explicit pedagogical theories RFL apps are based on? And 2) how these implicit/explicit pedagogical theories impact the different ways and degrees of enhancement of language skills? In summary, this paper gives a precise overview of the pedagogical theories that underpin RFL apps, opening new avenues of investigation for RFL.

Keywords: Russian as a Foreign Language; Foreign Language Acquisition; Mobile assisted language learning; Mobile apps; Language skill.

1 INTRODUCTION

As many recent studies show, Mobile Assisted Language Learning (MALL) considerably fosters Russian as a Foreign Language (RFL), and, more in general, any Foreign Language Acquisition (FLA). The rapid increase in adoption of devices like smartphones, iPod, tablet, laptop, iPad for language teaching and learning is due to the fact that mobile technology provides access to FLA anytime and anywhere (UNESCO, 2013, p. 14).

MALL can be defined as “the use of smartphones and other mobile technologies in language learning, especially in situations where portability and situated learning offer specific advantages” (Kukulka-Hulme, 2018, p. 1149).

Among MALL devices, apps are particularly useful to scaffold FLA. However, as concerns RFL, despite the attention paid by RFL scholars to Information and Communications Technologies, or ICT (e.g., Azimov, 2012; Titova & Avramenko, 2014; Lyovina, 2016; Titova, 2017), the role of apps has generally been understudied.

The general aim of this paper is to investigate differences and similarities between RFL apps and to test their effectiveness in relation to the teaching-learning processes endorsed by them and supported by their implicit or explicit pedagogical theories.

The main pedagogical theories considered for this research were behaviorism, cognitivism and constructivism.

“Behaviorism” dates back to the early 1900s and deals with theories of learning focused on conditioning, which “explain learning in terms of environmental events” (Schunk, 2012, p. 72) and as the result of stimulus-response. In behaviorism learning “is defined simply as the acquisition of new behaviour” (Pritchard, 2009, p. 6): it occurs through memorization, repetition and drilling practice.

In contrast to behaviorism, “cognitivism” (which replaced behaviorism in 1960s as the dominant paradigm) stresses “a conscious awareness of rules and their applications to second language learning” (Brown, 2001, p. 24). This theory focuses on mental processes and thinking activities by which learners take in, interpret, store and retrieve information according to existing schema and previous experiences. Lastly, “constructivism” traces its roots back to the works of Piaget, Bruner and Goodman. As for cognitivists, also for constructivists learning is “the result of mental construction” (Pritchard, 2009, p. 17); however, in constructivist model, “individuals form or construct much of what they learn and understand” (Schunk, 2012, p. 229) within a social context, through collaborative communicative tasks.

The specific research problems addressed here are the following: 1) which are the implicit/explicit pedagogical theories (behaviorism/cognitivism/constructivism) RFL apps are based on? And 2) how these implicit/explicit pedagogical theories impact the different ways and degrees of enhancement of language skills (reading, listening, writing, speaking)?

Based on these research questions, the objective of this paper is to provide an overview of RFL apps and to evaluate their effectiveness from the perspective of a holistic approach to language learning (Penman, 2005).

According to scholars, “evaluation of mobile learning poses particular challenges not only because it introduces novel technologies and modes of learning, but also because it can spread across many contexts and over long periods of time” (Sharples, 2009, p. 34).

In MALL literature the issue of quality evaluation has widely been discussed (e.g., Traxler & Kukulska-Hulme, 2005; Motiwalla, 2007; Vavoula & Sharples, 2008; Sharples, 2009; Levene & Seabury, 2015; Soad, Duarte Filho & Barbosa, 2016). As writes Sharples (2009, p. 23), “the effectiveness of mobile learning depends on the educational aims and context”. This research addresses the evaluation of ‘effectiveness’ of RFL apps exclusively within the framework of a holistic approach.

A “holistic approach” to language learning sees language as a whole and emphasizes the integration of language skills (reading, listening, writing, speaking) in a FL classroom. Such “integrated-skills approach” is based on the assumption that learners “learn holistically, not by isolated skills” (Shuy, 1981, p. 106), thus contrasting with the “segregated-skills approach” (Oxford, 2001). In MALL, the integration of language skills plays a central role; in fact, “holism” has been mentioned by González-Lloret & Ortega (2014) as one of the key features of a technology-assisted language-learning task.

