Learning Folk Songs through the Game

Ginta PĒRLE-SĪLE, Arta KRŪZE, Zaiga PLEIKO

Institute of Literature, Folklore and Art, University of Latvia, Mukusalas 3, Riga, Latvia

`ginta.perle@lulfmi.lv, arta.kruze@lulfmi.lv,`
`zaiga.pleiko@lulfmi.lv`

ORCID 0000-0002-4305-3343, ORCID 0009-0004-5357, ORCID 0009-0008-5335-1644

Abstract. Gamification, or the use of game design elements in non-game context is an approach used to motivate people to engage with different, often complex content in entertaining ways. This approach is used in different fields, including the preservation and popularisation of cultural heritage. This article reflects upon the challenges, constraints, and experience of gamifying Latvian folk songs.

Keywords: gamification, game, folk songs, interaction with cultural heritage.

1. Introduction

The transmission and function of vernacular culture in the modern world is changing. Increasing use of technologies strongly influences how information is perceived, consumed, and reproduced, thus inevitably also influencing the preservation of cultural heritage and fostering the creation of new and/ or hybrid forms of folklore (Prensky, 2001; Bronner, 2009; Carr, 2010; Blank, 2013). Also, folk songs, the foundational element of Latvian traditional culture, part of the Latvian Culture Canon and UNESCO program "World Heritage"[1], experience a challenge, gradually becoming perceived as a static, archaic genre and losing their place in traditional practices of Latvians (Pērle-Sīle and Reinsone, 2022). This sets out a problem: what options could be used to stimulate interest and knowledge of folk songs in the modern world?

One option to explore is gamification, or the use of game design elements in non-game contexts. During the last decade, digital ways of gamification, especially in the field of education, have been studied as an approach that could potentially motivate players to engage in certain content (Prensky, 2001; Takalo et. al., 2010; Detering et. al., 2011; Qian and Clark, 2016; Dichhev and Dicheva, 2017).

Institute of Literature of Folklore and Art (hereinafter – ILFA) has extensive experience developing digital tools to raise awareness and interest in the diversity of

---

[1] More precisely: the Cabinet of Dainas – manuscript and working tool of the best-known edition of Latvian folk songs "Latvian Dainas" been included in this list since 2001.

Latvian cultural heritage. ILFA acquired significant experience in organizing various crowdsourcing campaigns by inviting people to share their daily practices, experiences, and festivities. Tools have been developed to enhance interaction with cultural heritage, strengthening knowledge transfer and citizen science. Such activities are e.g., manuscript transcription of Archive Latvian Folklore or recording their versions of poems and songs, etc.[2] (Daugavietis and Karlsone, 2022; Reinsone, 2020; Reinsone and Laime, 2022). Most of these tools already include game design elements, such as awards for achievements and entertaining visual solutions when engaging the content.

The aforementioned factors were a catalyst for gamifying folk songs and creating the game "Reassemble a Folk Song!"[3] The game was intended to raise awareness of the diversity of folk songs in terms of topics, modes of expression, and linguistic variations, emphasizing their significance in shaping Latvian identity and national culture. This article seeks to present the methodologies, conceptual framework, and guiding principles employed in the game's development, while also offering an overview of preliminary findings.

2. Designing the game

The target audience of the game is the general Latvian-speaking public with an interest or potential interest in Latvian traditional culture, particularly folk songs. Consideration was also given to its potential use in schools, prompting the exclusion of content that might be deemed unsuitable for children, such as offensive language or topics related to sexuality.

Latvian folk songs address every event and relationship in human life and serve the universal system of values, topics, and attitudes reflected there (e.g., being kind and sincere, hardworking, honouring older people, loving your family, etc.) are still essential nowadays. Acquirement of knowledge of formulas often used in folk songs, as well as getting familiar with principles for variation of text, are the critical factors for developing improvisation skills and understanding of the folk songs' nature. (CVD, 1972; Bula, 1992) Therefore, the focus on text was essential in facilitating the exploration of the diversity of folk songs and fostering a deeper understanding of their poetic evolution.

