

QR-code in multilingual educational environment

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Abstract. Global information and multicultural environment skillfully balance a wide range of activities and priorities in the educational environment when trying to meet the requirements of adapting breakthrough mobile technologies. Currently the system of education must be aimed at preparing students for living coherently in the multicultural and multinational world through developing an appropriate set of values and behavior norms, through fostering their tolerant attitude to other cultural environments and through making the process of socialization easier as well. The contemporary concept of Baikal Institute of BRICS, Irkutsk National Research Technical University, leads to selecting up-to-date technologies to implement and maintain it. One of the innovative channels of the modern IT-based-management requirements is supposed to be the application of QR-code – 2D datamatrix, which covers comprehensive information regarding an object or phenomenon. QR-code proves to be efficient in developing optimal systems for designing educational processes, developing cross-cultural competence and providing social adaptation as economically as possible. The comprehensive assessment of the experiment with QR-code demonstrates good perspectives and large-scale, powerful capabilities.

Keywords: cross-cultural communication, multilingual educational environment, up-to-date mobile technologies, QR-code

QR-код в полилингвальной образовательной среде

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Аннотация. Глобальное информационное поликультурное пространство расставляет приоритеты в образовательной среде и выдвигает требования внедрения реновационных мобильных технологий. Система образования на сегодняшний день должна быть нацелена на подготовку студента к когерентному существованию в поликультурном многонациональном мире посредством формирования соответствующей системы ценностей и норм поведения, воспитания толерантного отношения к другим культурам, облегчения процессов социализации иностранных студентов. Современная полилингвистическая концепция Байкальского института БРИКС Иркутского национального исследовательского технического университета ведёт к поиску новых технологий её реализации. Одним из инновационных направлений современного этапа информатизации образования является задействование в процессах обучения и адаптации в образовательной среде QR-кода – двухмерного штрих-кода, содержащего исчерпывающую информацию об объекте или феномене. QR-код подтверждает свою эффективность в разработке оптимальных систем как для конструирования образовательных процессов и формирования межкультурной иноязычной компетенции, так и для процессов социализации с наименьшими затратами. Внедрение QR-кода в качестве адаптивного инструмента демонстрирует свою перспективность и широкие возможности.

Ключевые слова: межкультурная коммуникация, полилингвальное образовательное пространство, реновационные мобильные технологии, QR-код

Informatization of education is a natural reflection of modern global trends, since there is a total spread and influence of information technologies on all areas of human activity. The modern world proves to be a global information multicultural space.

The global information multicultural space imposes its own rules and requirements, and manages certain priorities in the educational environment. The education system is currently aimed at preparing students for their harmoni-

ous existence in the multicultural and multinational world through forming an appropriate set of values and norms of behavior and fostering a tolerant attitude to other cultures, customs, traditions and faiths. Students as a part of society realize their potential in the environment that encompasses characteristics of different (poly) cultures [1]. The concept of «poly-cultural education» is a relatively new notion, which is referred to «multicultural» education. Historically, the concept of «multicultural education» ap-

peared in the 60s of the 20th century as a system opposed to the traditional view of «single-culture» education, based on the «only true» paradigm, usually Eurocentric culture [2]. Multicultural education is a multifaceted process that forms cognitive processes of knowledge about values, traditions, norms of behavior, as well as such activities as, for example, resolving cross-cultural conflicts, providing assistance and support to representatives of contacting cultures [3, 4].

Under the auspices of this concept, the development of a communicative-oriented personality capable of intercultural communication is the key aspect. Models of the development of foreign-language intercultural competence have been comprehensively described in the works of many scientists. Thus, E.M. Vereshchagin and V.G. Kostomarov in the «Linguistic and Cultural theory of the word» offer an original semantic-based concept, where the lexical background is an element that provides the language with the opportunity to serve as a data guardian of intellectual wealth and spiritual values of a national culture. The researchers examine the processes of accumulation of information in the lexical level of the language, the role of vocabulary in communication, as well as in introducing a foreign language culture to students learning the foreign language [5]. S.G. Ter-Minasova further hypothesizes that «it is necessary to know not only the proper meaning of the word, but also the cultural background of the word»¹. Such studies ensure that the learning process is organized in such a way as to avoid transferring the knowledge and experience inherent in the native culture to the reality and way of life of the country which language is being studied, since this leads to a typical misunderstanding and violation of norms.

Therefore, the ideas of multilingual education are determined by the employment of foreign languages as a way of understanding special knowledge, raising awareness of different peoples' culture, interaction of different cultures, which contributes not only to people's understanding their personal and national identity, as well as their identity within a certain civilization, but also to realizing their global cultural community identity.