This paper argues that in RFL apps all skills should be integrated. Hence it follows that apps fostering just some skills because of their (explicit or implicit) pedagogical theories may not allow learners to fully develop their language competence. Moreover, these same pedagogical theories may impact the different ways and degrees of enhancement of language skills.

2 METHODOLOGY

2.1 Research design and selection of apps

This research employed a qualitative-descriptive approach to analyze 20 RFL commercial apps. According to this approach, apps were selected through the app analytics engine App Annie (2021) on the basis of their rankings, by searching for the key phrase “Russian language”. The preference was given to apps for both Apple iOS and Google Android mobile phones, along with Android-exclusive apps. Only the apps falling into the category of “language learning apps” (Son, 2016, p. 166), i.e. apps specifically dedicated to RFL learning, were included. In my choice, I tried to observe the guiding principle of the variety of teaching approaches, learning designs and features of the apps to be analyzed. To provide a broader characterization of RFL learning through apps and therefore gather what Creswell (1998) calls a “purposeful sampling”, both general FLA apps (also covering RFL) and RFL-specific apps were involved. Apps declaredly focused on specific skills or abilities (e.g., translation, speaking, etc.) or levels (e.g., Russian for beginners), as well apps not offering a complete Russian language course (e.g., phrasebooks, dictionaries, games, etc.) were excluded because not relevant for the research questions. Also specific apps for children, given the peculiarities of child learning compared to adult learning (see Brown, 2001, pp. 87-91; Knowles, Holton & Swanson, 2005), were not examined. A full list of apps included in this study may be found in **Table 1**.

Table 1. List of apps selected (in alphabetical order).

GENERAL FLA APPS SELECTED	RFL-SPECIFIC APPS SELECTED
1. Babbel	11. Easy Russian Language Learning
2. Busuu	12. Kalinka – Russian Fast & Easy
3. Clozemaster	13. Learn Russian
4. Drops	14. Learn Russian Free
5. Duolingo	15. Learn Russian Language– Light
6. Fluentu	16. Russian by Nemo
7. HelloTalk	17. Russian Language Trainer
8. Memrise	18. Russian Learns You
9. Mondly	19. Russian Made Easy
10. 50Languages	20. Russian 101 Audio Course

2.2 Instrument design and coding, data collection

Apps were analyzed through a specially designed analysis grid with selected-response checkboxes, according to a grounded set of subcriteria developed from the models and suggestions of literature on MALL and app evaluation (e.g., Walker, 2011; Schrock, 2011; Vincent, 2012; Son, 2016; Stockwell, 2016). The instrument was designed and tested to answer the research questions and consisted of 6 questions covering 21 subcriteria using selected-response checkboxes. Topics addressed included: platforms, monetization, modes of grammar instruction, types of activities, language skills, corrective feedback. The analysis grid is presented in the **Appendix**.

In a second phase, through some guiding questions, also the implicit/explicit pedagogical theory/ies (see §1) endorsed by RFL apps were identified. Were classified as “behaviorist” all those apps based on the behaviorist paradigm, i.e. conceiving learning as “the reinforcement of an association between a particular stimulus and a response” (Naismith et al., 2004, p. 2). For apps making students “cognitively engage with the material through higher order thinking activities” (Yates, 2016, p. 187), the definition of “cognitivist” was used. The apps providing “activities in which learners actively construct new ideas or concepts based on both their previous and current knowledge” (Naismith et al., 2004, p. 2) were instead labeled as “constructivist”.

In order to meet the research objective, qualitative data were collected, analyzed and triangulated to discover underlying patterns and trends.

3 RESULTS

The main results from the study are presented below, with focus on (explicit/implicit) pedagogical theories that underpin RFL apps and enhancement of language skills.

3.1 Data analysis

3.1.1 Platforms supported

The majority of apps were compatible with both iOS and Android. The only exceptions were 7 RFL-specific apps (7 of 10 apps, 70%; 35% of apps' total number), which required Android system.

3.1.2 Monetization

Many apps contained a “pay to unlock” feature (8 of 20 apps, 40%). Other forms of monetization included a subscription to access content (4 of 20 apps, 20%) or in-app advertisements (3 of 20 apps, 15%). Only a few apps (5 of 20 apps, 25%) did not present a monetization scheme.

3.1.3 Modes of grammar instruction

Half of general FLA apps (5 of 10 apps, 50%) and of RFL-specific apps (5 of 10 apps, 50%) provided an explicit grammar instruction consisting in grammar explanations and/or grammar feedback (see **Figure 1B**). In total, as shown by **Figure 1A**, half of the examined apps required users to discover grammar by themselves (10 of 20 apps, 50%).