The variety of folk song heritage provides the basis for the game flow – dynamics derived from narrative, emotions, progress, a.o. (Hamari et. al., 2016; Dichev and Dicheva, 2017). Mixing well-known and less familiar folk song texts, and playing with different topics, including the moments of surprise and unexpected content, can motivate engagement. Another essential part of the game's success is mechanics – elements that move action, e.g., challenges, competition, rewards, etc. (Prensky, 2001; Hamari et. al., 2016; Dichev and Dicheva, 2017). The game mechanics are designed to motivate users to interact with text, minimizing the possibility of progressing successfully (and being rewarded) without thoroughly reading it. Folk songs of different lengths, dialects, levels

---

[2] All projects for society engagement by the ILFA are available on the platform *https://iesaisties.lv.*

[3] "Saliec tautasdziesmu!" Available online:
    https://saliectautasdziesmu.garamantas.lv

of poetics, digitized cultural heritage – leaflets from the Cabinet of Dainas – create the game's challenge and competitiveness.

To ensure accessibility for all users at any time and location, the game was developed as a web-based platform, available online, and incorporating a responsive design.

3. Game logic and administration

The game uses the puzzle-based approach – folk songs are broken into pieces, and the user must reassemble the text. To succeed, users should read each piece and put it in the right place, recreating the original text. The game mechanics introduce a progressive difficulty system: level by level, folk song breaks into smaller pieces – first in halves, then line by line, finishing in text broken into individual words. (See, Figure 1) In the last two levels, users, now acquainted with the variative nature of folk songs, are required to improvise or supply missing words themselves Mixing shorter and longer texts with different dialects creates an additional challenge. The game consists of 14 levels in total, each featuring three folk songs.

Figure 1. Screenshot from the game: partly reassembled folk song

To reassemble the folk song, players click on the broken parts randomly scattered on the right part of the screen. Each part in the sequence of clicking fills in the empty spaces on the left. It is also possible to return a wrongly placed piece to the right side by clicking on it. Once all pieces are moved, users can check their arrangement by clicking the "Verify"[4] button. Elements inserted correctly will turn green, and the ones inserted incorrectly will appear red. Players can check the correctness of the reassembled song an infinite number of times. The relevant folk song leaflet from Cabinet of Dainas appears below when the text is correct. Players can proceed to the next song only after their reassembled song has turned entirely green, at which point they can click the "Continue"[5] button.

The game design integrates a hint system to assist players. Firstly, the length of the piece to be inserted is indicated by the length of the empty lines and the display of

---

[4] On the button in Latvian: pārbaudīt.
[5] On the button in Latvian: turpināt.

breaks in them. Secondly, players can deliberately choose to use hints, but utilizing them affects the final score. There are three additional hints: first – to display punctuation marks – periods, and commas that allow finding relevant text pieces. The second and third hint provides a partial or full look of the corresponding text on the folk song leaflet from Cabinet of Dainas. These hints also include a challenge, because leaflets contain handwritten text in orthography of the second part of the 19th century. This feature not only familiarizes users with the historical development of the Latvian written language but also serves as a motivator for further exploration of the history of Latvian folk song collections. To prevent players from becoming stuck on a level, a "Give up!" option is available (see Figure 2).

Figure 2. Screenshot from the game: wrongly reassembled folk song, use of hint "Show the leaflet"

The game incorporates a reward system to motivate players and track their performance. Players earn 20 points each time the song is correctly reassembled without hints and 15 points when hints are used. 30 points are deducted from the score if players choose the "Give up!" option. The use of hints further reduces the total amount of earned points: 10 points for showing the punctuation marks, 5 points when showing a partly blurred leaflet of a folk song, and 10 points for the option to see a whole, unblurred leaflet. Players' performance is included in the overall player rankings, available when completing the game. Additionally, based on the total points accumulated, players are awarded a symbolic bird title. Using the symbolic role and perception of these birds in traditional culture, the titles are: over 600 points – the Great Singer Nightingale, 300-599 points – the Wise Raven, 100–299 – Song Copy-Master Sturnus, up to 99 – One Hit Singer Corncrake.