The open type (the integration into the European-wide and world space; multicultural fos-

tering) of polylingual education is the fundamentals of the concept of Baikalsk Institute of BRICS, Irkutsk National Research Technical University, that represents a purposeful process of learning the world culture by means of foreign languages.

One of the most innovative directions of the modern stage of informatization of education is the involvement of mobile technologies in the learning processes and adaptation within the educational environment [6].

Mobile technologies as a learning tool allow both implementing various types of educational activities and contribute to adapting to a multicultural educational environment when making it possible to handle tangible objects, adjust the results of educational activities, control in a self-automated way and promote interactive dialogue. The distinctive features of mobile technologies are their accessibility, multifaceted nature, diversity, as well as a stimulating and motivational component. A QR code is provided with all the above-mentioned characteristics. The abbreviation «QR» stands for «quick response», inasmuch a QR code is a two-dimensional barcode containing information that can be easily responded to by reading it with a special scanner. In modern reality, these codes are widely used in various fields, for example, in tourism (QR-code on historical and cultural objects), in retail (a link for consumers to a page on the Internet where they can leave their feedback), in advertising (QR-code can be printed on clothing), in business cards (information about the place of work), printed matter as a whole (a link to the source from which the cited information is obtained), etc. [7].

The sphere of education in today's rapidly changing world also actively utilizes QR codes in educational processes, for example, in teaching/learning a foreign language. They are applied as links to a text, Internet site, address. Reading QR-codes can help to find correct answers, to organize virtual exhibitions, create a language immersion environment in the classroom, as well as to conduct interactive games, for example, «Treasure hunt», in which instructions are read with smartphones [8]. All of these things make classes more appealing and effective, stimulate students extending the boundaries of the learning environment [8].

In relation to our research, there is a focus on the practical application of QR-codes within the socialization process for foreign students of Baikalsk Institute of BRICS. Communicating with first year foreign students who are at their initial

¹ Тер-Минасова С.Г. Языки и межкультурная коммуникация: учебное пособие. М.: Слово, 2000. 352 с.

stage of acquiring experience in Russian culture social interaction and adapting to so called “alien” culture for them made it possible to assess the value of the practical aspect of the project.

The survey conducted for foreign students from Africa showed that they experience some difficulties when socializing in the foreign language (Russian) culture. The results of the survey are presented below (Table): seventy-five percent of the interviewed students do not know the Russian language, twenty-five percent of the students know Russian at the “beginners” level; seventy-five percent respondents said that translating written Russian language texts was difficult for them, while twenty-five percent of them do not have any difficulties in translating information. All the interviewees use various online translators. For seventy-five

percent of the students, the main problem when using online translators is that they cannot read the handwritten names of food on price tags, and therefore, they cannot use any applications to translate words from one language to another, while only twenty-five percent have no difficulties. For seventy-five percent of the students surveyed, it takes about 5 minutes to buy food in the cafeteria/canteen, while for the others it takes less than three minutes.

The main problem of buying food in the canteen/cafeteria is the language barrier (five to ten percent of respondents), as well as there are difficulties in reading handwritten food names (twenty-five percent). The majority (seventy-five percent) of the foreign students surveyed want to facilitate an easier way to translate information from Russian into English.

Survey results

Questions	Results
Do you know the Russian language well?	75 % – no 25 % – I am a beginner 0 % – yes
Is it hard for you to translate information, which is written in the Russian language?	75 % – yes 25 % – a bit 0 % – no
Do you use any online translators?	100 % – yes 0 % – no
Do you have any problems with using online translators, for example, when you buy food at the cafeteria?	75 % – handwritten food names on price tags 25 % – no problems
How long does it take you to buy food at the cafeteria?	75 % – 5 minutes 25 % – about 3 minutes
What makes it difficult to buy food at the cafeteria?	50 % – language barrier 25 % – reading food names 25 % – nothing
Would you like to facilitate an easier way of translating and reading information?	75 % – yes 25 % – no

QR codes can make the adaptation process easier and even nullify this problem. Let us describe the process of implementing QR-codes.

Stage I. Choosing a canteen/cafeteria as a most popular environment while starting to socialize within the Russian language culture to apply QR-codes.

Stage II. Creating a QR code with a link to the menu, dish ingredients and prices tags in English.

Stage III. Turning the text menu into a QR-code through a QR-code generator (Figure):

Snacks:

Salad with nuts – 65 rubles;

Cream-soup with champignons – 80 rubles;

Soup “Borsch” – 80 rubles;

French fries – 60 rubles.