Figure 1A. Modes of grammar instruction (overall data).

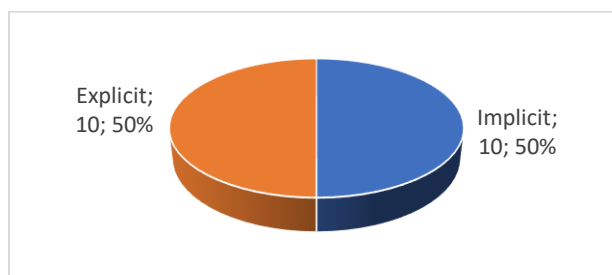


Figure 1B. Modes of grammar instruction (general FLA apps compared to RFL-specific apps).



3.1.4 Types of activities

The overall data regarding the types of activities offered by RFL apps are presented in **Figure 2A**.

The activities included in nearly all general FLA apps concerned vocabulary, grammar, pragmatics and pronunciation (see **Figure 2B**). The only exception was *Drops*, which provided just vocabulary and pronunciation tasks.

As concerns RFL-specific apps (see **Figure 2B**), what emerged was a greater scarcity and homogeneity of activities offered, which covered pronunciation and two more partial areas of language practice: vocabulary (7 of 10 apps, 70%) and pragmatics (4 of 10 apps, 40%). Except for *Kalinka – Russian Fast & Easy*, the apps did not provide specifically grammar activities. *Learn Russian* was the only app to offer some cultural activities.

Figure 2A. Types of activities (overall data).

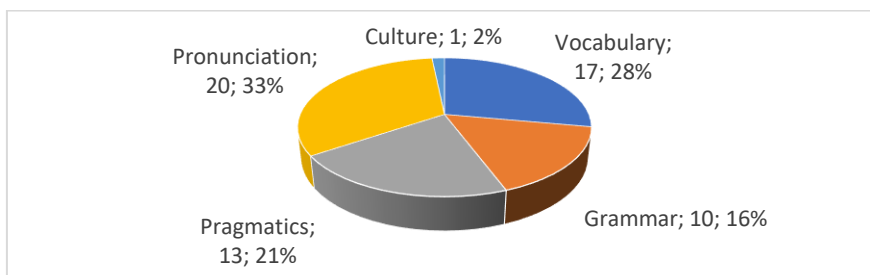
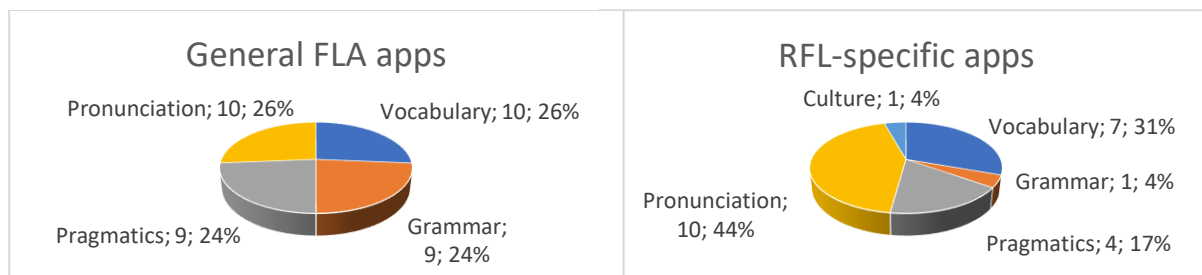


Figure 2B. Types of activities (general FLA apps compared to RFL-specific apps).



3.1.5 Language skills

Only 8 of 20 apps (see **Figure 3A**) promoted reading, listening, writing and speaking.

In particular, half of general FLA apps (*Babbel*, *Busuu*, *Duolingo*, *HelloTalk*, *Mondly*) fostered all the language skills (5 of 10 apps, 50%), whereas the other half (*Clozemaster*, *Fluentu*, *Memrise*, *50Languages*, *Drops*) did not promote speaking (see **Figure 3B**).

All the RFL-specific apps (see **Figure 3B**) were lacking in the integration of language skills, as for the most part they just focused on receptive skills (listening and reading). For example, 3 apps (30%) did not foster speaking, whereas 2 apps (20%) did not promote writing. *Easy Russian Language Learning* and *Russian Learns You* did not enhance neither speaking nor writing skills.