The game is designed with a login system to enable users to continue a previously abandoned game, prevent songs from repeating when starting a new game, and keep track of individual player performance.

A separate administration environment has been set up for managing the game and monitoring player activity, accessible only to authorized users. The administrator can add or remove folk songs and relevant sheets from the Cabinet of Dainas. When a text is added to a certain level, the system automatically determines the number of pieces to be created from it. For the last final levels, the administrator manually removes words that players are required to insert themselves.

The administrative environment part stores data for each game separately, containing the user information, game progress, and performance metrics. This information supports analysis and further improvements to the game. Additionally, the system incorporates advanced features to enhance functionality and user experience. For example, it can detect whether users input real words during the more complex levels, as opposed to random combinations of letters or numbers. Also, the system automatically recognizes identical lines or words, ensuring that swapping identical pieces does not result in an incorrect outcome during the reassembly process. The system also monitors the length of broken lines and words, automatically adjusting the appearance of the lines on the left (empty) side.

4. Results and conclusions

The analysis of user interaction data offers valuable insights into player engagement and the application of gamification to folk songs. The data indicates that the game was played 2339 times in total from November 2022 to February 2024. Out of 64 recorded instances, players opened the game without making any attempt to play. Additionally, user engagement was most frequently interrupted during the first level. These behaviours – opening the game without playing and abandoning it during the initial level – are likely attributable to some players' interest in exploring the game's interface and mechanics without a genuine intention to engage in gameplay.

As mentioned, there are 14 levels to play, each containing three songs. Therefore, to complete the game, the player must reassemble 42 folk songs. Data shows that 202 times players reached level 14, while the game was completed 162 times, accounting for 6.9% of attempts. This result indicates that the game may need to be shorter and less complex. Additional factor – there were nine reports on testing the game in classrooms. Reports show that pupils of 6–10th grade can complete approximately half (6–9) of the levels within a lesson, but for younger pupils, mandatory login was a disruptive issue.

Analysis of the levels where users disengaged from the game reveals a correlation between encountering longer texts and abandoning game. This trend may be attributed to the increasing difficulty of perceiving and comprehending lengthy and complex texts, potentially influenced by changes in attention span and related cognitive factors.

The feedback received from e-mails, social media, and teachers during seminars and approbation in lessons indicates that the puzzle approach was chosen successfully. It effectively combines the option to discover various texts while also increasing the challenge incorporated in the game mechanics. It involves comprehending the text to recreate it and, song by song, becoming familiar with the patterns of traditional folk song creation.

The promotional activities of the game included the press release issued by ILFA which was disseminated through major Latvian news portals, various cultural institutions, and libraries. Additionally, the game's creators were featured in interviews on Latvian Television and Latvian Radio, significantly boosting visibility. On social media, posts about the game were shared more than 500 times within the first 3 days of its announcement. Quotations of folk songs from the game were shared and received predominantly enthusiastic comments. A clear correlation was observed: the number of game players increased following the appearance of news and interviews in the media, particularly on television. However, the overall target audience appeared to be overly

broad. After the initial surge in interest, engagement declined, and the primary intended demographic – school-aged pupils – participated less actively than anticipated. Feedback from the teachers suggested that for the game to be suitable for educational use, it should be more focused. This means that the game should be shorter, less complex (both in terms of language and poetic content), and directly related to the specific topics covered in the educational program.

User feedback on the game's graphic design was diverse. The differences could relate to the age of the players: adult users generally favoured the minimalist aesthetic, appreciating its ability to direct focus toward the text, while the younger audience expressed a preference for a more visually engaging design, including vibrant colours, dynamic elements, and animations. However, the behaviour of players in the administration environment (checking incorrect options, switching the levels, etc.) and the feedback suggest the need to improve the intuitiveness of the game and/or way of instructions. Although instructions are provided to players prior to starting the game, it is hypothesized that a significant number of players may skip reading them, which contributes to the initial difficulty.