Main dishes:

Grilled salmon – 120 rubles;

Fried chicken – 120 rubles;

Spaghetti – 120 rubles.

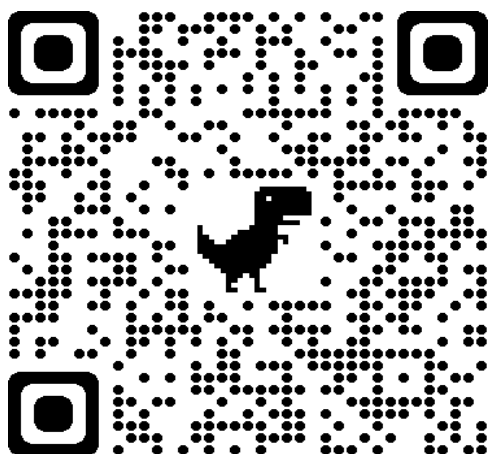
Desserts:

Chocolate fountain – 80 rubles;

Panna cotta – 80 rubles;

Tiramisu – 80 rubles.

Any QR code can be easily created through a suitable free QR code generator. There is a number of similar online generator services on the Internet (*qrcc.ru*, *qr-cder.ru*, *creambee.ru*, *qr-code.com.ua*, *qrcoder.ru*, *qrcode.kaywa.com*), which feature functionality [9, 10].



QR-code for the menu

Stage IV. Testing the QR-code and conducting after-testing survey of first year foreign students of Baikal Institute of BRICS regarding its practical value.

The perspective of this research can be the implementation of stage IV of testing and

interviewing students, as well as the development of QR-codes in other languages to facilitate the adaptation of foreign students in the Russian language environment. Employing MP3 QR-codes where dishes on the menu are heard in English or/and in other languages can also be considered.

Thus, it can be concluded that mobile technologies are indispensable to develop optimal systems for designing educational processes, developing intercultural competence, and socializing effectively. QR-codes make the learning process more visual; teach students to be independent; provide instant feedback; intensify the learning process and socialization; foster tolerance and sensitivity to cultural diversity; expand students' cognitive activity (analysis, synthesis, comparison, etc.); raise motivation to study; reduce the negative psychological factor – language barrier; develop various psychological mechanisms (imagination, attention, memory, etc.).

Библиографический список

1. Кондюрина И.М., Куноф П.А. Пути к успешной межкультурной коммуникации // Молодой учёный. 2016. № 7 (111). С. 87–89. [Электронный ресурс]. URL: <https://moluch.ru/archive/111/28517/> (15.04.2021).

2. Макаев В.В., Малькова З.А., Супрунова Л.Л. Поликультурное образование – актуальные проблемы современной школы // Педагогика. 1999. № 4. С. 3–10.

3. Белогуров А. Идея поликультурности в образовательном процессе // Высшее образование в России. 2005. № 3. С. 109–112.

4. Лосева А.А. Поликультурное образование: диалог культур и билингвальное обучение // Молодой учёный. 2016. № 7 (111). С. 52–53. [Электронный ресурс]. URL: <https://moluch.ru/archive/111/28069/> (15.04.2021).

5. Верещагин Е.М., Костомаров В.Г. Лингвострановедческая теория слова. М.: Русский язык, 1980. 320 с.

6. Итоги интернет-конференции «Актуальные проблемы методики обучения информатике и математике в современной школе» (Россия, г. Москва, МПГУ, 22–26 апреля 2019 г.) // МПГУ

[Электронный ресурс]. URL: <http://mpgu.su/novosti/itogi-internet-konferencii-aktualnye-problemy-metodiki-obucheniya-informatike-i-matematike-v-sovremennoj-shkole/> (20.03.2021).

7. Что такое QR-код // QR-PR – информация о QR-кодах [Электронный ресурс]. URL: <https://qr-pr.ru/qr-code/> (05.04.2021).

8. Бурлуцкая Н.А. QR-коды как средство повышения мотивации обучения // Наука и перспективы [Электронный ресурс]. URL: <https://cyberleninka.ru/article/n/qr-kody-kak-sredstvo-povysheniya-motivatsii-obucheniya> (16.03.2021).

9. Баданов А.Г. QR coder // Интерактивности – Web-сервисы для образования [Электронный ресурс]. URL: <https://sites.google.com/site/badanovweb2/home/qr-coder> (23.04.2021).

10. Генераторы QR-кодов // QR-PR – информация о QR-кодах [Электронный ресурс]. URL: <https://qr-pr.ru/qr-code-generator/> (03.04.2021).

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