The only exceptions among RFL-specific apps were *Learn Russian Free*, *Kalinka – Russian Fast & Easy* and *Learn Russian Language– Light* (3 of 10 apps, 30%), which at first glance seemed to promote

all the skills; ultimately, however, even these apps did not encourage a holistic approach to RFL learning, as they gave a stronger emphasis to some skills (*Learn Russian Free* to listening and speaking, whereas *Kalinka – Russian Fast & Easy* to reading and listening) or did not offer a clear language curriculum (*Learn Russian Language– Light*).

Figure 3A. Language skills (overall data).

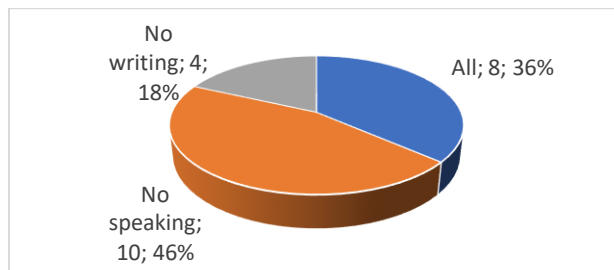


Figure 3B. Language skills (general FLA apps compared to RFL-specific apps).



3.1.6 Corrective feedback

As shown below (see **Figure 4A**), the corrective feedback provided by more than half of the apps was multimodal (i.e. sound, visual and textual) (12 of 20 apps, 60%).

Among general FLA apps (see **Figure 4B**), only *HelloTalk* (10%) did not give a sound feedback, but only visual and textual.

Among RFL-specific apps (see **Figure 4B**), no corrective feedback at all was provided by 3 apps (30%), whereas the other apps (4 of 10 apps, 40%) provided a partial feedback: sound and textual, visual and textual, sound and visual. Only 3 apps (*Russian Language Trainer*, *Learn Russian Free*, *Learn Russian Language– Light*, 30%) provided a completely multimodal feedback.

Figure 4A. Corrective feedback (overall data).

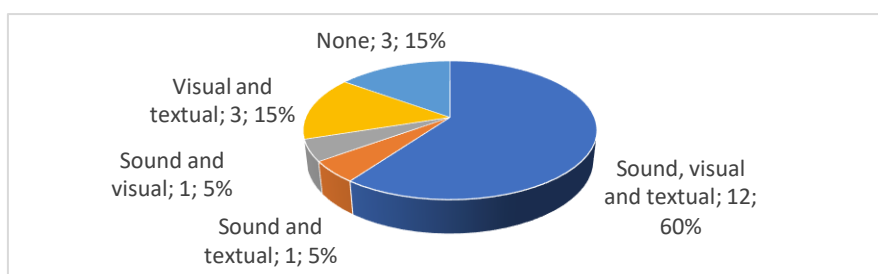
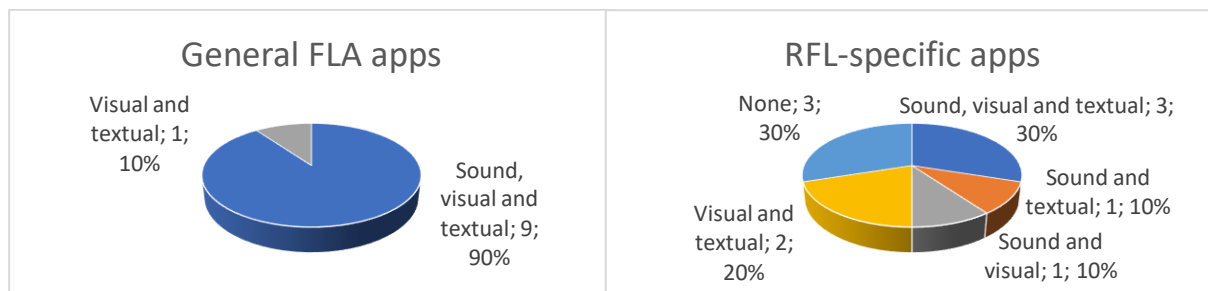


Figure 4B. Corrective feedback (general FLA apps compared to RFL-specific apps).