Thus, it can be concluded that Latvian folk songs can be effectively gamified to stimulate society's interest in the cultural heritage of folk songs. The use of puzzle-based mechanics appears to be a promising approach for teaching and learning folk song texts.. However, to integrate this method successfully into educational settings and enhance students' understanding of traditional culture and folk songs, adjustments are necessary to fit different age groups and educational programs.

Acknowledgments

References

Blank, T.J. (2013). Hybridizing Folk Culture: Toward a Theory of New Media and Vernacular Discourse, *Western Folklore*, **72**(2), 105–130.

Bronner, S.J. (2009). Digitizing and Virtualizing Folklore. In: T.J. Blank (ed.) *Folklore and the Internet: Vernacular Expression in a Digital World*. University Press of Colorado, 21–66.

Bula, D. (1992). Par improvizāciju latviešu tautasdziesmās [Improvisation in Latvian Folk Songs]. In: J. Darbiniece (red.). *Latviešu folklora: tradicionālais un mainīgais*. Rīga: Zinātne, 122–130.

Carr, N.G. (2010). *The Shallows: What the Internet is Doing to Our Brains*. New York: W. W. Norton and Co.

CVD (1979). Ceļa vārdi dziesmai [Farewell to Folk Songs]. *In* aut. kol. *Latviešu tautasdziesmas* [Latvian Folk Songs], 1. sēj. Rīga: Zinātne, V–XXI.

Daugavietis, J., Karlsone, A. (2022). Latvijas digitālo humanitāro zinātņu rīku un resursu izstrādāšanas prakses. *Letonica*, **47**, 12–51.

Detering, S., Dixon, D., Khalned, R., Nacke, L. (2011). From Game Design Elements to Gamefulness: Defining Gamification. In: *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*. MindTrek, 9–15.

Dichev, C., Dicheva D. (2017). Gamifying Education: What is known, What is Believed and What Remains Uncertain: A Critical Review. *International Journal of Educational Technology in Higher Education*, **14**(9), 474–480.

Hamari, J., Shernoff, D. J., Rowe, E., Coller, B., Asbell-Clarke, J., Edwards, T. (2016). Challenging Games Help Students Learn: An Empirical Study on Engagement, *Flow and Immersion in Game-Based Learning. Computers in Human Behavior*, 54, 170–179.

Pērle-Sīle, G., Reinsone, S. (2022). Transcription as a Tool for Deep Reading and Teaching of Folklore. In: K. Berglund, M. La Mela, I. Zwart (eds.) *DHNB 2002: Proceedings of the 6th Digital Humanities in the Nordic and Baltic Countries Conference 2022*, 390–400.

Prensky, M, (2001). *Digital Game-Based Learning*. New York: McGraw-Hill.

Qian, M., Clark, K.R. (2016). Game Based Learning and 21st Century Skills: A Review of Recent Research, *Computers in Human Behavior*, **63**, 50–58.

Reinsone, S. (2020), Searching for Deeper Meanings in Cultural Heritage Crowdsourcing. In P. Hetland, P. Pierroux, L. Esborg (eds.). *A History of Participation in Museums, Archives*. Routledge, 186–207.

Reinsone, S., Laime, S. (2022). Latviešu folkloras krātuves digitālais arhīvs Garamantas.lv: priekšvēsture un attīstība [Digital Repository Garamantas.lv of Archives of Latvian Folklore: Background and Development]. *Letonica,* 47, 52–69.

Takatalo, J., Hakkinen, J., Kaistinen, J., Nyan, G. (2010). Presence, Involvement, and Flow in Digital Games. In: R. Bernhaupt (ed.) *Evaluating User Experience in Games: Concepts and Methods*. Springer, 23–46.