3.2 Pedagogical theories and enhancement of language skills

Data collected in § 3.1 provided the general context for evaluating RFL apps. The identification of the specific implicit/explicit pedagogical theory/ies (see §1) endorsed by apps was made thanks to the following guiding questions, together with apps' instructional statements (when present):

- Are there any implicit/explicit behaviorist elements (pattern drills such as repetition, replacement and translation exercises, programmed instruction with immediate and direct feedback and positive reinforcement, etc.)?
- Are there any implicit/explicit cognitivist elements (high-level activities such as problem solving and puzzles, mnemonic strategies including visualization, association, etc.)?
- Are there any implicit/explicit constructivist elements (collaborative and cooperative activities, real-life simulations, free choice of learning paths, extra exposure to the target language within a “community of learning”, etc.)?

On the basis of data thus obtained, the study found that the majority of RFL apps were grounded in “eclectic” teaching approaches, combining together various pedagogical theories.

On the one hand, the findings showed that a “behaviorist”, teacher-centered model still prevail in most RFL apps, adopting a “transmission model” where “learning takes place through the transmission of information from the tutor (the computer) to the learner” (Naismith et al., 2004, pp. 10-11), through pattern drills and programmed instruction with rote memorization of vocabulary and immediate reinforcement of correct responses.

On the other, it was the “constructivist”, learner-centered model, where instructors “encourage students to discover principles for themselves” (Naismith et al., 2004, p. 12), which made the difference in ensuring the integration of language skills within a holistic approach to language learning (see the sections highlighted in grey in **Table 2**). The contribution of constructivism was evident in the offer of a wide range of tailored courses and topic-based lessons with specific aims (e.g., practice grammar, build vocabulary, develop conversation skills), which could be chosen by users according to their needs, as well as in collaborative activities and opportunity to interact with other users within a “community of learning” (e.g., in *HelloTalk*, *Busuu*): all this, along with additional practice resources, use of authentic materials and elements of gamification, enabled personalization of learning and training paths. Since constructivism was frequently interlaced with behaviorist and cognitivist elements (information processing, vocabulary and vocabulary chunks, visual tools like flashcards, use of mnemonic strategies and methods like “spaced repetition learning” and “active recall”), we can argue that this very combination of pedagogical theories ultimately brought to skill integration.

To sum up, for what concerns the enhancement of language skills, it should be noted that (as we have already discussed in § 3.1.5 and seen in **Figure 3B**) the effectiveness of general FLA apps proved to be greater than that of RFL-specific apps. The latter in most cases did not foster all language skills but placed more emphasis on receptive skills (even apps apparently enhancing all the skills, like *Kalinka – Russian Fast & Easy* and *Learn Russian Free*, actually focused more on some of them); moreover, they did not offer a whole language course, provided just a partial corrective feedback (see § 3.1.6) and not enough practice. On the other hand, some RFL-specific apps seemed to better meet users' needs of specialized microlanguages for domain-specific interaction (e.g., *Russian Language Trainer*, *Learn Russian Free*) and were quite useful for reviewing or reinforcing vocabulary.

However, if general FLA apps best ensured the integration of skills, even the most effective of them (*Babbel*, *Busuu*, *Duolingo*, *HelloTalk*, *Mondly*) were found to be lacking in some or all the following areas: curricular direction (lack of a structured, linear curriculum; no clear definition of levels and/or lack of some levels, usually intermediate/advanced; no targeting of specific learning contexts, e.g., academic students, typically requiring more explicit grammar explanations), vocabulary teaching (isolated, de-contextualized vocabulary instruction), design of learning activities (too few exercises to develop

language proficiency and/or repetitive and monotonous tasks with a predominance of translation exercises), motivational system (learners were not always encouraged to continue their training). In conclusion, from the point of view of skill integration, it can be claimed that these apps should be preferably used in tandem with other apps (in informal and, when possible, also formal instruction) in order to build a well-structured, coherent and comprehensive language curriculum.

Table 2. RFL apps, pedagogical theories and language skills enhanced (the apps ensuring the integration of skills are highlighted in grey).

		Pedagogical theories	Language skills
GENERAL FLA APPS	Babbel, Busuu, Duolingo, Mondly	Behaviorism, Cognitivism, Constructivism	Reading, Listening, Writing, Speaking
	HelloTalk	Cognitivism, Constructivism	Reading, Listening, Writing, Speaking Major focus on <i>speaking and writing</i>
	Clozemaster, Drops, Fluentu, Memrise	Behaviorism, Cognitivism, Constructivism	Reading, Listening, Writing DROPS: Major focus on <i>listening</i> ; <i>reading</i> and <i>writing</i> just partially developed
	50Languages	Behaviorism, Cognitivism	Reading, Listening, Writing <i>Writing</i> just partially developed
RFL- SPECIFIC APPS	Learn Russian Language–Light	Behaviorism, Cognitivism, Constructivism	Reading, Listening, Writing, Speaking
	Learn Russian Free	Behaviorism, Constructivism	Reading, Listening, Writing, Speaking <i>Reading and writing</i> just partially developed
	Kalinka – Russian Fast & Easy	Behaviorism	Reading, Listening, Writing, Speaking <i>Writing and speaking</i> just partially developed
	Easy Russian Language Learning	Behaviorism, Cognitivism, Constructivism	Reading, Listening <i>Listening</i> just partially developed
	Learn Russian, Russian Language Trainer	Behaviorism, Cognitivism, Constructivism	Reading, Listening, Writing LEARN RUSSIAN: <i>Listening and writing</i> just partially developed
	Russian by Nemo	Behaviorism, Cognitivism, Constructivism	Reading, Listening, Speaking Major focus on <i>speaking and listening</i> ; <i>reading</i> just partially developed

	Russian Learns You	Behaviorism, Constructivism	Reading, Listening
	Russian Made Easy	Behaviorism, Cognitivism	Reading, Listening, Speaking
			<i>Speaking</i> just partially developed
	Russian 101 Audio Course	Behaviorism	Reading, Listening, Writing
			<i>Writing</i> just partially developed

4 CONCLUSIONS

In summary, most RFL apps expose learners to a “mash-up” of pedagogical theories. In particular, the majority of general FLA apps, as well as RFL-specific apps, rely on the behaviorist approach. Also from cognitivism the apps borrow a lot: the focus on mental processes such as thinking, knowing, memory and problem-solving, as well as the idea of learning as a “recall” of stored information.

However, without more learner-centered methods such as constructivist paradigms, the enhancement of skills would not occur. In fact, especially the constructivist model, combined with behaviorism and cognitivism, promotes an integrated approach to language learning, thus ensuring a whole practice of the language.

Basically, this research showed that general FLA apps are more effective than RFL-specific apps in the integration of language skills. Nevertheless, these apps proved to be lacking in many respects and therefore still require “a shift in pedagogical approach” (Palalas & Hoven, 2016, p. 65) to make the learning process less fragmented and integrate it at a curricular level.

With its findings, this paper contributed to MALL (and ICT) research in RFL field. If research on MALL has developed rapidly during the last decades, apps have generally been ignored. To paraphrase Burston (2016, p. 3), they remain “on the fringes” of RFL studies. On the basis of the above, it can be concluded that what is needed to move forward current RFL research on MALL and ICT is a greater focus on the role of apps and, more in general, mobile devices in skill acquisition.

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APPENDIX

Apps' Analysis Grid	
Platforms	<input type="checkbox"/> both Android and iOS <input type="checkbox"/> Android
Monetization	<input type="checkbox"/> Subscription (User pays a recurring fee to access content) <input type="checkbox"/> Pay to Unlock (User pays a flat fee to access content) <input type="checkbox"/> In-App Advertisements (Advertisements placed throughout the app) <input type="checkbox"/> None (No monetization scheme)
Modes of grammar instruction	<input type="checkbox"/> Implicit (User must deduce grammar rules. No explicit coverage of grammar is provided by the app) <input type="checkbox"/> Explicit (Grammar explanations and/or grammar feedback are provided by the app)
Types of activities	<input type="checkbox"/> Vocabulary (Selecting, writing, or speaking words or sentences) <input type="checkbox"/> Grammar (Use of morphosyntactic forms) <input type="checkbox"/> Pragmatics (Situational use of expressions) <input type="checkbox"/> Pronunciation (Listening to or pronouncing letters, words or sentences) <input type="checkbox"/> Culture (Understanding Russian culture)
Language skills	<input type="checkbox"/> Reading <input type="checkbox"/> Listening <input type="checkbox"/> Writing <input type="checkbox"/> Speaking
Corrective feedback	<input type="checkbox"/> Sound (A sound indicates correctness of answer) <input type="checkbox"/> Visual (A visual input indicates correctness of answer) <input type="checkbox"/> Textual (A textual correction or explanation is provided when an answer is incorrect) <input type="checkbox"/> None (No corrective feedback is provided)